



© SwissTech Convention Center

Abstractbook

SWISS
UROLOGY

Schweizerische Gesellschaft für Urologie
Société Suisse d'Urologie
Società Svizzera di Urologia



74. Jahresversammlung | 74e Assemblée annuelle
Schweizerische Gesellschaft für Urologie
Société suisse d'urologie

Jahreskongress | Congrès annuel
Schweizerische Interessengemeinschaft für Urologiepflege
Association Suisse des Soins en Urologie

5.-7. September 2018

SwissTech Convention Center, Lausanne
sgu2018.congress-imk.ch

Posterdiskussion I – Prostatakarzinom

Discussion des posters I – Cancer de la prostate

P01: PSA fails to predict treatment failure in focal high-intensity focused ultrasound therapy in prostate cancer

PM Huber, N Afzal, M Arya, S Boxler, S Charman, T Dudderidge, M Emberton, S Guillaumier, RJ Hindley, L Leemann, H Lewi, N McCartan, CM Moore, R Nigam, R Nigam, C Ogden, R Persad, K Shah, GN Thalmann, J Virdi, M Winkler, HU Ahmed
Bern (CH), Dorset (GB), London (GB), Southampton (GB), Basingstoke (GB), Zürich (CH), Chelmsford (GB), Surrey (GB), Bristol (GB), Harlow (GB)

Objective

To determine if PSA kinetics following focal high-intensity focused ultrasound (HIFU) for the treatment of non-metastatic prostate cancer can predict treatment failure.

Materials and methods

Retrospective analysis of our prospectively maintained HIFU (Sonablate 500) database, 598 patients were identified who underwent a focal HIFU (03/2007 to 11/2016). Follow-up with 3-monthly clinical visits and PSA testing in the first year. Thereafter PSA 6-monthly or annually at least. Routine and for-cause mpMRI followed by biopsies were offered. Treatment failure was defined by any secondary treatment (ADT/chemotherapy, cryotherapy, EBRT, RRP, or re-HIFU), metastasis from prostate cancer without further treatment, tumour recurrence with Gleason score ≥ 7 on prostate biopsy, or prostate cancer-related mortality. We evaluated a whole series of „nadir plus XX“ thresholds (with XX from 0.1 to 2.0) for predicting failure using sensitivity and specificity, and Receiver Operating Characteristic (ROC) curve (statistics using R-language).

Results

Median Gleason (range) 7 (6-9), in 80% Gleason $\geq 3 + 4 = 7$. Tumours staged as localised T1c-T2c in 522/596 (88%) cases, 74/596 (12.4%) were radiological T3a/b. Baseline median (IQR) PSA was 7.80ng/ml (5.96-10.45) in those with failure and 6.77ng/ml (2.65-9.71) in those without failure. Using ASTRO criteria, sensitivity was 18.7%, specificity 68.3%. Evaluating other PSA nadir+XX thresholds, the highest sensitivity of 61.2% was shown for nadir + 0.1ng/ml; the highest specificity of 59.1% for nadir + 2.0ng/ml. All definitions of PSA failure incorporating nadir + XX thresholds led to significant false positives with the ROC curve shifted below the 50% line (Figure 1).

Conclusion

PSA kinetics following focal HIFU therapy occur differently following whole-gland therapy. Using any „nadir plus“ definition leads to significant rates of false positives which might lead to unnecessary diagnostic procedures.

P02: Structured reporting of prostate magnetic resonance imaging improves interdisciplinary communication

C Wetterauer, D Winkel, J Federer-Gsponer, A Halla, S Subotic, A Deckart, HH Seifert, D Boll, J Ebbing Basel (CH)

Background and aims

Appropriate communication of imaging findings is vital for patient care, as referring physicians depend on the contained information in decision making and subsequent treatment. Traditional radiology reports contain non-structured free text using narrative language and the associated variability can hamper the information transfer and diminish the clarity of the report. This study investigates how newly developed structured reports (SRs) of prostate magnetic resonance imaging can improve interdisciplinary communication as compared to the use of non-structured reports (NSRs).

Material and Methods

A total of 100 cases (50 NSRs and 50 SRs) mentioning just one prostatic lesion were presented to 4 urologists with expert level experience in prostate cancer surgery or targeted MRI TRUS fusion biopsy. The readers had to plot the tumor location in a 2-dimensional prostate diagram and fill in a questionnaire focusing on information on clinically relevant key features and the structure of the report. A validated scoring system distinguishing "major" and "minor" mistakes was used to evaluate the accuracy of the tumor position in the prostate diagram.

Results

The mean total score for SRs was significantly higher 28.46 (range 13.33 - 30) as compared to NSRs 21.75 (range 0 - 30) ($p < 0.01$). The overall rate of major mistakes (54%) and minor mistakes (74%) for NSRs was significantly higher ($p < 0.01$) than for SRs (10% and 22%). The rate of radiologist re-consultations was significantly ($p < 0.01$) lower for SRs (19%) as compared to NSRs (85%). SRs were also rated significantly better in regards to determining the clinical tumor stage as compared to NSRs ($p < 0.01$) and more valuable for further clinical decision making and surgical planning ($p < 0.01$). SRs achieved significantly higher ratings for quality of the summary and overall satisfaction as compared to NSRs ($p < 0.01$).

Conclusions

Structured reporting of prostate MRI helps to improve interdisciplinary communication. It enables expert urologist to assess the exact location of single prostate cancer lesions more accurately, and therefore, can help to facilitate surgical planning. Furthermore, structured reporting of prostate MRI leads to a higher satisfaction level of the referring physician.

P03: Continence after robot-assisted radical prostatectomy : Patients-reported outcome and contributing factors

A Roosendaal, O Windisch, T De Perrot, G Wirth, C Iselin
Genève (CH)

Context

Early prostate cancer detection increases the number of radical prostatectomies. This procedure provides excellent oncological outcomes but comes with functional side-effects. Continence preservation is a big challenge because it significantly affects quality of life.

Objective

Identification of pre- and per-operative factors influencing continence after robot-assisted radical prostatectomy.

Materials and methods

Data from 713 patients who underwent robot-assisted radical prostatectomy from February 2006 to February 2018 were collected. Patients were categorized continent or incontinent based on the definition of no pads at 3 months and 12 months. ICS I and II questionnaire were used for patient reported continence status and the influence on quality of life. Pre- or per-operative factors were studied in univariable statistics (chi-squared and wilcoxon), and compared in a multivariable logistic regression model predicting incontinence.

Results

482 patients answered our questionnaire at 3 months, and 452 at 12 months. 46% had regained continence at 3 months and 75% at 12 months. Univariable statistics showed that prostate volume ($p = 0.001$) pre-operative IPSS score ($p = 0.001$), pre-operative ICS score I ($p = \dots$), the operator ($p = 0.0001$), nerve sparing ($p = 0.001$) are significant independent factors for post-operative incontinence at 3 months. At 12 months only age is significant ($p = 0.0244$). All these significant predictors were used in multivariable regression model: at 3 months ICS I pre-operative is significant ($p = 0.03$), the operator ($p = 0.04$) and age ($p = 0.001$), at 12 months only age ($p = 0.005$) and the operator ($p = 0.02$).

Conclusion

Several pre and per-operative factors may influence post-prostatectomy incontinence.

P04: Impact of nodal positive disease after radical prostatectomy on biochemical recurrence and survival

F Lehner, S Sigg, E Keller, K Saba, T Sulser, D Eberli, A Mortezaei
Zürich (CH)

Background

The optimal postoperative management of nodal positive men after radical prostatectomy remains a clinical challenge due to limited available data. Here we report the oncological outcome of a contemporary cohort of nodal positive patients who underwent robot-assisted radical prostatectomy (RARP) and extended pelvic lymph node dissection (ePLND) at our tertiary care center.

Material and Methods

For this retrospective analysis, 98 nodal positive men who underwent RARP and ePLND at our institution between 2004 to 2018 were identified. Based on internal guidelines, adjuvant radiotherapy (RT) or immediate androgen deprivation therapy (ADT) was only offered in patients with PSA persistence. The investigated outcome measures were PSA level, biochemical recurrence free survival (BCRFS), cancer specific survival (CSS) and overall survival (OS), as well as treatment in terms of RT and ADT. BCR was defined as a PSA level of $\geq 0.1\mu\text{g/ml}$.

Results

Median follow up was 41.5 months (IQR 23 - 76). Postoperatively, 47 (47.9%) patients reached the PSA nadir of $< 0.1\mu\text{g/ml}$ and in 50 (51%) patients a PSA persistence was confirmed.

For all nodal positive men, the OS and CSS after 5 years (y) was 96.5% and 100%, respectively.

In patients achieving a postoperative nadir of $< 0.1\mu\text{g/ml}$, the estimated 5y BCRFS, OS and CSS was 21.5%, 100% and 100%, respectively. The median time to BCR was 21 months (IQR 8-34). Salvage RT, deferred ADT or a combination was applied in 12 (25.5%), 5 (10.6%) and 10 (21.3%) men, respectively.

In patients with PSA persistence, adjuvant RT, immediate ADT or a combined approach was performed in 10 (20.0%), 18 (36.0%) and 14 (28.0%) men, respectively. Eight patients (16.0%) declined any adjuvant therapy during follow-up. In this cohort the estimated 5y OS and CSS was 93.5% and 100%.

A higher number or localization of positive lymph nodes was not associated with a shorter BCRFS. However, positive nodes in all three anatomical regions was a predictor of postoperative PSA persistence (HR 15.9, 95% CI 1.7 - 145.8, $p = 0.14$).

Conclusions

Our follow-up data from nodal positive patients demonstrate an excellent 5y OS and CSS regardless of the postoperative PSA level. However, most patients required immediate or deferred RT or/and ADT during follow up. Although half of the patients had undetectable PSA postoperatively, only 20% remained recurrence-free after 5 years. Finally, the metastatic pattern of involved nodes did not predict the outcome.

P05: External validation of multivariable prostate cancer risk calculators incorporating multiparametric magnetic resonance imaging

K Saba, MS Wettstein, L Lieger, O Märzendorfer, C Poyet, T Sulser, D Eberli, A Mortezaei
Zürich (CH)

Background & Aims

Multivariable prostate cancer risk calculators (PC-RC) aim to guide the decision to undergo prostate biopsy by predicting the prevalence of clinically significant prostate cancer (csPCa) defined as Gleason Score $\geq 3+4$. A new generation of unvalidated PC-RCs incorporate information of multiparametric magnetic resonance imaging (mpMRI) to enhance their predictive performance. The aim of this study is to externally validate three of the novel PC-RCs (Radkte et al. [RC1], Mehrlivand et al. [RC2] and van Leeuwen et al. [RC3]).

Material & Methods

All men without a previous PCa diagnosis who underwent TRUS-mpMRI-fusion template prostate biopsy at our institution between 2014 and 2018 were considered for this study. Patients without a region of interest on mpMRI were excluded. All predictors were retrospectively collected and the probabilities of csPCa were calculated according to the logistic regression models of RCs1-3. Discrimination, calibration and clinical usefulness were assessed by ROC analyses, calibration plots and decision curve analyses, respectively.

Results

After exclusion of 574 patients (400 [69.7%] due to prior diagnosis of PCa, 109 [19.0%] due to negative mpMRI and 65 [11.3%] due to missing predictors), 361 men were eligible for final analysis, of whom 258 (71.5%) were biopsy naïve and 103 (28.5%) had at least one prior prostate biopsy. MpMRI TRUS fusion guided template prostate biopsy detected csPCa in 166 (46.0%) patients. RC1 revealed an area under the curve (AUC) of 0.74, whereas both RC2 and RC3 yielded an AUC of 0.83 each. Calibration of RC2 (predicted proportion of csPCa of 72.3% versus observed proportion of csPCa of 46.0%) was considerably worse compared to RC1 (47.7% versus 46.0%) and RC3 (48.5% versus 46.0%). RC3 added an incremental benefit over the other PC-RCs in a decision curve analysis across the range of clinically meaningful threshold probabilities to biopsy.

Conclusion

Incorporation of mpMRI as an additional predictor for PC-RCs leads to better predictive performance in comparison to previously published results of external validations of established mpMRI-naïve PC-RCs. Among the novel PC-RCs, the model of Van Leeuwen et al. (RC3) outperformed its competitors cumulatively with regards to discrimination, calibration and clinical usefulness within our external validation cohort.

P06: Can the false-negative rate of mpMRI / TRUS fusion guided targeted biopsies be reduced by a novel extended targeted protocol?

B Kaufmann, K Saba, T Sulser, D Eberli, A Mortezaei
Zürich (CH)

Introduction

We recently could show that mpMRI / TRUS fusion guided targeted biopsy (FTB) misses a significant number of clinically relevant cases of prostate cancer. We therefore evaluate in this study the feasibility of different extended FTB protocols in order to overcome this problem and increase the detection rate of FTB.

Methods

We retrospectively identified 72 patients with a total of 99 lesions on multiparametric magnetic resonance imaging (mpMRI) classified as Likert score 3 to 5 diagnosed with a clinically significant prostate cancer (csPCa, defined as Gleason score ≥ 7) by transperineal template saturation prostate biopsy (TTSPB) and FTB. Biopsies were performed with the BiopSee MRI/TRUS fusion biopsy system. Core localization was analyzed in the fusion software regarding 3D-proximity to each mpMRI lesion classifying them into different proximity groups: group 1 consisted of FTB and TTSPB cores placed inside of the lesion, group 2 and 3 included cores of group 1 and cores with a proximity of 1 and 1.5 cm to the lesion, respectively. The detection rate of the different groups were compared using the McNemar test.

Results

The total median number of cores taken was 41 with three FTB cores per lesion. In a per-lesion analysis (n=99), the detection rate of csPCa in the FTB group and group 1-3 was 55.6% (n=55), 70.7% (n=70), 86.9% (n=86) and 86.9% (n=86, p0.001), respectively. Use of the protocol with cores localized in the mpMRI lesion and in its 1 cm proximity only (group 2) would have missed diagnosis of csPCa in three (4.1%) men compared to the reference test of FTB combined with TTSPB.

Conclusion

An extended FTB approach with additional cores around the mpMRI lesion might provide comparable detection rates as reported for combined approaches including systematic biopsy. This might overcome the issue of false-negative FTBs, reduction of core numbers and morbidity. Prospective studies are needed to prove this concept.

P07: Biopsies prostatiques transrectales ciblées avec fusion à l'IRM. Taux de détection et facteurs prédictifs positifs: étude prospective sur 231 cas.

G Verzotti, G Wirth, CE Iselin, J Klein
Genève (CH)

Objectifs

Les biopsies prostatiques par voie endorectale biplan restent le gold standard pour la détection précoce du cancer prostatique (CP). De multiples systèmes de navigation permettent d'effectuer des biopsies ciblées à l'IRM (BCI) avec par conséquent une augmentation significative du taux de détection. Le but principal de notre étude était d'évaluer le taux de détection du cancer de la prostate en corrélation avec la suspicion radiologique des lésions (score PI-RADS). Le but secondaire était d'évaluer les facteurs prédictifs positifs (FPP).

Matériels et méthodes

Inclusion de toutes les BCI effectuées dans notre institution entre novembre 2012 et mars 2018. Critères d'exclusion: surveillance active et patients déjà biopsiés au préalable. Paramètres analysés: âge, PSA, volume prostatique, densité du PSA, toucher rectal, PI-RADS, caractéristiques des biopsies. Calcul des valeurs moyennes et des écarts types, comparés selon le test t de Student, les variables qualitatives ont été comparés selon le test exact de Fischer.

Résultats

Inclusion de 231 patients. 175 patients ont été exclus (17 en surveillance active et 158 déjà biopsiés au préalable).

Le taux de détection du CP est de 56%. Il y a une corrélation significative entre le taux de détection et le score PI-RADS, qui était de 37% pour les lésions PI-RADS 3, 53% pour les PI-RADS 4 et 88% pour les PI-RADS 5 ($p < 0.001$). Absence de corrélation entre le score PI-RADS et le score Gleason bioptique ($p = 0.35$).

L'analyse multivariée retrouve une corrélation hautement significative ($p < 0.001$) entre le score PI-RADS et le taux de détection, qui est multiplié d'un facteur 10 pour les PI-RADS 5 comparés aux PI-RADS 3.

L'âge ($p < 0.001$), le volume prostatique ($p < 0.001$), la densité du PSA ($p < 0.001$), ainsi que la probabilité calculée selon le score SWOP pour la présence de CP ($p < 0.001$) sont des FPP. Le toucher rectal ($p = 0.068$), taux de PSA ($p = 0.284$), le nombre de cylindres bioptiques ($p = 0.084$), la longueur totale des cylindres ($p = 0.164$), le nombre de cibles ($p = 0.268$) et le nombre de cylindres dans les cibles ($p = 0.917$) ne sont en revanche pas des FPP.

Conclusion

Cette étude prouve la bonne performance des BCI pour la détection du CP. Le score de PI-RADS corrèle significativement avec le taux de détection, avec une probabilité de biopsies positives qui se multiplie par 10 en cas de lésion PI-RADS 5. Les FPP sont l'âge, le volume prostatique, la densité du PSA et le score SWOP.

P08: Initial Gleason and PIRADS scores are the key predictors of active treatment in modern active surveillance cohorts

A Rakauskas, I Lucca-Boehlen, T Tawadros, R Burruni, F Herrera, J Meuwly, J Bourhis, S La Rosa, P Jichlinski, D Berthold, M Valério
Lausanne (CH)

Introduction

Active surveillance criteria might be expanded as a result of better risk-stratification at initial diagnosis. However, prospective studies in active surveillance were carried out in the pre-MRI and targeted biopsy era. Therefore, the value of these clinical tools in a context of a modern active surveillance setting is yet to be fully determined. The objective of this study was to investigate the value of imaging-derived measures to predict transition to active treatment.

Methods

This is a retrospective analysis of a prospective multiple cohort study including patients with localized prostate cancer managed with active surveillance since 2012. Patients with strict active surveillance criteria and patients with expanded active surveillance criteria (mainly: PSA < 15 ng/ml, MR-visible lesion and/or Gleason 3+4) were included. All men underwent PSA check, digital rectal examination, mpMRI, standard and targeted biopsy at baseline. Follow-up included biannual PSA check, as well as mpMRI and biopsy once a year for the first two years. Afterwards, men were mainly followed by PSA and mpMRI every two years. "For cause" additional diagnostic tests were allowed at clinicians discretion. Univariate logistic regression was performed to investigate the value of available criteria as predictors of active treatment. A multivariate model was then calculated using these predictors. The statistical significance was set at < 0.05.

Results

Overall, 46 patients were included. The mean age was 65 (SD ± 5.6). The median follow-up time was 36 months (range 24-42). The median time to active treatment was 12 months (range 12-18). In total, 15 patients underwent active treatment. Main reasons for transition were Gleason score progression (8 patients) and tumor volume progression (5 patients). Using univariate analysis, we found that PIRADS and Gleason score significantly predicted transition to active treatment. In multivariate analysis, they remained independent predictors: PIRADS score (OR 1.95; 95% CI 1.04–3.64) and Gleason score (OR 6.25; 95% CI 1.07–36.23). The area under the curve incorporating PIRADS and Gleason score was 746%, comparing to 6271% for Gleason score alone.

Conclusions

mpMRI PIRADS results and Gleason score independently predict the need for active treatment in modern active surveillance cohorts. This study confirms that mpMRI provides key information about the likelihood to discontinue active surveillance as a result of disease progression.

P09: The utility of in-bore MRI-targeted biopsy in patients with negative software-based MRI-TRUS fusion biopsy

A Perrin, W Venderink, M Patak, J Fehr, C Möckel, P Jichlinski, B Porcellini, I Lucca-Boehlen, J Futterer, M Valério
Lausanne (CH), Nijmegen (NL), Zürich (CH)

Introduction and objectives

There is level 1 evidence showing that targeted biopsy directed towards mpMRI-visible lesions is more accurate than systematic TRUS-guided biopsy in detecting clinically significant prostate cancer. Targeted biopsy is mostly performed using MRI/TRUS software-based fusion (MRI/TRUS-Bx). There is no consensus regarding the management of patients with visible lesions and subsequent negative targeted biopsy. The objective was to evaluate the utility of in-bore MRI-targeted biopsy (MRI-Bx) in this group of patients.

Methods

A retrospective analysis was performed using data from two European centres expert in MRI-Bx. Consecutive patients were selected based on the following criteria: mpMRI lesion/s PIRADS ≥ 3 , negative MRI/TRUS-Bx and no previous treatment of prostate cancer. Patients' characteristics were extracted from patient records. Utility was defined as the percentage of men in which MRI-Bx detected clinically significant prostate cancer, which was defined as any Gleason pattern ≥ 4 . A multivariate analysis was performed to identify candidate variables that might suggest positive findings on further MRI-Bx

Results

Fifty-three men were included in this study. Median age was 68 years (IQR 64-68) median PSA was 7.6 ng/ml (IQR 5.2-10.9) and median prostate volume was 59 ml (IQR 44-84). All mpMRI were performed according to the ESUR guidelines. Altogether, 56 lesions were targeted. PIRADS score was 3 in 9 cases (16%), 4 in 30 cases (54%) and 5 in 17 cases (30%); median maximum lesion length was 15mm (IQR 11-18). MRI/TRUS-Bx was performed using a transrectal approach. A median of 4 cores were collected (IQR 2-5) in MRI/TRUS-Bx and all were negative. Median time between the two biopsy sessions was 3 months (IQR 1-7). MRI-Bx was performed using a transrectal approach; a median of 2 cores per lesion were collected (IQR 2-3). No cancer, clinically insignificant and clinically significant cancer were found in 33 (59%), 9 (16%) and 14 (25%) targeted lesions, respectively. Median maximum cancer core length and maximum positive percentage were 9mm (3-13) and 55% (21-80%). The only predictor of significant disease on subsequent biopsy was prostate volume ($p=0.015$), with an ideal cut-off at 70ml.

Conclusion

In this study, in almost one in four patients with previous negative MRI/TRUS-Bx, MRI-Bx was able to detect clinically significant prostate cancer. According to this study, further MRI-Bx might be contemplated mainly in men with large prostate

P10: Complications among Men undergoing Transperineal template Biopsy of the Prostate

A Sauck, M Randazzo, H John
Winterthur (CH)

Introduction

Transperineal template prostate biopsy (TTPB) has a higher cancer detection rate than standard biopsy [1]. However, morbidity compared to transrectal biopsy is discussed controversially in the literature. Therefore we analysed the outcomes in terms of postoperative morbidity and complications among men undergoing TTPB from a single institution.

Material and Methods

From 2015 to 2018 n=429 men underwent TTPB for an elevated PSA-value. TTPB was performed under general or spinal anesthesia in a day surgery setting. 30 minutes before biopsy, a cefuroxim antibiotic cover was given to all participants intravenously. We retrospectively recorded complications according to the Clavien classification. Furthermore, symptoms such as hematuria, hematoma and hemospermia were actively asked during follow-up. Continuously coded variables were given by median (IQR).

Results

Overall, 429 men underwent TTPB, of which 104 were excluded from analysis due to lacking MRI data. On median 20 (18-20) cores were taken during TTPB. Median PSA and prostate volume was 4.9 (10.3-12.2)ng/ml and 48 (34-73), respectively. Of 325 men, 11(3,4%) suffered from urinary retention requiring catheter placement, two (18.1%) of which had spinal anesthesia. Urinary tract infection, urosepsis, hemospermia and gross hematuria was reported in 2 (0,6%), 2 (0,6%), 26 (8%) and 44 (13,5%), respectively. Two (0.6%) patient had a slight perineal hematoma.

Conclusion

The current series was found to have a clearly lower complication rate as compared to those reported in the literature [2]. Importantly, no patient required hospitalization or had sepsis. The rate of acute urinary retention was low and might in part be attributed to the use of spinal anesthesia and increased prostate volume. We conclude from our results that transperineal template prostate biopsy is a safe procedure with low morbidity for the diagnosis of prostate cancer.

P11: Evaluation de la récurrence biochimique après prostatectomie radicale laparoscopique robot-assistée (PRRA) chez des patients présentant un adénocarcinome prostatique à haut risque

A Ferreira Reis, J Klein, A Roosendaal, G Wirth, J Schwarz, C Iselin
Genève (CH)

Introduction

La prostatectomie radicale robot-assistée (PRRA) fait partie d'un traitement multimodal pour le cancer de la prostate (CP) à haut risque. Le but de notre étude était d'évaluer les résultats à long terme des patients ayant une PRRA pour des CP à haut risque : la survie sans récurrence biochimique ; la nécessité d'un traitement adjuvant ainsi que les facteurs de risque de récurrence biochimique (RBC).

Méthodes

Analyse rétrospective de tous les patients traités par PRRA pour un adénocarcinome prostatique \leq pT3b et / ou N1, entre novembre 2007 et août 2017 dans notre institution. La RBC a été définie comme une valeur de PSA $> 0,2$ ng/ml.

Résultats

Inclusion de 74 patients, dont 18 (24,3%) avec des ganglions lymphatiques positifs (N1) sans pT3b ou pT4. 55 patients (74,3%) avaient un pT3b, dont 16 (21,6%) étaient N1. Un seul patient avait un CP pT4 N0.

L'âge moyen était de 64 ± 7 ans. Le PSA moyen était de $16,3 \pm 23,2$ ng / ml avec un volume prostatique moyen de 45 ± 19 g. La proportion moyenne de tumeurs était de $18 \pm 15\%$. 4% des patients avaient un score de Gleason (GS) 6, 55% un GS 7 et 41% un GS ≥ 8 .

Dans l'ensemble, 43% avaient une marge positive ($n = 32$), 81% étaient focales et 12% étaient étendues. La plupart des marges positives étaient à l'apex (51%).

29,3% ($n = 22$) ont développé une RBC pour un suivi moyen de 50,2 mois. 28% ($n = 21$) n'ont jamais négativé leur PSA en post-opératoire.

Parmi les patients avec une RBC, 19 (86%) ont eu une radiothérapie de sauvetage, 2 (9%) une radiothérapie adjuvante et 1 est en watchful waiting.

41% ($n = 31$) sont encore en rémission et seulement 9 (30%) ont reçu une radiothérapie précoce.

Il n'y avait pas de corrélation entre la RBC et les marges positives ($p 0,361$), l'atteinte ganglionnaire ($p 0,4$), le volume tumoral ($p 0,95$), le stade pathologique ($p 0,68$) et le score de Gleason ($p 0,25$). Seul le PSA semble être un facteur de risque pour la RBC ($p 0,07$).

Le taux de rechute est de 23% la première année et de 53% la deuxième année.

Conclusion

Cette étude montre que la PRRA doit idéalement être associée à une radiothérapie pour les CP à haut risque. Nous n'avons pas trouvé de facteur de risque clair pour la RBC.

A noter que 41% des patients n'ont jamais présenté de récurrence oncologique. Au total 72% de tous les patients sont en rémission. Le PSA reste un facteur de risque prédictive qui, associé aux facteurs de risque préopératoires, peut aider à orienter la stratégie thérapeutique après la chirurgie.

P12: Gefässkomplikationen nach Strahlentherapie im Becken: Ein Fallbericht

K Waldvogel
Liestal (CH)

Die Radiotherapie hat sich im Laufe der letzten Jahrzehnte zu einem wichtigen Bestandteil in der Therapie verschiedener Tumore entwickelt. Doch mit Verbesserung des Überlebens ging auch eine Zunahme der Häufigkeit von durch die Bestrahlung hervorgerufenen Spätkomplikationen einher. Die Komplikationen müssen hierbei nicht immer das ursprünglich bestrahlte Organ betreffen. An benachbarten Gefässen beispielsweise kann die Strahlentherapie zu Schäden der Basalmembran führen, mit Neovaskularisation und okklusiv-thrombotischen beziehungsweise hämorrhagischen Komplikationen. Der folgende Fall zeigt am Beispiel eines 50-jährigen Mannes die potenziell sehr schwerwiegenden Folgen auf das Gefässbett im Becken Jahre nach Radiotherapie.

P13: Focal HIFU: Higher recurrence rate in treatment of anterior compared to posterior lesions in prostate cancer

PM Huber, N Afzal, M Arya, S Boxler, S Charman, T Dudderidge, M Emberton, S Guillaumier, RJ Hindley, L Leemann, H Lewi, N McCartan, CM Moore, R Nigam, C Ogden, R Persad, K Shah, GN Thalmann, J Viridi, M Winkler, HU Ahmed

Bern (CH), Dorset (UK), London (UK), Southampton (UK), Basingstoke (UK), Zürich (CH), Chelmsford (UK), Surrey (UK), Bristol (UK), Harlow (UK)

Objective

To compare cancer control in anterior compared to posterior prostate cancer lesions treated with focal high-intensity focused ultrasound (HIFU).

Materials and methods

Retrospective analysis of our HIFU (Sonablate 500) registry (July 2007 to December 2016) identified 415 men, of which 73 had an anterior, and 342 a posterior prostate tumour location. In-field treatment failure was considered and defined as any secondary treatment (ADT/chemotherapy, cryotherapy, EBRT, RRP, or re-HIFU), metastasis from prostate cancer without further treatment, tumour recurrence with biopsy-proven Gleason score ≥ 7 without further treatment, or death from prostate cancer, respectively. Statistics by R-language environment.

Results

Median age (IQR) in anterior compared to posterior tumour location groups was 64 (60-68) vs. 66 (61-71) years, PSA level prior to treatment was 7.66 (5.6-10.77) vs. 7.11 (5.31-10.22) ng/ml and mean (range) prostate volume according to mpMRI 37.7 (13-94) vs. 40.5 (12-147) ml. Biopsies revealed a Gleason 3+3=6 in 22 (30%) vs. 41 (12%), 3+4=7 in 44 (60%) vs. 234 (69%), 4+3=7 in 7 (10%) vs. 59 (17%), and 4+4=8 in 0 (0%) vs. 5 (1%).

Mean (range) time to recurrence in anterior vs. posterior tumours was 32.8 (8-70) compared to 29.5 (8-80) months. In-field recurrence occurred in 31.0% (23/73) in patients with anterior tumours, and in 21.1% (71/342) in posterior tumours ($p=0.046$).

Conclusion

Success rate of treating an anterior prostate cancer lesion with focal HIFU is significantly lower compared to posterior tumours.

P14: Prostatic Artery Embolization in the treatment of localized prostate cancer: A bicentric prospective proof-of-concept study of 12 patients

L Mordasini, L Hechelhammer, P Diener, J Diebold, A Mattei, DS Engeler, G Müllhaupt, S Kim, H Schmid, D Abt
Luzern (CH), St. Gallen (CH)

Purpose

To provide initial data on tumoricidal efficacy of embolization on prostate cancer via histopathological examination of post-embolization prostatectomy specimens.

Materials and Methods

In this bicentric prospective trial 12 men with localized prostate cancer underwent radical prostatectomy 6 weeks after prostatic artery embolization (PAE) between 10/2016 and 05/2017. PAE was performed, using 100 µm sized Embozene™ microspheres. Response of prostate cancer tissue to PAE was assessed by tumor regression grades. Major outcome measure was complete histopathological absence of viable cancer cells including secondary foci in the prostatectomy specimens.

Results

Complete necrosis of the index lesion was found in 2 patients, partial necrosis in 5 patients. Considering secondary cancerous foci, viable cancer cells were found in all of the 12 patients. Pathological specimens were characterized by demarcated zones of necrotic tissue predominantly located in the central gland. Two patients required additional surgery to remove necrotic bladder tissue caused by PAE.

Conclusion

PAE using 100 µm sized microspheres failed to achieve complete elimination of tumor cells. Extensive tumor regression was induced in some lesions highlighting the need for further assessment of PAE as a potential treatment option for prostate cancer.

P15: Prostate-specific antigen (PSA) response in men with non-metastatic castration-resistant prostate cancer (nmCRPC) treated with enzalutamide (ENZA): results from PROSPER

CN Sternberg, K Fizazi, F Saad, P Rathenborg, N Shore, E Demirhan, K Modelska, D Phung, A Krivoshik, M Hussain

Rome (IT), Paris (FR), Montreal (CA), Herlev (DE), San Francisco (US), Northbrook (US), Chicago (US)

Background and goals

Men with nmCRPC and rapidly rising PSA are at high risk of developing metastatic mCRPC. In previous clinical trials ENZA improved overall survival (OS) and radiographic progression-free survival in men with mCRPC. The phase 3 PROSPER trial had a primary endpoint of metastasis-free survival (MFS).

Materials and methods

PROSPER is a randomized, double-blind, placebo (PBO)-controlled, multinational study (NCT02003924) in men with asymptomatic nmCRPC, PSA doubling time ≤ 10 mo and PSA ≥ 2 ng/mL at screening. All men continued androgen deprivation therapy (medical or surgical castration) and were randomized 2:1 to ENZA 160 mg or PBO. Primary endpoint was MFS. Secondary endpoints included time to first use of new antineoplastic therapy, PSA progression, PSA response, OS and safety.

Results

A total of 1401 men were enrolled. Baseline characteristics were balanced between treatment arms: median age was 74 vs 73 years; 76.6% vs 77.1% had PSA doubling time <6 mo; median serum PSA was 11.1 ng/mL vs 10.2 ng/mL for ENZA (n = 933) vs PBO (n = 468), respectively. For ENZA, 100% and 95.1% had a baseline and ≥ 1 post-baseline assessment vs 99.8 and 93.8% for PBO. Versus PBO, ENZA significantly reduced risk of MFS (hazard ratio [HR] 0.29; 95% confidence interval [CI] 0.24-0.35; $P < .0001$), time to first use of new antineoplastic therapy (HR 0.21; 95% CI 0.17-0.26; $P < .0001$) and time to PSA progression (HR 0.07; 95% CI 0.05-0.08; $P < .0001$). A significantly greater proportion had confirmed PSA responses $\geq 50\%$ decline (76.3% vs 2.4%; $P < .0001$), $\geq 90\%$ decline (55.9% vs 0.4%; $P < .0001$) and to undetectable levels below the limit of quantification (9.6% vs 0%; $P < .0001$) with ENZA vs PBO, respectively. Median duration of treatment was 18.4 mo vs 11.1 mo for ENZA vs PBO. In the first interim analysis of OS there was a trend in favour of ENZA (HR 0.80; 95% CI 0.58-1.09; $P = .1519$). Adverse events (AEs) were higher with ENZA vs PBO (any grade: 87% vs 77%; grade ≥ 3 : 31% vs 23%; serious: 24% vs 18%); 10% of men in the ENZA arm discontinued treatment due to AEs vs 8% in the PBO arm.

Conclusions

In men with nmCRPC and rapidly rising PSA, ENZA treatment resulted in a clinically meaningful and statistically significant reduction in the risk of developing mCRPC and an increase in median time to PSA progression. PSA responses were significantly greater in men treated with ENZA compared with PBO. AEs were consistent with the established safety profile of ENZA.

Posterdiskussion II – Blasenkarzinom

Discussion des posters II – Cancer de la vessie

P16: Urinary Calprotectin loses specificity as tumor marker due to sterile leukocyturia associated with bladder cancer

K Bausch, E Roth, S Heinz, L Bubendorf, HH Seifert, J Ebbing
Basel (CH)

Objective

Recently, urinary Calprotectin (UC) has been identified as a new biomarker in bladder cancer (BC). UC is a mediator protein of the innate immune system, predominantly released by monocytes and neutrophils; it remains, however, unclear how it is influenced by tumor infiltration by leukocytes. Our aim was to investigate the correlation between the level of sterile leukocyturia (SL) and the concentration of UC in BC patients with low grade (IG) or high grade (hG) BC.

Material and Methods

We performed a prospective cross-sectional study at the Urological University Clinic Basel. 52 patients with BC and 40 healthy controls were included. Definition of SL was > 5.0 leukocytes per visual field without any bacteriuria.

Results

Median (IQR) UC concentration was 203.0 (28.0 - 1022.6) ng/ml in patients with BC, and 51.0 (20.5 - 86.6) ng/ml in healthy controls ($p < 0.01$). Patients with IG BC had a median (IQR) UC concentration of 49.4 (8.6 - 264.9) ng/ml, as compared to median (IQR) UC concentration of 315 (43.9 - 1087.6) ng/ml in patients with hG BC ($p = 0.01$). The overall rate of SL in patients with BC was 60.8 %, with equal rates in patients with LG (60.0 %) and HG (62.0 %) BC ($p = 0.87$). However, the median (IQR) absolute urinary leukocyte count per visual field was significantly higher in hG BC than in IG BC (167.3 [57.1 - 386.1] vs. 39.9 [21.4 - 72.2], $p = 0.01$). Spearman correlation revealed a significant correlation between UC concentration and level of SL in patients with BC ($r = 0.3$, $p = 0.03$). Median (IQR) UC concentration was significantly higher in BC patients with SL (408.8 [42.0 - 1117.0] ng/ml) than in patients without SL (90.4 [22.7 - 215.4]; $p = 0.04$). Subgroup analysis revealed a significant difference in UC concentration regarding the presence of SL in patients with hG BC (596.8 [91.8 - 1655.5] vs. 90.4 [28.0 - 202.3] ng/ml, $p = 0.02$), but not with IG BC (49.4 [14.7 - 379.7] vs. 29.2 [7.7 - 210.0] ng/ml, $p = 0.6$).

Multiple linear regression analysis identified leukocyte count per visual field to be the only significant impact factor for UC concentration (OR 3.2, [95% CI 2.5 - 3.9], $p < 0.001$). Immunohistochemical staining is presently in process.

Conclusions

UC in BC is likely a robust result of tumor infiltration by leukocytes, with hG BC showing higher SL counts that correlate with higher UC concentrations. Therefore, UC cannot be regarded as a specific tumor marker for BC, but rather as a surrogate parameter for tumor inflammation

P17: Chemokine ratio as a potential prognostic factor in high-risk NMIBC patients

AK Schneider, MF Chevalier, S Nguyen, V Cesson, F Dartiguenave, I Lucca-Boehlen, P Jichlinski, D Nardelli-Haefliger, L Derré
Lausanne (CH)

Context and aims

Although the gold-standard treatment for non-muscle invasive bladder cancer (NMIBC) patients after transurethral resection of bladder is the Bacillus Calmette Guérin (BCG) therapy, it is limited by local/systemic side effects, poor tolerance and high recurrence rate (up to 20% after one and 55% after five years). Even though it is the most successful immunotherapy for cancer in use, there is a need for alternative or complementary immunotherapy and for the characterization of immune response generated within bladder mucosa. BCG instillation produces a strong local immune response, characterized by the infiltration of immune cells and the secretion of soluble factors into the bladder wall and the urine. In the urine of patients with NMIBC undergoing BCG therapy, our group recently discovered an immune suppressive axis involving myeloid-derived suppressor cells (MDSC). Indeed, patients with a T cells to MDSCs ratio < 1 had significantly shorter recurrence-free survival than those with a ratio > 1 . As chemokines are involved in the recruitment of immune cells into the tumor environment, they may be linked to this T/MDSC ratio and serve as biomarkers. Therefore, we measured the urinary chemokines in NMIBC patients undergoing BCG treatment, in order to define reliable markers to predict BCG response.

Methods

In a prospective analysis, the level of chemokines known for T-cell recruitment (CXCL9, CCL5, CXCL10, CXCL11, CXCL13) and chemokines known for MDSC recruitment (CCL2, CXCL5, CXCL12) were measured by a Luminex assay in the urine of 19 patients with NMIBC undergoing BCG therapy. Data were collected and compared with percentage of T cells and MDSCs determined by flow cytometry in the same urine samples.

Results

The concentration of CXCL5 correlated to the frequency of MDSCs in the urine but not with T cells during BCG therapy. Inversely, concentrations of CCL5 and CXCL9 correlated to the frequency of T cells but not with MDSCs. An immune score associating several chemokines related to T-cell or MDSC recruitment will be applied to test the correlation with the recurrence free survival.

Conclusion

Preliminary data suggest that urinary chemokine might be a good surrogate to the T/MDSC ratio. However, more patient samples will be tested in order to correlate data to clinical follow up.

P18: Immunohistochemistry for ARID1A as a urine cytology biomarker in bladder cancer

S Dugas, D Müller, C Le Magnen, HH Seifert, C Ruiz, T Vlajnic, CA Rentsch, L Bubendorf
Basel (CH)

Background

Inactivating mutations of ARID1A, a member of the chromatin remodeling genes, are found in 20% of non-muscle invasive bladder cancer (NMIBC) and may be predictive of non-response to BCG treatment [1]. Loss of ARID1A expression in urine cytology could serve as a surrogate marker for ARID1A mutation. Thus, we aimed to examine the protein expression of ARID1A in urine cytology samples and in TURB histology specimens by immunohistochemistry (IHC) and to correlate it with ARID1A mutation status.

Patients and Methods

We used archived Papanicolaou-stained cytological specimens and matched regular tissue sections of 62 patients with high-grade NMIBC. We constructed a tissue microarray (TMA) containing samples from 164 NMIBC and 100 muscle invasive bladder cancer (MIBC). ARID1A protein expression was evaluated by IHC using the D2A8U monoclonal antibody (Cell Signaling Technology). Samples of tumor specimens with known mutation of ARID1A and specimens without a mutation served as positive and negative control, respectively. Next generation sequencing (NGS) will be performed on TURB tumor specimens using a NGS assay (Oncomine Comprehensive Assay v3) containing ARID1A.

Results

Prevalence of ARID1A loss of expression determined on the TMA was 3.6 % in NMIBC (6/164) and 10 % (10/100) in MIBC ($p = 0.059$). Loss of ARID1A expression was found in 4 cytological specimens with high-grade NMIBC. Discordant IHC results of corresponding histological tumor specimens were found in 2 of these patients, which could be explained by heterogeneity of ARID1A status or by pre-analytical factors affecting epitope integrity. The NGS analysis to explore the association between ARID1A IHC and mutation status is ongoing.

Conclusion

IHC for ARID1A expression on urine specimens may serve as a good surrogate biomarker of ARID1A mutation for future clinical and scientific use. Further prospective studies are necessary to confirm this finding.

P19: The impact of smoking on genomic alterations in muscle-invasive bladder cancer

R Seiler, M Rink, A Aziz, K Hendricksen, AW Wyatt, PC Black, F Rundstedt, EA Gibb, SF Shariat, C Poyet, F Roghmann, E Xylinas

Bern (CH), Hamburg (DE), Rostock (DE), Amsterdam (NL), Vancouver (CA), Jena (DE), Wien (AT), Zürich (CH), Bochum (DE), Paris (FR)

Introduction

Smoking is the most important risk factor for developing muscle-invasive bladder cancer (MIBC). The incidence of MIBC, as with lung cancer, correlates directly to both the duration (years) of smoking and the number of cigarettes smoked per day. Carcinogenic toxins similar to cigarette smoke are administered to rodents to model the effects of smoking on the development of MIBC. Here we aimed to investigate the correlation between genomic alterations present in MIBC and the patient smoking status. Furthermore, we compared these findings with genomic alterations present in lung adenocarcinoma (LAC) and with the biological characteristics of chemically induced MIBC in rodents.

Methods

Clinical and genomic data from MIBC and LAC were downloaded from the TCGA and MSK-IMPACT (cbioportal.org). The TCGA dataset contained genomic DNA sequencing, mutation count in Signature 5*, total mutational burden, RNA sequencing, follow-up, pack years and smoking history. By using the gene expression data, molecular subtype calls were generated by our recently published genomic subtyping classifier. From the MSK-IMPACT dataset, mutational burden and smoking history were used.

Results

In the bladder TCGA, smoking history, as well as pack years, were not related to disease-free ($p=0.4$) or to overall survival ($p=0.2$). There was no association of smoking history ($p=0.8$) or pack years ($p=0.9$) to mutational burden in either the bladder TCGA or the MSK-IMPACT datasets. Mutation count in Signature 5* was higher in former or current smokers, but this did not reach significance ($p=0.051$). This was in contrast to findings in LAC. Mutational burden was higher in cases with more pack years ($p=.005$). Moreover, current and former smokers had a higher mutational burden when compared to never smokers.

Although others have reported that carcinogen-induced MIBC in rodents has almost exclusively a basal-like phenotype, a similar association between smoking history and molecular subtypes of MIBC in TCGA patients was not apparent.

Conclusions

Although smoking is recognized as a major risk factor for developing MIBC, its impact on genomic alterations in MIBC is not obvious. This is in contrast to LAC in which smokers have a higher mutational burden and enrichment of mutations in known oncogenes (e.g. TP53). Cigarette smoke contains over 4000 compounds, which may prevent a direct comparison to the rodent model that is induced by a single toxin.

P20: Young age improves recurrence-specific survival in urothelial bladder cancer patients: A retrospective cohort study

P Bohner, P Jichlnski, S La Rosa, L Derré, D Nardelli-Haefliger, I Lucca-Boehlen
Lausanne (CH)

Context and objectives

Around 1000 new cases of urothelial carcinoma of the bladder (UCB) are diagnosed in Switzerland each year. More than two third of cases are diagnosed in elderly people, while UCB is rarely found in patients younger than 50 years old. UCB is generally characterized by a high recurrence rate after the first diagnosis. However, few data are available regarding UCB prognosis among young patients. The aim of this study was to evaluate the impact of young age on UCB recurrence in a single institutional retrospective cohort.

Material and methods

Between 2008 and 2016, data from 208 UCB patients treated with trans-urethral resection of the bladder (TURB) at our institution were analyzed. Age at TURB was analyzed as a categorical variable. Patients younger than 50 years old were considered as our target population, while those >50 years as the control group. All patients underwent diagnostic cystoscopy and abdomen CT-scan as preoperative investigations. Recurrence was defined as a local recurrence confirmed at TURB or a distant recurrence assessed by an expert uro-radiologist. Univariable and multivariable analysis were used to assess the impact of young age on UCB recurrence. Two-year recurrence-free survival (RFS) was calculated using the log-rank Kaplan-Meier method with Cox regression model.

Results

Among 208 UCB patients, 28 were younger than 50 years (target population). The two groups were similar in term of tumor and patient characteristics, except for a lower tumor stage rate in the young group. Median age at the diagnosis was 38 years in the target population versus 69 years in the control group. UCB recurrence was found in 39% of young patients versus 57% of older patients. Two-year RFS rate was 55% (SE +/- 15%) and 26% (SE +/- 4%) for young patients and elderly individuals, respectively ($p = 0.01$). On univariable analysis, young age ($p = 0.02$) and tumor stage ($p = 0.04$) were associated with RFS. Both variables were also found independently associated with RFS on multivariable analysis ($p < 0.05$).

Conclusion

Being young at the time of UCB diagnosis seems to be associated with lower tumor stage at the diagnosis and longer RFS. Biological and genetic mechanisms could explain these findings. Further investigations are needed to improve our knowledge on UCB among young patients and an appropriate follow up schedule should probably be established.

P21: How to improve patient selection for neoadjuvant chemotherapy in candidates for radical cystectomy

M Moschini, S Zamboni, P Baumeister, L Mordasini, A Mattei
Luzern (CH)

Background & Objectives

Neoadjuvant chemotherapy (NAC) should be offered to radical cystectomy (RC) candidates harboring a cT2-cT4a disease and confers an overall survival benefit of 8% at 5 years. Nevertheless, this treatment is underutilized in Europe, with some series reporting less than 5% of appliance. The aim of this study is to improve patient selection for NAC before RC, defining preoperative risk groups to help urologists to individuate best candidates.

Material and methods

We evaluated 1339 patients with clinical non-metastatic BCa treated between 1990 and 2018 at three tertiary referral centers. All patients had completed data regarding demographics characteristics, last TUR (transurethral resection) before RC and RC characteristics. Adverse pathologic features (APF) were defined as pT3-pT4 or pN+ disease at RC. Univariable and multivariable logistic regression were performed to identify predictors of APF at RC. A Regression tree model was used to assess preoperative risk group classes.

Results

The median age was 70 (63-76) years, most of the patients were men (n=1,101, 82.2%). Overall, 119 (9.9%) patients had CIS at TUR, 281 (41.3%) had histological variants and 387 (48.5%) underwent complete resection. At preoperative radiological investigations 200 patients (24.1%) were found with suspicion N+. 893 (66.9%) had APF. At RC, 770 patients (57.8%) harbored a pT stage 3 or 4 and 402 (35.5%) pN+. On multivariable analyses: histological variants (yes vs.no OR = 3.05, CI:1.30-7.15, p = 0.010), multifocality (yes vs.no, OR:0.49, CI:0.27-0.90, p = 0.022), cT3 vs. T0 (OR:7.16, CI:1.74-29.47, p = 0.006), cT4 vs. T0 (OR:10.68, CI: 2.21-51.59, p = 0.003) were associated with an increased risk of APF. The cohort was stratified into 3 risk groups: low (cT2 and single disease), intermediate (cT2 and multiple disease), and high (cT3-cT4).

Conclusion

We defined 3 risk classes to preoperatively individuate patients who might benefit more from NAC before RC. Specifically, patients harboring cT3-cT4 disease at TUR are those who might benefit more from NAC. On the other hand, patients experiencing a cT2 disease with a monofocal might be those who benefit less from NAC. These results can be used to refine the selection of patients before RC.

P22: Roboterassistierte-laparoskopische Zystektomie mit intrakorporaler Harnableitung: Gesundheitsökonomische Aspekte

O Burkhardt, M Randazzo, C Padevit, H John
Winterthur (CH)

Einleitung

Die Zystektomie ist der Goldstandard zur Behandlung des muskelinvasiven sowie des high-risk nicht-muskelinvasiven Urothelkarzinomes der Harnblase. In den letzten Jahren werden Zystektomien zunehmend roboterassistiert durchgeführt. Mit steigender Erfahrung im Bereich der roboterassistierten Chirurgie etablierte sich in den letzten Jahren die Technik der intrakorporalen [Rekonstruktion]. Seit 2014 werden an unserer Klinik neben der Zystektomie auch die Rekonstruktion vollständig intrakorporal durchgeführt.

Methoden

In einer retrospektiven Analyse wurden die wichtigsten Operationschritte erfasst und aufgelistet. Die Konklusionen nach 60 Eingriffen, welche zu einem guten onkologischen und funktionellen Resultat sowie zu einer schnellen Genesung führen, sollen folgend aufgezeigt werden.

Resultate

Insgesamt wurden 44 intrakorporale Ileum Conduit und 16 intrakorporale orthotope Ersatzblasen rekonstruiert. Alle 60 Harnableitungen konnten laparoskopisch roboterassistiert durchgeführt werden.

Folgende Schritte sollten besonders sorgfältig durchgeführt werden:

Extendierte Beckenlymphadenektomie bis zur Aortenbifurkation. Belassen der Harnblase bis zuletzt an den Plicae umbilicales, um eine ausreichende Präparation des Rektums zu gewährleisten. Durchführung eines intraoperativen Schnellschnitts des Urethrastumpfes (Neoblase) und der Ureterenstümpfe, Ausreichend lange Seit-zu-Seit-Anastomose des Dünndarms (60mm + 45mm Stapler), um eine ausreichende Anastomosenbreite der Ileo-Ileostomie nach Ausschaltung von 50cm Dünndarm zu gewährleisten. Zudem Reduktion der Trendelenburglagerung während Rekonstruktion Harnableitung. Ausreichende Mobilisation der Dünndarmschlinge für eine spannungsfreie ileourethrale Anastomose bei der orthotopen Ersatzblase. Anlegen einer Wallace-Platte, wobei das Urothel nicht mit dem Nadelhalter gefasst werden darf. Konsequentes Vermeiden von Serosaverletzungen am Darm durch Verwendung der Bowel-Grasper. Die Systematisierung jedes intraoperativen Schrittes führte zu einer deutlichen Reduktion der Operationszeit, der stationären Aufenthaltsdauer, Komplikationsrate und schlussendlich auch der Fallkosten.

Schlussfolgerungen

Intraoperative laparoskopisch roboterassistierte Rekonstruktionen des Harntraktes mit Ileum Conduit oder orthotoper Ersatzblase sind technisch anspruchsvoll. Entsprechend sollten die die Operationsschritte in jeder Institution standardisiert werden, um die Operationszeiten sowie Komplikationen zu senken.

P23: Transition from open radical cystectomy (ORC) to robotassisted laparoscopic radical cystectomy (RARC) with total intracorporeal urinary diversion (ICUD) – first experience and results

L Zahiti, HH Seifert, A Hosseini, C Wetterauer, K Bausch, J Ebbing
Basel (CH), Stockholm (SE)

Introduction

RARC has evolved significantly during the last 10 years. Recent data from high-volume centers and registries are reporting promising results compared to the current gold standard ORC. Worldwide the majority of RARC cases are completed with an extracorporeal urinary diversion (ECUD) while intracorporeal UD (ICUD) remains a demanding but promising procedure. Our objective is to present our first experiences and results in RARC with ICUD.

Methods

After a preparation period including training of scrub nurses and establishing the EAU Robotic Urology Section Scientific Working Group Consensus View for enhanced recovery in RARC a transition from ORC to RARC was established at our department in April 2017. Under supervision of a proctor from Karolinska Institute 14 patients (11 men, 3 women) were operated between May 2017 and April 2018. The surgical team consisted of one console surgeon and one table side assistant who was previously trained in a fellowship program in RARC at Karolinska Institute during a 12 months period. The Karolinska technique including patient positioning, port placement and all single steps of RARC and ICUD as published in the literature were adopted. Indication for RARC was bladder cancer in 12 patients, chronic urinary tract infection and neurogenic bladder dysfunction in one patient, respectively. Data is shown in median with interquartile range.

Results

ICUD was performed by means of ileal conduit in 10 patients (8 males, 2 females) and ileal orthotopic neobladder in two male patients. The two patients not receiving urinary diversion were dialysis-dependent preoperatively. Postoperative T-stage was pT0 in 1 (7.1%), pT1 in 3 (21.4%), pT2a in 1 (7.1%), pT2b in 1 (7.1%), pT3b in 5 (37.7%), pTis in 4 (28.6%) patients. Lymph node (LN) dissection was performed in 8/12 BC patients (66.7%) with one being pN1. Number of LN dissected was 12.5 (8.5 – 18.8). Operative time was 278 (264 - 359) min. Estimated blood loss was 300 (200 - 400) ml. Perioperative transfusion rate was 7.1%. Positive surgical margin rate and conversion rate to open surgery was 0%. Hospitalization time was 13.5 (6.5 – 17.5) days. Clavien I, II, III, IV and V complications within 30 days were 0%, 21.4%, 14.2%, 0%, and 7.1%, respectively. 30-day readmission rate was 21.4%.

Conclusion

The direct transition from ORC to RARC with ICUD is challenging, but can be managed by a competent robotic team in a safe way when supported by supervision of an experienced mentor

P24: Cystectomie pour tumeur par laparoscopie avec assistance du Robot Da Vinci: l'expérience lausannoise

J Schwartz, L Bastien, J Parra
Lausanne (CH)

Le but de notre présentation est de montrer la faisabilité de la cystectomie avec dérivation intracorporeale pour une petite équipe avec une bonne expérience du Robot Da Vinci, en s'aidant d'un mentor pour les premiers cas. En effet, la cystectomie pour tumeur par laparoscopie avec assistance du Robot Da Vinci est pratiquée couramment par de grands centres, mais généralement peu pratiquée même par des centres de moyennes importances. Fort d'une expérience relativement importante dans l'utilisation du Robot da Vinci (Prostatectomie , néphrectomie partielle et pyeloplastie), nous avons voulu mettre en place un programme de cystectomie Robotique avec l'aide d'un chirurgien reconnu.

Collectif

Notre collectif se compose de 10 patient opérés entre fin 2016 et avril 2018, 3 femmes et 7 hommes dont 4 néovessies et 6 dérivations selon Bricker.

Résultats

Le temps moyen opératoire est de 250 minutes (210 - 300 minutes) . Les tumeurs finales se compose comme suit: deux in situ; six T2 et deux T3.

Le séjour moyen est de 14 jours. Cependant, un patient a séjourné 30 jours, en raison d'une complication majeure.

Ce même patient a présenté une complication majeure, suite à un choc septique avec MOF (multiple organ failure) consécutif à la migration d'une sonde urétérale. Cependant, celui-ci a récupéré sa fonction rénale et est totalement continent.

Nous n'avons noté aucunes autres complications majeures.

Tous les patients avec néovessie sont actuellement continent. Chaque néovessie a été effectuée selon la technique de la pitié Salpêtrière de Paris.

Nous avons nécessité l'aide du mentor pour les quatre premiers cas (deux néovessies et deux brickers).

Conclusions

La cystectomie par assistance du robot da vinci reste tout à fait accessible, même pour de petites équipes.Cependant elle nécessite une très bonne expérience dans le robot au préalable et une planification rigoureuse avec aide d'un mentor.

P25: Laparoscopic robot assisted radical cystectomy and urinary derivation: what to come?

N Peixoto, O Windisch, F Schoofs, G Wirth, C Iselin
Genève (CH)

Known for its significant morbidity, radical cystectomy must improve minimally invasively. Rapidly but sporadically initiated at the beginning of the robotic era 15 years ago, laparoscopic cystectomy-urinary diversion has slowly, but steadily, progressed technically. It is actually optimally standardized to be entirely performed intra-corporeally.

In our center, twelve interventions were done by one single experienced surgeon, in robotic surgery. Concerning the urinary diversion, our aim was to perform a Bricker derivation in four patients (cutaneous uretero-ileostomy) and an orthotopic neobladder reconstruction in the other seven patients.

Three out of four Bricker derivations were fully performed in a laparoscopic approach with an event free postoperative evolution. The fourth was early converted in laparotomy.

Concerning the orthotopic neobladder group, three out of the seven interventions were completed in a full laparoscopic robot-assisted approach. In those whom a laparotomy was performed, one had a orthotopic neobladder derivation nevertheless, and in the other three a Bricker urinary derivation was performed.

The main reasons pushing to changing the approach were the loco-regional oncological status found intra-operatively as well as the anatomy of the patients, making a full laparoscopic surgery technically challenging and potentially hazard for those patients.

In those patients where a fully robot assisted laparoscopic surgery was performed the mean surgery time was 8h 17min. Early postoperative period was eventless in seven patients with a mean hospitalisation time, for these, of 7,8 days. Main complications were mild postoperative anaemia at reflex intestinal ileus.

In conclusion, five surgeries were converted to a laparotomy approach due to technical reasons. Four of those were orthotopic neobladder derivations, which is a more complex and technically challenging urinary derivation. Main complications were type 1 complications, after the Clavien-Dindo classification.

Its technical difficulty remain high, robotic cystectomy should remain in expert hands with a significant recruitment to remain performant.

Freie Mitteilungen I - Harnröhre/Äusseres Genitale/Unterer Harntrakt Communications libres I - Urètre/organes génitaux/voie urinaire basse

M01: Dysregulation of β 3-adrenergic receptor and phospholamban expression in outlet obstruction-induced detrusor overactivity

MP Schneider, FC Burkhard, AH Gheinani, K Monastyrskaya-Stäuber
Bern (CH)

Background

Men with benign prostatic hyperplasia (BPH) and benign prostatic obstruction (BPO) often present with lower urinary tract symptoms (LUTS) including overactive bladder (OAB). OAB is often associated with detrusor overactivity (DO). Although the symptomatic diagnosis of OAB does not always correlate with DO, DO is an objective, measurable characteristic of bladder dysfunction. Previously, using next generation sequencing (NGS) we determined mRNA and miRNA expression profiles in biopsies of BPO patients. Here we sought to investigate the specific regulation of beta3-adrenergic receptor and other components of detrusor contractile apparatus, including phospholamban in a larger patients' cohort and in bladder cell-based models.

Materials and methods

Bladder dome biopsies of controls (n=10) and BPO patients with DO (n=22) were collected and total RNA isolated. Primary smooth muscle (SMC) and urothelial (UE) cells were cultured for several passages. UE cells were differentiated with serum and Ca²⁺. Regulation of selected genes was studied by qRT-PCR.

Results

Our previous NGS data (n=6 subjects per group) revealed significant up-regulation of phospholamban (PLN), and down-regulation of ADRA2A and ADRB3, encoding alpha 2A and beta 3 adrenoceptors. Here we confirm these findings by RT-qPCR in a larger patients' group. We investigated the expression of ADRB3 mRNA in bladder layers. We reliably detected ADRB3 in patients' biopsies and in differentiated smooth muscle, but not in urothelium, or cultures of SMC or UE. Importantly, in DO patients SM markers MYH11 and ACTA2 were elevated in line with increased detrusor contractility, indicating that the observed ADRB3 down-regulation was not the result of SM de-differentiation. PLN is targeted by microRNA miR-374a-5p, significantly reduced in DO patients, whereas both ADRA2A and ADRB3 are targeted by the calcium-regulated miR-212-5p, increased in DO.

Conclusions

For the first time we report here a significant down-regulation of beta 3-adrenergic receptor and up-regulation of phospholamban expression in detrusor of BPO patients with DO. PLN up-regulation and ADRB3 down-regulation in DO smooth muscle might contribute to myogenic overactivity. PLN increase in SM might lead to calcium overload, which induces miR-212-5p and might cause a down-regulation of its target ADRB3, inducing a feed-forward loop which results in bladder overactivity. These changes might contribute to OAB symptoms in these patients.

M02: Role of microRNAs, inhibited by TNF- α , in smooth muscle remodeling during outlet obstruction-induced lower urinary tract dysfunction

MP Schneider, AH Gheinani, FC Burkhard, K Monastyrskaya-Stäuber
Bern (CH)

Background and Aims

Dysregulation of microRNAs (miRNAs) contributes to molecular changes in the bladder wall during bladder outlet obstruction (BOO). Using next generation sequencing (NGS) of mRNAs and miRNAs in human patients' biopsies and cell based systems we identified and validated TNF- α as the top upstream regulator of signaling in obstructed bladders. In the patients' biopsies, the up-regulated targets of the inhibited miRNAs contributed to the majority of activated signaling pathways. Here we sought to investigate the specific contribution of TNF- α -induced and -inhibited miRNAs to aberrant signaling in the smooth muscle cells (SMC), leading to cell proliferation and bladder fibrosis.

Materials and methods

SMC cells were treated with TNF- α and RNA isolated. Transcriptome analysis performed by NGS, NanoString nCounter miRNA assays were used to profile miRNAs. miRNAs and anti-miRs were expressed in SMCs using lentiviral vectors. NF κ B-luciferase assays were performed to determine the effect of miRNAs on TNF- α signaling

Results

Compensatory overexpression of SM-specific, TNF- α -inhibited miR-199a-5p significantly reduced NF κ B-driven luciferase gene expression via down-regulation of its direct targets IKKB, MAP3K5, NF κ B1 and PIK3CD. siRNA-mediated knockdown of IKKB or MAP3K5 mimicked the effect of miR-199a-5p. Transcriptome analysis of TNF-treated cells showed that 629 targets of 15 down-regulated miRs were up-regulated, whereas only 352 targets of 13 elevated miRs were decreased, indicating the higher impact of down-regulated miRNAs. 269 elevated mRNA targets of down-regulated miRNAs were implicated in regulation of 80% TNF-induced pathways. Top pathway elements were targeted specifically by miR-199a-5p, miR-424-5p and miR-149-5p. These miRNAs are reduced in BOO patients' biopsies, making them candidates for therapeutic intervention.

Conclusions

Compensatory up-regulation of miR-199a-5p and other miRNAs, inhibited by TNF- α might have a beneficial effect by reducing the proliferative and fibrotic changes in BOO bladders. The importance of the targets of down-regulated miRNAs for signaling might mean that the therapeutic efforts should concentrate on finding the pharmacological ways to enhance their expression to counter-balance fibrotic bladder remodeling.

M03: Hemorrhagic cystitis after radiotherapy and hyperbaric oxygenotherapy

M Mengin, M AKKAWI, S Mc Adam-Gampert, C Iselin
Genève (CH)

Introduction

Hemorrhagic cystitis after radiotherapy (HCAR) affects 5 to 10% of patients after pelvic irradiation. Most complications appear 5 to 10 years after radiotherapy and generating iterative hospitalizations. Different treatments can be suggested, depend severity of symptoms : for example, simple hyperdiuresis, urinary probe, endoscopic coagulation, hyluronic acid instillation, hyperbaric oxygenotherapy (HOT) or cystectomy. HOT increases tissue oxygen supply and stimulates angiogenesis. The first description of this treatment in HCAR was in 1985. The last consensus conference of hyperbaric medicine suggests a strong recommendation for the management of cystitis after radiotherapy by HOT.

Materials and Methods

We carried out a retrospective analysis of the patients treated in the urology department of the Geneva University Hospitals for HCAR in a context of previous pelvic irradiation for a prostatic tumor. HOT consisted of 2 sessions per day of 90min for 4 weeks.

Results

There were 53 patients from 2011 to 2017 who were receiving HOT with a median age of 68 years. The median time from the end of radiotherapy to the onset of symptoms (hematuria) was 51 months (21 to 184 months). 8(12%) patients received at least one blood transfusion. The success rate of HOT (one session then no treatment) was 60% (32/53). 17 patients (32%) required endoscopic coagulation; 3 patients (5%), a cystectomy.

Conclusion

HCAR is common in the population of patients who have undergone pelvic radiotherapy. HOT is a non-invasive and well-tolerated treatment modality with a satisfactory success rate for this serious pathology that may require cystectomy with urinary diversion.

M04: Prostatic Artery Embolization versus TURP zur Behandlung der benignen Prostatahyperplasie: Eine prospektiv-randomisierte Studie

L Mordasini, L Hechelhammer, P Diener, J Diebold, A Mattei, DS Engeler, G Müllhaupt, S Kim, H Schmid,
D Abt
Luzern (CH), St. Gallen (CH)

Purpose

To provide initial data on tumoricidal efficacy of embolization on prostate cancer via histopathological examination of post-embolization prostatectomy specimens.

Materials and Methods

In this bicentric prospective trial 12 men with localized prostate cancer underwent radical prostatectomy 6 weeks after prostatic artery embolization (PAE) between 10/2016 and 05/2017. PAE was performed, using 100 µm sized Embozene™ microspheres. Response of prostate cancer tissue to PAE was assessed by tumor regression grades. Major outcome measure was complete histopathological absence of viable cancer cells including secondary foci in the prostatectomy specimens.

Results

Complete necrosis of the index lesion was found in 2 patients, partial necrosis in 5 patients. Considering secondary cancerous foci, viable cancer cells were found in all of the 12 patients. Pathological specimens were characterized by demarcated zones of necrotic tissue predominantly located in the central gland. Two patients required additional surgery to remove necrotic bladder tissue caused by PAE.

Conclusion

PAE using 100 µm sized microspheres failed to achieve complete elimination of tumor cells. Extensive tumor regression was induced in some lesions highlighting the need for further assessment of PAE as a potential treatment option for prostate cancer.

M05: Photoselective vaporization of the prostate: study outcomes as function of conflicts of interest and industrial sponsorship

C Pazhepurackel, MS Wettstein, AS Neumann, DT Woon, JO Herrera-Caceres, C Poyet, T Sulser, GS Kulkarni, T Hermanns
Zürich (CH), Toronto (CA)

Introduction

Photoselective vaporization of the prostate (PVP) is an accepted treatment modality for lower urinary tract symptoms secondary to prostate enlargement. Conflicts of Interest (COIs) and industrial sponsorship (IS) might have an impact on the reporting of outcomes of studies assessing efficacy, safety or cost parameters of PVP. The aim of the current investigation was to evaluate outcomes of studies on PVP as a function of COIs and IS.

Methods

MEDLINE and EMBASE were systematically searched between 01/1990 and 08/2017. Two reviewers screened all abstracts and full-text articles independently. Comparative studies (randomized controlled trials [RCTs] and non-randomized comparative studies [NRCs]), in which PVP was one treatment modality, were considered eligible. Favourability of the study outcomes was classified on a binary scale by two independent board-certified urologists (PVP outcomes equal/superior to control group versus PVP outcomes inferior to control group). Identified studies were further evaluated for the presence/absence of a COI and sponsorship statement. In addition, the type of sponsorship was identified (industrial [IS] versus non-industrial). Descriptive statistics were used for data analysis.

Results

After full-text screening of 286 articles, 65 studies qualified for inclusion. The outcomes of 56 (86%) studies were rated as “PVP outcomes equal/superior to control group” while the outcomes of 9 (14%) studies were rated as “PVP outcomes inferior to control group”. A majority of all identified studies mentioned the absence/presence of potential COIs (78%). In contrast, a sponsorship statement was only found in 29% of all studies. The group of studies considering PVP equal or superior to the control arm had a higher percentage of COIs (39% vs. 22%) and IS (7% vs. 0%) compared to the group of studies considering PVP inferior to the control procedure.

Conclusion

A majority of all identified RCTs and NRCs on PVP mention the absence or presence of potential COIs. However, a sponsorship statement was identifiable in only about one third of all studies. COIs and IS were more frequent in studies reporting favourable outcomes of PVP.

M06: Mid-term results of robotic YV-plasty for recurrent bladder neck stenosis

N Abo Youssef, J Brachlow, IS Keller, C Padevit, H John
Zürich (CH), Winterthur (CH)

Introduction

Bladder neck stenosis (BNS) in the adult male patient occurs mainly following transurethral prostate surgery. Endoscopic incision or resection is the preferred and accepted initial treatment. However, few long-term results on the management of complex refractory BNS have been published. We present a case series of patients with refractory BNS treated with robot-assisted YV-plasty (RAYV) of the bladder neck.

Methods

Between 03/2016 and 02/2018, 14 consecutive male patients underwent RAYV (7 extraperitoneal, 7 transperitoneal) in our department. All 14 cases of BNS emerged after transurethral resection of the prostate and unsuccessful endoscopic incision. If suitable, we prefer a extraperitoneal access. First, the perivesical space is cleaned. The bladder neck is located and the ventral part of the prostate is exposed. An anterior longitudinal incision with hot and cold scissors is performed starting from the bladder neck over the ventral vesico-prostatic junction down through the stenotic area to the external sphincter. The incision is enlarged to an inverted Y-shaped opening. The tip of the inverted V-flap is brought to the base of the inverted Y and closed with a running 3-0 barbed suture. A wide bladder neck can be fashioned. Primary outcomes were intra- and postoperative complications within a 1 month follow-up period. Secondary outcomes were operative time (skin-skin), loss of blood, length of hospital stay, and time till catheter removal.

Results

The 14 patients had a median age of 67 (Range 52-81) years. The total median operation time (skin-skin) was 130 (69-174) minutes with a blood loss of less than 100 ml. There were no intraoperative and only minor postoperative complications. The transurethral indwelling catheter was removed after median 6 (4-25) days. The hospitalization period was median 6 (3-8) days, as patients prefer to leave the hospital without an indwelling catheter. None of these 14 patients presented with a recurrent BNS within a median follow-up of 7 (3-27) months.

Conclusion

Robotic YV-plasty is a promising minimal invasive approach for recurrent bladder neck stenosis transposing vital tissue into the stenotic bladder neck. Still, long-term results must confirm the efficacy in the future.

M07: Characterization of Early Voiding Trial Failure After OneStage Bulbar Ventral Onlay Buccal Mucosal Graft Urethroplasty and the Impact on Stricture Recurrence-Free Survival

V Zumstein, MW Vetterlein, C Loewe, CM Rosenbaum, O Engel, R Dahlem, M Fisch, LA Kluth
Hamburg (DE, Frankfurt (CH))

Objectives

Since evidence is scarce on the necessity and prognostic value of an early postoperative voiding trial after one-stage buccal mucosal graft urethroplasty (BMGU), we aimed to characterize voiding trial failure and determine its impact on outcomes after BMGU.

Materials and Methods

We performed an observational, monocentric study of men undergoing BMGU for bulbar urethral stricture between 01/2009 and 12/2016. Patients were stratified by voiding trial success versus failure (extravasation, radiographic/functional obstruction) 21 days post-BMGU. Endpoints were voiding trial failure and recurrence-free survival. Regression models were created to determine risk factors of voiding trial failure and to evaluate the impact of voiding trial failure on recurrence.

Results

Of 513 men, 432 (84.2%) and 81 (15.8%) succeeded and failed at voiding trial, respectively. Of the latter, 54 (66.7%) showed evidence of extravasation, and 27 (32.3%) failed radiographically or functionally (immediate recurrence, insufficient uroflowmetry/postvoid residual volume). In multivariable logistic regression analyses, no preoperative predictor of voiding trial failure was found (all $P > 0.05$). At a median follow-up of 32 months, both Kaplan-Meier analyses (log-rank test: $P = 0.027$) and multivariable Cox regression analyses (hazard ratio (HR) = 1.83; $P = 0.030$) revealed an association of voiding trial failure and stricture recurrence-free survival. When further stratifying voiding trial failure, radiographic or functional obstruction (HR = 3.06; $P = 0.005$) but not extravasation (HR = 1.53; $P = 0.2$) was a risk factor of recurrence. Limitations include the retrospective assessment of investigated endpoints.

Conclusions

Radiographic or functional obstruction at an early voiding trial post-BMGU is a strong predictor of stricture recurrence. Identification of intraoperative complexity factors predicting initial voiding trial failure might be a key to identify those individuals who recur early.

M08: The Impact of Surgical Sequence on Stricture Recurrence After Anterior One-Stage Buccal Mucosal Graft Urethroplasty: Comparative Effectiveness of Initial, Repeat, and Secondary Procedures

V Zumstein, MW Vetterlein, J Stahlberg, O Engel, R Dahlem, M Fisch, CM Rosenbaum, LA Kluth
Hamburg (DE), Frankfurt (DE)

Objectives

Since there is a paucity of data regarding the impact of surgical sequence on treatment success after buccal mucosal graft urethroplasty (BMGU), we aimed to compare the results of initial anterior one-stage BMGU to repeat cases (prior one-stage BMGU) and secondary cases (prior urethroplasty of different technique).

Materials and Methods

We performed a retrospective digital chart review and identified 1039 patients undergoing one-stage BMGU at our institution between 01/2009 and 12/2016. Exclusion criteria were a history of hypospadias, lichen sclerosus, radiation therapy, gender reassignment surgery, and posterior or meatal/glandular strictures. Firstly, patients were stratified according to initial, repeat, and secondary cases and clinical and surgical characteristics were compared across the groups. Secondly, we plotted univariable Kaplan-Meier curves to compare stricture recurrence-free survival between the treatment groups. Thirdly, bootstrap-corrected Cox regression analyses were performed to evaluate independent risk factors of stricture recurrence and to delineate the impact of the urethroplasty sequence on our endpoint after risk adjustment.

Results

Of 534 men with a median follow-up of 33 months (interquartile range: 17-52), 436 (81.6%), 64 (12.0%), and 34 (6.4%) underwent initial, repeat, and secondary BMGU, respectively. Patient characteristics were comparable (all $P \geq 0.2$). Patients with reoperative BMGU had more previous endoscopic interventions and were more often operated by high-volume surgeons (both $P \leq 0.021$). Operative time, graft length, stricture location, and surgical techniques were comparable (all $P \geq 0.1$). Success rates in initial, repeat, and secondary BMGU were 87.4%, 87.5%, and 70.6%, respectively. In survival analyses, patients undergoing secondary BMGU fared worse than those undergoing repeat or initial BMGU ($P = 0.010$). Similarly, secondary BMGU was an independent risk factor of recurrence (hazard ratio = 2.42; 95% confidence interval = 1.03-5.68; $P = 0.043$).

Conclusions

We showed excellent results for repeat anterior one-stage BMGU, comparable to patients without a history of prior urethroplasty. Patients undergoing secondary BMGU with a history of prior urethroplasty of different technique are at higher risk of recurrence. However, when performed in a specialized center, success rates are still relatively high.

M09: Long-term outcome after urethral rupture: a comparison of different treatment modalities

P Bosshard, M Pärli, MA Furrer, GN Thalmann, B Roth
Bern (CH)

Purpose

Urethral trauma with complete or incomplete urethral rupture is a severe urologic disorder usually accompanied by an underlying pelvic trauma. Data about the different treatment modalities (primary realignment, primary open reconstruction, suprapubic drainage with secondary open reconstruction) and their functional outcome are scarce. The aim of the present study was to evaluate the long term functional outcomes of the different treatment modalities after urethral trauma (non-catheter associated).

Material and Methods

We retrospectively evaluated 114 patients (111 men, 3 women; median age at trauma: 40y (range:6-82) who had experienced a previous urethral rupture. Three patients were excluded due to pretraumatic urethral interventions (n=1) or previous pelvic radiotherapy (n=2). The rate of posttraumatic strictures was evaluated by a chart review and by additional phone calls. The IIEF-5 questionnaire for men and the FSFI for women were used to analyze sexual function, and the ICIQ questionnaire to analyze incontinence.

Results

70/111 (63%) patients were initially treated with a realignment (endoscopic or open; group A), 22/111 (20%) with primary open reconstruction (anastomosis; group B), and 19/111 (17%) with suprapubic drainage and secondary open reconstruction if necessary (group C). Posttraumatic stricture rates were 60%, 40% and 79% in groups A, B and C, respectively. Stricture free survival did not significantly differ between groups A and B ($p=0.5$), but between group A and C ($p < 0,001$) and group B and C ($p=0.01$). Posttraumatic erectile function did not differ between the groups (median IIEF scores: 16, 16.5 and 15 in groups A, B and C, respectively). Continence remained better after primary open reconstruction as compared to suprapubic drainage ($p=0.04$); there was no difference in ICIQ score between patients after primary realignment and open reconstruction ($p=0.2$). Median ICIQ scores were 0, 0 and 3 for group A, B and C, respectively.

Conclusions

Primary realignment and primary reconstruction after urethral rupture showed similar functional results. Both treatment modalities were superior to suprapubic drainage alone. Due to its minimally invasive nature, primary realignment - if feasible - seems therefore to be the preferred treatment modality.

Posterdiskussion III – Niere

Discussion des posters III - Rein

P26: Standardizing Robotic Reconstructive Procedures: A Consensus Work from the ERUS reconstructive scientific working group

L Lengauer, M Randazzo, C Rochat, A Ploumidis, D Kröpfl, J Rassweiler, NM Buff, PN Wiklund, A Mottrie, H John
Hettingen (CH), Winterthur (CH), Genf (CH), Athen (GR), Essen (DE), Heilbronn (DE), Milan (IT), Stockholm (SE), Aalst (BE)

Background & Aims

There is currently no international consensus for robotic reconstructive procedures in the field of urology. To dress this void, the scientific group of the robotic section (ERUS) of the EAU compiled exploratory questions for the diagnostic, technical follow-up management for the following six robotic reconstructive procedures: Pyeloplasty, ureteral reimplantation, vesicovaginal Fistula (VVF), sacrocolpopexy, diverticulectomy and hernia mesh repair. The aim was to set an international standard for these robotic reconstructive procedures.

Material & Methods

From July to December 2017, a Monkey survey was sent to all participants of the ERUS annual congress. Overall, six different reconstructive surgical operations were investigated in terms of diagnostic evaluations, technical issues and follow-up management.

Results

Overall, 83 robotic surgeons from 19 different countries responded the monkey survey most of which working in a university (31.7%) or academic hospital (30.5%), respectively. An overview of the responses is given in table 1. As an example, a choice of answers of three robotic reconstructive procedures are given for pyeloplasty (A), robotic ureteral reimplantation (B) and sacrocolpopexy (C). (A): Most surgeons used transperitoneal Anderson Hynes technique (98.4%) with resection of the balloned pyelon (70.6%). The most frequently used suture material was PDS (29.4%) and Vicryl (35.3%). Time to stent removal after surgery was quoted as 2 (17.7%), 4 (47.1%) and 6 (35.3%) weeks after surgery, respectively.

(B): Stenosis in the distal and mid ureter were most frequently repaired by modified Lich-Gregoir (68.5%) and Boari flap technique (18.5%), respectively. Most surgeons would use the 4th arm (66.7%). Follow-up imaging method was ultrasound (39.3%) and CT/MRI (28.6%) after surgery, respectively. (C): Most used mesh type was a pre-shaped polypropylene mesh (46.9%) with retroperitonealization (82.4%) of the mesh at the end of surgery. More than 50% would never place a mid-urethral sling for occult stress urinary incontinence (52.9%).

Conclusions

New insights were yielded in terms of diagnostic, technical as well as follow-up strategies for robotic reconstructive operations. The current survey might help to set future consensus for robotic reconstructive procedures in the field of urology.

P27: The impact of intraoperative restrictive fluid administration on renal function following nephrectomy within an ERAS® pathway

H Haverdings, O M'Baya, I Lucca-Boehlen, P Jichlinski, Y Cerantola
Lausanne (CH)

Objectives

Enhanced Recovery After Surgery (ERAS®) is a multimodal concept combining evidence-based elements to reduce surgical stress¹. ERAS® reduces morbidity, length of stay and costs in colorectal surgery^{2,3}. Restrictive fluid optimization represents a key element of ERAS® intraoperative management; however, it has recently been challenged and concerns about an increased risk of acute kidney injury (AKI) have been raised⁴. This aspect is especially critical in patients undergoing surgery compromising kidney function. The objective of the present study was to assess the effect of an ERAS® protocol on AKI incidence after nephrectomy.

Methods

All patients undergoing radical nephrectomy (RN) or nephro-ureterectomy (RNU) in a tertiary hospital were prospectively included in an ERAS® care pathway. This prospective ERAS® cohort was compared to a historical retrospective non-ERAS® cohort. Renal function, including serum creatinine and clearance (CKD-EPI) levels pre-operative and at day 1 and 30 were calculated. In addition, we evaluated the postoperative incidence of AKI defined as a 25% clearance reduction. Primary objective was to determine if intraoperative IV fluid restriction influenced AKI incidence.

Results

From 2012-2016, 129 prospective ERAS® patients were included and compared to a retrospective non-ERAS® control cohort, included 52 patients from 2010-2012. Median intraoperative IV fluid volume administered was 2250 ml (IQR 1500-3000) in the ERAS® group versus 3000 ml (IQR 2500-3740) in the controls ($p = 0.0001$). Preoperative baseline mean creatinine clearance in the ERAS® group was 77 mL/min (controls: 74 mL/min, $p = 0.59$). Postoperative mean CKD-EPI in the ERAS® was 60 mL/min (controls: 60 mL/min, $p = 0.96$) at day 30. Overall, in the ERAS® group 64/129 (50%) patients developed AKI at day 30 (controls: 22/52 (42%)), with no significant difference in the univariate analysis ($p = 0.37$, OR 1.34, 95% CI 0.7-2.57).

Multivariate analysis identified diabetes ($p = 0.009$, OR 0.26, 95% CI 0.1-0.71), smoking ($p = 0.045$, OR 0.48, 95% CI 0.23-0.98), and RN versus RNU ($p = 0.003$, OR 3.02, 95% CI 1.46-6.23) as independent predictive factors of AKI. Neither ERAS® pathway nor restrictive fluid administration were associated with renal dysfunction at day 1 and day 30.

Conclusion

This study suggests that restrictive fluid management does not increase the risk of AKI in nephrectomy patients within an ERAS protocol in the early postoperative phase and at 1 month.

P28: Learning curve and functional outcomes of robotic partial nephrectomy

F. Obrecht, M. Randazzo, S. Wicki, C. Padevit, H. John
Oberlunkhofen (CH), Winterthur (CH), Zürich (CH)

Introduction

Robot-assisted partial nephrectomy (RAPN) for small renal masses (SRM) has become a popular treatment option in recent years worldwide. In our department RAPN was introduced in 2009. We analyzed the effect of learning curve in terms of functional and surgical outcome performed by already trained robotic surgeons with an experience in over 100 robotic-assisted prostatectomies.

Materials and Methods

Between 2009 and 2017 a total of 100 patients underwent transperitoneal RAPN. These patients were divided into the 4 groups according to the caseload (e.g. 0-20, 21-40, 41-60 and 61-onwards). The complexity of SRM was described by the R.E.N.A.L score. Complications were assessed using the Clavien classification. Trifecta defined as negative surgical margins, no high-grade perioperative complications and a warm ischemia time (WIT) < 20min were retrospectively assessed. Continuously coded variables are given by median and IQR.

Results

Total operative time (skin-skin) was 185 (156-206) min. RENAL score revealed low, intermediate and high complex SRM in 52.1%, 42.7% and 3.1%, respectively. The WIT and the estimated blood loss (EBL) were low at 16.7 (11.8-24) min and 259 (100-300) ml and the complication rate according to Clavien-Dindo ≥ 3 was at 5.2%. Creatinine values before and 6 months after surgery were comparable (74 vs 79.5 $\mu\text{mol/l}$). There was no significant difference for WIT, EBL or complications during the learning curve. However, there was a trend for more complex SRM with a rising case load.

Conclusion

WIT, EBL and complication rate were low in the current series. The fact that no significant change in these parameters was observed during the learning curve might be due to the more complex R.E.N.A.L score during follow-up and previous training of the robotic team. RAPN allows a precise surgical treatment of SRM and seems to be a safe surgical method in experienced hands.

P29: Comparison of Robot-Assisted versus open Partial Nephrectomy in a single medium size institution

T. Liernur, O. Windisch, G. Giudicelli, A. De Gorski, J. Klein, C. Iselin
Genève (CH)

Introduction

Having emerged as a potentially very useful minimally invasive tool, the da Vinci robot is constantly challenged for its costs, and hence validation in an economically reasonable health system. In this comparison, we sought for criteria in favor of its validation.

Methods

Retrospective review comparing all consecutive OPN between August 2003 and June 2012 and RAPN between December 2009 and February 2013 at our institution. Clinicopathologic variables, operative parameters, renal function and follow-up data were analyzed. We targeted a follow-up of at least 5 years; thus we didn't include patients after 2013. RAPN was performed by the same surgeon. Tumors were classified anatomopathologically, so as according to the nephrometry score of PADUA.

Results

56 patients had OPN and 45 patients had RAPN. Mean follow-up was 63.2 +- 46 months. No significant differences between the 2 cohorts with respect to patient age, sex, tumor size, mean warm ischemia time (WIT) and PADUA score. Mean operative time was significant longer in the RAPN group (279.2 +- 86.8 minutes vs. 218.3 +- 98.1 minutes in the OPN group; $p = 0.002$). In the RAPN group, mean WIT for the first 10 cases was 26.5 +- 3.63 minutes and 18 +- 6.06 minutes for the last 10 cases, showing a significant learning curve effect ($p = 0.001$). Hospital stay (4.63d vs 9.18d; $p < 0.01$) was significant shorter in the RAPN cohort. Blood loss was comparable with 27 +- 13.9 g/l for the OPN and 23.2 +- 11.7 g/l for the RAPN group ($p = 0.143$). Decrease in renal function was 14.4 +- 14.1 ml/min/1.73m² for the OPN and 16.9 +- 12.1 ml/min/1.73m² for the RAPN group ($p = 0.463$). Less positive margins were observed in the RAPN group (4.9% vs. 17.9%; $p = 0.067$). Significant less intraoperative complications in the RAPN group (13.3% vs. 33%; $p = 0.025$). Clavien-Dindo Grade 3 complication rates were 5.8% and 12.1% in the OPN and RAPN groups, respectively ($p = 0.423$). No Clavien-Dindo Grade 4 or 5 complications. Recurrence rates were 13.8% and 0% in the OPN and RAPN groups, respectively ($p = 0.072$).

Conclusions

Our results show that RAPN provides less positive margins, lower recurrence rates and equivalent functional outcomes compared to a traditional open approach. A learning curve was apparent in the RAPN group and surgery is significant longer. However we believe that patients benefit from the minimal invasive procedure which is confirmed by significant shorter hospital stay and less intraoperative complications.

P30: Evaluation, management and follow-up of renal injury in Grisons - A 10-year experience of renal trauma at a Swiss level 1 trauma center

A. S. Oberberger, J. Birzele, S. L. Barton, K. Ahmadi, C. Sommer, R. T. Strebel
Chur (CH), Aschaffenburg (DE)

Introduction

The objective was to analyse patterns of injury and management of renal trauma at a level 1 trauma center in Grisons. Furthermore, the institution's approach concerning early and late follow-up imaging was assessed.

Methods

We examined 138 patients (>16 years) with renal organ injuries who presented to our institution between January 2008 and March 2018. Data on demographics, clinical presentation, management and follow-up were recorded. The injury grading of the renal lesions was based on the Renal Injury Staging Classification (RISC, 2011) of the American Association for the Surgery of Trauma (AAST).

Results

81% of patients with renal injuries were male. The highest incidence was amongst those aged 16-25 years and an isolated renal injury was present in 28% of patients. The injury grade of 142 injured renal units was grade 1 in 25% (n = 36), 16% grade 2 (n = 23), 32% grade 3 (n = 46), 24% grade 4 (n = 34), 2% grade 5 (n = 3). The predominant injury mechanisms were winter sports (45%) and traffic accidents (20%). Conservative management was successful in all grade 1 renal injuries, and 91%, 86%, 35% and 33% of grade 2, 3, 4 and 5 injuries, respectively. Early follow-up with CT or MRI scan was performed in 23% of grades 1-3 injuries and 57% of grades 4-5 injuries. The most frequent indication for early follow-up imaging were clinical signs of complications in 43% of grades 1-3 renal injuries and routine follow-up imaging in 52% of grades 4-5 renal injuries. Data on late follow-up (1 to 9 months after injury) was available for 18% of grades 1-3 renal injuries and 35% 4-5 injuries. Persistent pathologies (e.g. scars, hematoma) assessed by MRI, CT Scan or sonography were detected in 39% of routinely re-examined grades 1-3 renal injuries and 62% of grades 4-5 injuries, respectively.

Conclusions

Most minor renal injuries (grade 1-3) were successfully managed conservatively. Early follow-up imaging was mainly performed for patients having either major lacerations (Grade 4-5) or clinical signs of complications. Routine late follow-up imaging for minor and major renal trauma still lacks evidence based recommendations and likewise wasn't performed routinely at our institution.

P31: Enhancing disease awareness for tuberous sclerosis complex (TSC) in patients with radiologic diagnosis of angiomyolipoma (AML)

J. Diethelm, C. Wetterauer, J. Ebbing, H. H. Seifert;
Basel (CH)

Methods

We retrospectively analyzed all computed tomography (CT), magnetic resonance imaging (MRI) and sonography reports (n=105694) performed in the Department of Radiology at the University Hospital Basel between 2010 and 2016. All reports provided by the radiological reporting system were screened using the search terms "AML or angiomyolipoma" in order to identify patients suffering from AML. The medical history of these patients was reviewed and patients with concurrent TSC were identified.

Results

The above mentioned search terms were conspicuous in 1.06% (1122/105694) of the radiological reports and led to the identification of 599 patients. Complete data was available for 547 patients. In 521/547 (95.2%) of the patients renal AML was present and concurrent diagnosis of TSC was confirmed in 7/547 (1.3%) patients. However, there was no significant correlation between presence of AML and concurrent TSC diagnosis overall ($r = 0.03$, $p > 0.553$). 44/547 (8.0 %) fell into the subgroup with age-range 18 to 40 years, 17/547 (3.1%) into the subgroup with age range 40 - 45 years and 486/547 (88.8%) into the age group > 45years. Prevalence of TSC in these risk groups was 13.6% (6/44), 5.9% (1/17) and 0% (0/486), respectively. In the former age group known for the highest association of AML and TSC, 5/6 (83.3%) patients presented with bilateral renal AML and 1/6 (16.7%) with unilateral renal AML. The presence of renal AML, either uni- or bilateral, correlated significantly with concurrent TSC diagnosis ($p < 0.05$). Simple binary logistic regression analysis revealed unilateral AML (OR 0.09; 95% CI 0.01 - 0.88; $p = 0.04$), as well as bilateral AML (OR 33.0; 95% CI 3.2 - 344.0; $p = 0.003$) to be a risk factor for the presence of TSC.

Conclusions

The presence of either uni- or bilateral AML in patients within the age-range of 18 to 40 years should raise suspicion for concurrent TSC as the underlying course. Therefore, it seems advisable to refer these patients and in particular the ones with bilateral renal AML, for further testing for TSC."

P32: Comparing dusting efficiency of Holmium laser lithotripsy with and without Moses technology

E. X. Keller, V. De Coninck, P. Chiron, S. Doizi, O. Traxer; Zürich, CH, Brasschaat (BE), Paris (FR)

Objectives

To compare dusting efficiency of holmium yttrium-aluminum-garnet (Ho:YAG) laser lithotripsy with and without Moses technology.

Material and Methods

All experiments were conducted in vitro using a Boston Lithovue flexible ureteroscope for direct vision and fiber control, as well as a Lumenis P120H Ho:YAG laser generator with corresponding 200 µm laser fibers. Calcium-oxalate monohydrate (COM) or uric acid (UA) stones were placed into a 4.5 ml glass container. Each stone was submitted to laser lithotripsy for 2'30'', using Lumenis' default dusting settings (0.2 J, 80 Hz, short pulse) either with or without Moses technology ("contact" mode) and a constant irrigation pressure of 40 cmH₂O. The resulting stone dust was separated from larger residual fragments based on the floating ability of stone particles. For this, dust from irrigation overflow was collected during lithotripsy, as well as during an additional irrigation phase of 2' after lithotripsy. Experiments were repeated five times for each stone composition. Differences between two groups were compared using Mann-Whitney U tests.

Results

In the Moses and non-Moses group, initial mean stone weight was 180 mg (SD 48 mg) and 188 mg (SD 52 mg) for COM samples ($p=0.80$), and 280 (SD 79) and 266 mg (SD 87) for UA samples ($p=0.95$), respectively. For COM stones, there was no significant difference in dust production between both groups (96 mg vs. 87 mg, $p=0.53$). For UA stones, a trend towards a higher dust production was found in favor of the Moses group (126 mg vs. 99 mg, $p=0.08$).

Conclusions

The dusting effect of Ho:YAG laser lithotripsy with Moses technology seems to differ between stone types. Moses may provide more efficient dusting for UA stones. Contrarily, Moses may not offer any advantage for COM stones.

P33: Spontaneous stone passage: crystalline composition predicts stone size

E. X. Keller, V. De Coninck, S. Doizi, M. Daudon, O. Traxer; Zürich, CH, Brasschaat (BE), Paris (FR)

Introduction and Objective

Sparse data regarding spontaneous stone passage establish current recommendations based on stone size. The present study evaluated whether size of spontaneously passed stones (SPS) may vary according to their major crystalline constituent.

Methods

A search for SPS was conducted in a large database that was built over the last 33 years (1985 – 2018) in Paris. Eligible major constituents were: calcium oxalate monohydrate (COM), calcium oxalate dihydrate (COD), anhydrous uric acid (UA0), dehydrated uric acid (UA2) carbapatite (CA), struvite (STR), brushite (BRU) and cystine (CYS). Cases with documented stenotic urinary tract disease or with past history of anastomotic urinary tract surgery were excluded. Stone volume was calculated by the formula of an ellipsoid: $\frac{4}{3} \pi a b c$, where a, b and c corresponded to maximal stone radii in three dimensions, respectively. Continuous data were compared using one-way ANOVA. Proportions were compared by Chi-square test. Logistic regression analysis was performed to identify predictors of maximal stone diameter ≥ 6 mm.

Results

A total of 17'983 SPS originating from 13'498 males and 4'485 females were eligible for analysis. Mean age was 46 years (range 18 – 100). Mean maximal diameter and mean volume significantly differed between major constituent groups ($p < 0.001$). Smallest mean maximal diameter and mean volume was found for COM (3.6 mm and 19 mm³, respectively), followed by COD (4.5 mm and 28 mm³), UA2 (4.6 mm and 32 mm³), CA (4.9 mm and 43 mm³), UA0 (5.5 mm and 48 mm³), BR (6.2 mm and 69 mm³), CYS (6.8 mm and 86 mm³) and largest for STR (7.9 mm and 139 mm³). Only 6% of COM stones had maximal diameter ≥ 6 mm, whereas more than one quarter of BRU, STR and CYS stones were above this cutoff (31%, 59% and 35%, respectively; $p < 0.001$). In a model adjusting for sexes and age, crystalline composition revealed as an independent predictor for maximal diameter ≥ 6 mm ($p < 0.001$).

Conclusions

Size of SPS significantly differs depending on their crystalline composition. This may impact on size-related treatment recommendations whenever stone composition can be predicted from past history.

P34: Taking advantage of single-use flexible ureteroscopes: techniques of forced tip deflection and forced torque

E. X. Keller, V. De Coninck, M. Rodriguez-Monsalve, L. Dragos, S. Doizi, O. Traxer
Zürich (CH), Brasschaat (BE), Madrid (ES), Timisoara (RO), Paris (FR)

Introduction and Objectives

Great care and adequate handling are mandatory to ensure high durability of reusable flexible ureteroscopes. Nevertheless, forced maneuvering is sometimes mandatory to warrant access to peculiar cavities of the upper urinary tract. In such cases, single-use flexible ureteroscopes (suf-URS) may cap the financial risks entailed by eventual instrument damages.

We compared forced to standard handling of an ureteroscope in an ureteral access sheath (UAS).

Material and Methods

A suf-URS (Lithovue®, Boston Scientific®, USA) was inserted into a 10/12F UAS. Deflection diameter and torque were compared between two techniques: a forced technique (FT) where maximal forces at the suf-URS handle were applied while the deflectable tip partially remained within the UAS and a standard technique (ST) where the deflectable tip was fully exposed outside of the UAS before handling. Deflection diameter was defined as the distance between the downward deflected tip and the UAS distal edge. Maximal torque was defined as the maximal applicable rotational force at the 90° deflected tip of the instrument, with the UAS axis as a fixed suspension point. All measurements were repeated in triplets. Median values were reported.

Results

Forced deflection technique allowed for a 66% reduction of the diameter at 90° deflection (FT: 1.9cm, ST: 5.6cm). At 180°, the reduction was 27% (FT: 2.4cm, ST: 3.3cm) and the deflected tip reached -1.2cm and -0.3cm below the UAS edge with FT and ST, respectively. Occupation of the working channel by a 273µm laser fiber, 1.9F nitinol basket or combination of both did not influence deflection of FT or ST. Maximal deflection angle with a 3.0F biopsy forceps was 230° and 140° with FT and ST, respectively. Maximal torque on the deflected tip was almost quadrupled (x3.9) by FT (2.68 N*cm) compared to ST (0.69 N*cm). Torque measurements with FT resulted in a coating damage of the deflectable tip at the contact point with the UAS edge.

Conclusions

Forced deflection and forced torque techniques seem to offer maneuverability advantages at the price of a possible higher risk of instrument damages. The FT study settings are reproducible and will allow for future comparisons between newly marketed suf-URS. Further studies are necessary to assess whether these techniques may facilitate access to cavities of the upper urinary tract.

P35: Premiers résultats de mini-NLPC en comparaison à la méthode de NLPC classique

D. Gomaa, F. Schoofs, G. Wirth, C. Iselin
Genève (CH)

Introduction

L'endo-urologie est en constante évolution et les progrès techniques apportent de nouvelles possibilités avec une possible miniaturisation des instruments. La néphrolithotomie percutanée standard (NLPC) et son canal de travail de CH 30 est une méthode validée mais sa morbidité n'est pas négligeable. La réduction de ce calibre permettrait peut être une réduction de ces complications. Le but de cette étude est de comparer les résultats et morbidités des NLPC classiques CH 30 à ceux de la mini-NLPC de CH 15.

Méthode

Nous avons repris les dossiers de toutes les NLPC réalisées aux Hôpitaux Universitaires de Genève entre avril 2014 et avril 2018, toutes réalisées exclusivement chez des adultes. Nous avons relevé pour chaque patient l'âge, le BMI, la taille du calcul, la localisation. Ont aussi été documentés, le temps opératoire, la chute d'hémoglobine post-opératoire, le taux de complications classées selon Clavien-Dindo et la persistance éventuelle de fragment lithiasique. Nous avons utilisé les tests de Student et de Fisher pour comparer ces deux groupes.

Résultats

36 procédures ont été réalisées, dont 6 sont des mini-NLPC (la première en décembre 2017). Les populations sont relativement comparables en termes d'âge (médiane à 51 pour les NLPC, 58 pour les mini, $p = 0.17$), de BMI (24 pour les NLPC et 26 pour les mini-NLPC, $p = 0.44$). La taille médiane du calcul est nettement plus grande dans le groupe classique (28 mm) que dans les mini-NLPC (18 mm), bien que la différence ne soit pas statistiquement significative ($p = 0.25$). Le temps opératoire est plus long pour les mini-NLPC, 196 versus 162 minutes ($p = 0.77$). Aucune différence significative n'a été relevée entre les deux techniques concernant le taux de charge lithiasique résiduel. Deux patients du groupe NLPC standard ont présenté une complication Clavien \geq III, de type hémorragique ; en revanche le groupe mini-NLPC n'en a présenté aucune.

Conclusion

Pour des cas bien choisis avec une charge lithiasique modérée, la technique mini-NLPC semble être une technique prometteuse, avec possiblement une efficacité comparable à la NLPC standard et une moindre morbidité. Une étude de plus grand volume et idéalement prospective randomisée est nécessaire pour augmenter le niveau d'évidence et confirmer ces tendances.

P36: „Immediate ESWL versus delayed secondary ESWL after emergency ureteral stenting in patients with ureteral or pyeloureteral urolithiasis: A retrospective analysis“

**J. Cornelius, D. Zumbühl, L. Mordasini, M. Moschini, A. Mattei, H. Danuser, P. Baumeister
Luzern (CH)**

Introduction

The most common cause of acute colic flank pain is an ureteral obstruction caused by ureterolithiasis. Emergency intervention is often necessary due to intractable pain. Options include insertion of an ureteral stent or emergency shockwave lithotripsy (ESWL). Definitive guidelines are lacking whether the one or the other option should be preferred in absence of signs of infection. We assessed retrospectively efficacy and safety of immediate ESWL (eESWL) without previous ureteral stenting compared to secondary ESWL after emergency ureteral stenting (sESWL).

Methods

A total of 144 eligible patients fulfilling the inclusion criteria were treated between 01/2015 and 11/2017 due to an obstructive ureterolithiasis and retrospectively included in this trial. The patients were assigned to Group eESWL (N= 75) or Group sESWL (N= 69). Patients in both groups received emergency treatment within 48 hours after presenting at the emergency department, while sESWL patients underwent shockwave lithotripsy within 6 weeks after ureteral drainage. We evaluated the stone free rate 6 weeks after ESWL, complication- and re-intervention rates.

Results

Stone-free-rate after 6 weeks was 61,3% in Group eESWL vs. 34,8% in Group sESWL ($p = 0,005$). Complications occurred in 22,2% of cases. 30,6% for patients in Group eESWL and 13% for patients in Group sESWL ($p = 0,01$). In Group eESWL 29,3% of participants needed a re-intervention while in Group sESWL 52,2% underwent a second procedure ($p = 0,004$). Subgroup analysis confirms these findings. Conclusion: eESWL seems to be an effective and safe emergency procedure compared to sESWL regarding stone-free-rate and re-intervention rate within 6 weeks. Complication rate is slightly higher after eESWL compared to sESWL. To confirm these data a prospective, randomized trial would be necessary.

P37: Biofilme auf kurz einliegenden Harnleiterschienen: Einfluss auf assoziierte Symptome und Komplikationen

P. Betschart, V. Zumstein, M. T. Buhmann, W. C. Albrich, O. Nolte, H. Schmid, Q. Ren, D. Abt
St. Gallen (CH)

Hintergrund und Ziele

Biofilme stehen unter Verdacht die mit Harnleiterschienen assoziierten Symptome und Komplikationen negativ zu beeinflussen. Vorhandene Studien hierzu zeigen jedoch methodische Schwächen. Ziel unserer Studie war es mit einer verbesserten Methode der Biofilmextraktion sowie einer validierten Methode zur Erfassung der Stent-assoziierten Morbidität diesen Zusammenhang zu re-evaluieren.

Material und Methoden

Der Einschluss von Patienten, bei denen eine Harnleiterschiene als Vorbereitung für eine sekundäre Ureterorenoskopie eingelegt wurde erfolgte prospektiv. Die Stent-assoziierte Morbidität wurde mittels Ureteral Stent Symptoms Questionnaire (USSQ) erfasst. Die Biofilmextraktion erfolgte mit einer validierten abrasions-basierten Methode (sog. "Pinhole-Methode"). Die extrahierten Biofilme wurden auf die Gesamtmasse, Bakterienbesiedelung (16 S quantitative RT-PCR; Kultivierung) sowie auf die mineralischen Bestandteile untersucht. Die Korrelationen von verschiedenen Biofilmeigenschaften und der Morbidität wurden mit Hilfe von Spearman / Pearson - Korrelationen berechnet.

Resultate

Insgesamt wurden 90 Patienten (21.7% weiblich, 78.3% männlich) eingeschlossen. Die extrahierte Biofilmmasse betrug durchschnittlich 37.0 mg (range 0 - 310.2mg) pro Stent. Die RT-PCR detektierte Bakterien auf 23 der Stents mit einer medianen Anzahl von 193'573 (32'432 - 44'602'122). Die Korrelationen zwischen den verschiedenen Biofilmeigenschaften (z.B. Biofilmmasse, Bakterienbesiedelung) und der Morbidität (u.a. Miktionsbeschwerden, Schmerzen) waren im Allgemeinen sehr schwach und nicht signifikant. Eine Pearson-Korrelation von 0,030 ($p = 0,787$) wurde für die Korrelation von Biofilmmasse und USSQ-Gesamtpunktzahl (primärer Endpunkt) gefunden. Eine signifikante Korrelation konnte nur zwischen Biofilmmasse und Hämaturie gefunden werden (Pearson $r = 0,326$; $p = 0,002$).

Schlussfolgerung

Unter Verwendung einer verbesserten Biofilmextraktionsmethode sowie einer validierten Erfassung der Morbidität konnte unsere Studie Biofilme nicht als die Hauptursache für Stent-assoziierte Morbidität bestätigen. Eine Verringerung der Biofilmbildung auf Harnleiterschienen scheint sinnvoll zu sein um das Auftreten von Hämaturie zu reduzieren und bei langfristiger Verweildauer infektiöse Komplikationen zu reduzieren und längere Wechselintervalle zu erreichen. Um die Morbidität bei der kurzen Einlagedauer zu reduzieren, müssen jedoch andere Ansätze verfolgt werden.

P38: Prädiktion positiver Urinkulturen vor sekundärer Ureterorenoskopie. Eine retrospektive Analyse von 462 Patienten

A. Weber, V. Zumstein, P. Betschart, W. C. Albrich, O. Nolte, D. S. Engeler, H. Schmid, S. Güsewell, D. Abt
St. Gallen (CH)

Hintergrund und Ziele

Vor einer sekundären Ureterorenoskopie (URS) werden zum Ausschluss von Infekten routinemässig Urinkulturen angelegt, die Resultate stehen jedoch am Tag der Operation oft noch aus. Es stellt sich die Frage, ob positive Urinkulturen mit früher verfügbaren Prädiktoren vorhergesagt werden können.

Material und Methoden

Es erfolgte eine retrospektive Analyse von Patienten bei denen zwischen 2014 und 2017 eine sekundäre URS durchgeführt wurde. Analysiert wurden Patientencharakteristika (z.B. Steinteinliegedauer, Alter, Geschlecht, ASA score, Co-Morbiditäten), automatisierte Urinsedimentanalysen (Leukozyten (Lc), pH, Nitrit), Blutanalysen (Lc, CRP) sowie Resultate der Urinkulturen. Die Daten wurden mittels deskriptiver Statistiken, logistischer Regression und ROC-Analysen untersucht, um potentielle Prädiktoren zu identifizieren.

Resultate

Von 462 Patienten fand sich bei 101 (21.9%) eine positive Urinkultur, dies deutlich häufiger bei Frauen (36.6% vs 15.1%).

Urin-Lc, Nitrit und pH - Wert, Patientenalter und -geschlecht sowie CRP-Wert waren sowohl in univariablen als auch in multivariaten Analysen mit Harnwegsinfektionen assoziiert. Obwohl Urin-Lc der stärkste Prädiktor zu sein schien, ermöglichte er keine klare Trennung von Patienten mit und ohne Infekt (AUC von 0.688, optimaler Cut-Off-Wert von 262 Lc / μ l). Mittles rekursiver Partitionierung konnten drei Risikogruppen für Harnwegsinfektionen ausgearbeitet werden: Niedriges Risiko (8%): Männlich, Urin-Lc < 1174 / μ l, Nitrit negativ, CRP \leq 13 mg/dl; Mittleres Risiko (27%): Weiblich oder CRP > 13 mg/dl; Hohes Risiko (60%): Nitrit positiv oder Urin-Lc > 1174 / μ l. Ein Modell zur optimierten Prädiktion eines Infektes unter Verwendung von 6 Parameter und 3 Interaktionen wurde entwickelt. Mit dessen Hilfe liess sich bei einem Grossteil der Patienten (71%) ein HWI mit einer Wahrscheinlichkeit (NPV) von 92% ausschliessen.

Schlussfolgerung

Harnwegsinfektionen bei Patienten mit einer einliegenden Harnleiterschleife lassen sich nur schwer mit einem einzelnen Prädiktor vorhersagen. Die Kombination relevanter Prädiktoren ermöglicht jedoch den Ausschluss von Harnwegsinfektionen mit hoher Genauigkeit bei den meisten Patienten und könnte so die klinische Entscheidungsfindung unterstützen.

P39: Impact of flexible ureterorenoscopy on biomarkers which are associated with renal parenchyma injury

L. Stächele, D. J. Stekhoven, J. Birzele, M. Mack, M. Risch, R. Strebel
Chur (CH), Zürich (CH)

Introduction & Objectives

Various studies have shown that intrarenal pressure increases during ureterorenoscopy (URS) (1). It is unknown if this pressure elevation causes damage to the renal parenchyma. Several biomarkers which indicate acute renal injury were identified in the past. Until now it has not been evaluated whether a potential renal damage during URS can be detected with help of these biomarkers. Thus, the primary objective of this preliminary study was to assess changes of the concentration of these biomarkers after URS.

Materials & Methods

Within this prospective study we included patients with nephrolithiasis requiring treatment with flexible URS. Excluded were patients with acute renal failure, patients with urinary tract infections and urosepsis.

From each patient blood samples were taken at fixed intervals before and after URS. We analyzed the following biomarkers: kidney injury molecule-1 (KIM-1), monocyte chemoattractant protein 1 (MCP-1), neutrophil gelatinase-associated lipocalin (NGAL), interleukin-18 (IL-18), calbindin, albumin, clusterin, α -glutathion-s-transferase (GST), beta-2-microglobulin (B2M), osteopontin, cystatin c, trefoil-factor-3 (TFF3).

Univariate sequential testing of differences in concentration was performed using a signed Wilcoxon rank sum test. P-values were adjusted for each biomarker using Bonferroni correction. The significance level was 0.05.

Results

We included 21 patients within the study. Median and interquartile range of age and BMI were 51 (47-63) years and 27 (24-30) kg/m². The surgery time was 61 (48-97) minutes. Cumulative stone volume was measured at 408 (217-830) mm³.

A significant increase of the biomarkers clusterin, GST, B2M, NGAL and cystatin c was observed after URS. However, most of the significantly increased markers gradually normalized during the first 14 postoperative days. The parameters surgery time, cumulative stone volume, and BMI did not significantly influence the biomarker concentrations. In case of GST and NGAL a significant positive, yet minuscule effect of age was observed.

Conclusion

With our study, we identified 5 out of 12 assessed renal injury biomarkers that showed a significant increase after URS. The increase was only temporary and all markers normalized within 14 days. Further studies are needed to determine the clinical value of these identified markers to assess the long-term impact of intrarenal pressure elevation during URS.

P40: Advanced Non-contrasted computed tomography post-processing by CT-Calculometry (CT-CM) Outperforms Established Predictors for the Outcome of Shock Wave Lithotripsy

J. Langenauer, P. Betschart, L. Hechelhammer, S. Güsewell, H. Schmid, D. Engeler, D. Abt, V. Zumstein
Basel (CH), St. Gallen (CH), Hamburg (DE)

Objectives

To evaluate the predictive value of advanced non-contrasted computed tomography (NCCT) post-processing using novel CT-Calculometry (CT-CM) parameters compared to established predictors of success of shock wave lithotripsy (SWL) for urinary calculi.

Materials and Methods

NCCT post-processing was retrospectively performed in 312 patients suffering from upper tract urinary calculi who were treated by SWL. Established predictors such as skin to stone distance (SSD), body mass index (BMI), stone diameter or mean stone attenuation values were assessed. Precise stone size and shape metrics, 3-D greyscale measurements and homogeneity parameters such as skewness and kurtosis, were analysed using CT-CM. Predictive values for SWL outcome were analysed using logistic regression and receiver operating characteristics (ROC) statistics.

Results

Overall success rate (stone disintegration and no re-intervention needed) of SWL was 59% (184 patients). CT-CM metrics mainly outperformed established predictors. According to ROC analyses stone volume and surface area performed better than established stone diameter, mean 3D attenuation value was a stronger predictor than established mean attenuation value, and parameters skewness and kurtosis performed better than recently emerged variation coefficient of stone density (VCSD). Moreover, correct prediction of SWL outcome with 80% probability was possible in a clearly higher number of patients (up to fivefold) using CT-CM derived parameters.

Conclusions

Advanced NCCT post-processing by CT-CM provides novel parameters that seem to outperform established predictors of SWL response. Implementation of these parameters into clinical routine might reduce SWL failure rates.

P41: Comparison of intrarenal pressure levels during flexible ureteroscopy, mini-percutaneous nephrolithotomy and conventional percutaneous nephrolithotomy in a kidney model

E. X. Keller, S. Doizi, V. De Coninck, M. Rodriguez-Monsalve, O. Traxer
Zürich (CH), Paris (FR), Brasschaat (BE), Madrid (ES)

Background & Aims

The impact of instrument and access sheath size on intrarenal pelvic pressure (IPP) during endourologic procedures is not clear. In this study, IPP levels were compared between flexible ureteroscopy (fURS), mini-percutaneous nephrolithotomy (mini-PCNL) and conventional PCNL.

Materials & Methods

A silicone model simulating the complete urinary tract was used for all the experiments. An automated irrigation ensured a constant instrument irrigation pressure (IIP). Retrograde insertion of a PressureWire (St-Jude Medical, 0.014" wire) placed into the renal pelvis allowed for continuous IPP monitoring. We recorded the IPP value (cmH₂O) when reaching a plateau. Measurements were repeated 5 times and mean values of IPP were reported.

All experiments were conducted at 40 and 193 cmH₂O IIP and IPP was compared for the following parameters:

- fURS (9.5F) with or without (w/o) a 10/12F ureteral access sheath (UAS) and w/o a 273 µm laser fiber;
- Mini-PCNL with a 15F, 16.5F or 21F access sheath and a 12F nephroscope w/o a 365 µm laser fiber;
- Conventional PCNL with 30-Fr access sheath and a 26F nephroscope w/o a 11.4-Fr LithoClast Master lithotripter.

Results

The IPP was systematically higher for fURS compared to mini- and conventional PCNL using both 40 and 193 cmH₂O instrument irrigation.

For fURS, maximal IPP was 79 cmH₂O with combination of no UAS, empty working channel and IIP set at 193 cmH₂O. In this setting, the addition of a 273 µm laser fiber lowered IPP down to 62 cmH₂O and the addition of a UAS further decreased IPP down to 54 cmH₂O. Lowest IPP was 26 cmH₂O with combination of a UAS, a 273 µm laser fiber and a IIP of 40 cmH₂O.

For mini-PCNL, IPP was ≤ 17 cmH₂O for all parameters, except for the combination of a 15F access sheath, an empty nephroscope working channel and a IIP of 193cmH₂O which resulted in a IPP of 40 cmH₂O.

For conventional PCNL, IPP was ≤ 8 cmH₂O for all parameters.

Conclusions

In this study, IPP was the highest for fURS in all circumstances compared to mini- and standard PCNL.

Videositzung | Séance vidéo

V01: Robot assisted buccal mucosa ureteroplasty for ureteral structure

T. Gross, D. Moran, P. Dundee
Thun (CH), Melbourne (AU)

Objective

To describe step-by-step the surgical technique of robot assisted buccal mucosa ureteroplasty for complex ureteric strictures.

Patient

45-year-old male with proximal 2cm long stricture secondary to stone treatment presented to our unit. He previously underwent 19 endoscopic procedures including multiple balloon dilatations. Thus far all endoscopic procedure failed and the patient was stent depended.

Surgical technique

The patient is first placed in a dorsal lithotomy position. Simultaneous to harvesting of the buccal mucosa graft (BMG) a guidewire is placed into the renal pelvis to allow for flexible ureterorenoscopy to locate the stricture later on. After BMG harvesting is completed, the patient is repositioned into a modified flank position, the genitals are prepared into the field to allow the sterile access for the ureterorenoscope. After placement of the ports and docking of the robot, the colon is mobilized medially following the white line of Toldt and the ureter is identified. To identify the location of the stricture the flexible ureterorenoscope is introduced over the wire. The stricture is incised dorsally using robotic Potts scissors. An omental flap is then fixed to the psoas muscle using 3-0 Vicryl. A ruler is used to measure the stricture length in situ and the BMG is table side tapered accordingly. The BMG is quilted to the omental flap to ensure blood supply using 3-0 Vicryl. The graft is then placed as an onlay to the incised ureteral segment. Graft-ureteral anastomosis is achieved with a running 4-0 Vicryl ensuring mucosa to mucosa. The ureteroplasty is then covered with another omental flap ventrally. Careful hemostasis is ensured before a drain tube is placed through the fourth arm port. After de-docking of the robot a double J stent is placed over the previously placed guidewire and correct placement confirmed with X-ray and an indwelling transurethral catheter is placed.

Post operative care/Follow-up

The indwelling transurethral catheter as well as the drain were removed on the first postoperative day and the patient was discharged on day 2. There were no complications. The double J stent was removed after 6 weeks. At the time of stent removal, a retrograde pyelogram as well as diagnostic URS was performed showing a patent and healthy graft.

Conclusion

Robot assisted buccal mucosa ureteroplasty is a feasible, minimally invasive approach for complex ureteral strictures, which otherwise would require more morbid procedures.

V02: Cystoprostatectomie Néovessie par laparoscopie avec assistance du Robot Da Vinci selon la technique de la Pitié Salpêtrière (Paris)

J. Schwartz, L. Bastien, A. Mottaz, J. Parra
Lausanne (CH), Paris (FR)

La cystoprostatectomie avec dérivation de type néovessie iléale est une technique bien standardisée par chirurgie ouverte. Cette intervention par laparoscopie avec assistance du robot Da Vinci est actuellement accessible pour des équipes bien entraînées. Nous avons fait appel au Dr Jérôme Parra urologue de la pitié Salpêtrière à Paris, pour notre formation à cette approche.

Nous vous présentons ici une vidéo, résumant la mise en place des tocards, ainsi que l'utilisation des différents instruments nécessaires à cette intervention.

Vous verrez aussi la confection de la néovessie, simplifiant grandement l'intervention, ainsi que quelques résultats post opératoires des cas effectués par notre équipe durant ces deux dernières années.

V03: Intraoperative adjustable non obstructive bulbourethral suspension: An alternative to the artificial urinary sphincter

Y. Wyss, P. Viktorin, B. Förster, M. Randazzo, H. John; Winterthur CH J. Schwartz, L. Bastien, A. Mottaz, J. Parra
Lausanne (CH), Paris (FR)

Introduction

The bulbourethral suspension with intraoperative urodynamic adjustment was proposed for patients with post-radical prostatectomy incontinence in 2004. This non-obstructive sling technique has now been routinely used for years in our department in patients with severe stress incontinence and has become an alternative to artificial urinary sphincter implantation. Here we show the standardized step by step technique in a short video.

Methods

Technique: Antegrade urethral opening pressure and functional urethral length are determined before skin incision in general anesthesia without relaxation. After a perineal vertical midline incision just below the scrotum the bulbocavernosus muscle is exposed and split. In a next step, an angled guide needle is introduced paraurethral through the perineal access and is brought up strictly retropubically, lateral to the bladder neck, to the suprapubic skin. A 4x2 cm non resorbable porcine skin implant for bulbar urethral protection is sutured onto the 2.5 cm wide partial resorbable polypropylene/ polyglycolic-acid-caprolacton sling. Through the angled perforated guide needle, the sling is drawn suprapubic with a wire. The suspension elevates the pelvic floor and improves functional urethral coaptation. A transverse suprapubic incision about 6 cm long is made down onto rectus fascia. Gentle pressure of the fist is applied onto the bladder with parallel increase of the sling tension to determine optimal antegrade urethral opening pressure. We aim an increase of the antegrade urethral pressure of 20-25 H₂O, as well as a prolonged functional urethral length. Repetitive antegrade pressure measurements confirm reliable intraoperative dynamic adjustment. Once the final pressure is accepted, the polypropylene ends are knotted.

Results

In 2004, initial series showed feasibility in 16 patients with social urinary continence rate of 69 % (J.Urology 2004). Midterm term follow-up results after 36 months in 57 patients confirmed stable 60 % social continence and 14% significant improvement (UROLOGY 2007). Pressure-flow studies excluded infravesical obstruction (UROLOGY 2012). Only 12% of the patients underwent artificial urinary sphincter implantation during long-term follow-up

Conclusion

The presented bulbourethral suspension technique is a standardized, intraoperative adjustable and non obstructive urethral sling technique with high social continence rate and patient satisfaction.

V04: Robot-assisted laparoscopic retroperitoneal lymph node dissection for postchemotherapy metastatic testicular cancer

A. Roosendaal, C. Iselin, G. Wirth
Genève (CH)

Residual lymph node metastasis after chemotherapy for non seminomatous germ cell tumors (NSGCT) requires retroperitoneal lymph node dissection (RPLND). Anatomic limits of RPLND templates are the common iliac vessels proximal to the crossing of the ureters (distal), the ureter (lateral) the renal hilum (cranial) the mid-aorta or mid-cava (right- and left-sided tumors, respectively) and includes the inter-aorto-caval space. RPLND can be curative but has to be performed radically as viable tumor cells will be found in 20% of patients, and viable teratoma in another 40%. However, surgery is challenging due to the proximity of the large vessels and ureters, potential desmoplastic tissue transformation following chemotherapy and the need to spare sympathetic ejaculatory nerves. Furthermore, patients heavily pretreated with Bleomycin can present postoperative acute respiratory distress syndromes when given large amounts of IV fluids. Major complications of RPLND are serious bleeding (2% of cases), chylous ascites and anejaculation.

Traditionally, RPLND has been performed through a large midline incision. Recently, the introduction of the Xi DaVinci system has allowed performing RPLND with several advantages, in particular by allowing to switch the orientation of the instruments from caudal to cranial-facing without undocking the robot.

The aim of this video presentation is to demonstrate patient positioning, trocar placement, anatomy of the retroperitoneal space and lymph node dissection.

V05: Robot-assisted AMS 800™- sphincter implantation around the membranous urethra in spina bifida – a new cuff position

N. Abo Youssef, J. Pannek, K. Horton, M. Randazzo, H. John
Zürich (CH), Nottwil (CH), Winterthur (CH)

Introduction

Neurogenic lower urinary tract dysfunctions have an important impact on the quality of life in patients with spina bifida. The artificial urinary sphincter AMS 800™ has been used for years as standardized long-term therapy in patients with severe stress incontinence. A robot-assisted subprostatic cuff positioning around the membranous urethra has not yet been described in the literature.

Methods

This video shows the robot-assisted AMS 800™-sphincter implantation in a 43-year-old patient with neurogenic voiding dysfunction as a result of impaired detrusor contractility due to spina bifida. After initiating a transperitoneal approach we performed the extraperitonealisation of the bladder and the incision of the endopelvic fascia in a first step. This was followed by the enlacement and measurement of the membranous urethral circumference. The cuff was positioned at the implant site with mesh towards the outside and “pillow” side towards the urethra. The pressure-regulating balloon was implanted through the 12 mm trocar and the connecting-tubing through another suprapubic trocar. After tunnelling through the trocar position and creating a dependent subdartos pouch in the scrotum, the control pump was placed into the scrotal pouch.

Results

The blood loss was irrelevant and there were no intra- or postoperative complications. The newly implanted membranous AMS 800™-sphincter was activated at about 6 weeks postoperatively. 6 months after surgery the patient showed satisfactory continence with a use of 1-2 pads per day (preoperative 5-6 pads/day).

Conclusion

The subprostatic, robot-assisted implantation of an AMS 800™ around the membranous urethra is a new minimal-invasive therapeutic option. To our knowledge, this approach is described so far for the first time in the literature.

V06: Thulium fiber laser for lithotripsy of large renal stones: initial experience

E. X. Keller, V. De Coninck, P. Chiron, S. Doizi, M. Guseynov, D. Ergakov, A. Martov, O. Traxer
Zürich (CH), Brasschaat (BE), Paris (FR), Moscow (RU)

Introduction and Objectives

The SuperPulse Thulium fiber laser may present as a valuable alternative to Holmium laser for lithotripsy. Its operating wavelength is near the water absorption peak, which results in a higher ablation efficiency at low pulse energy compared to Holmium lithotripsy. Pulsed energy can be delivered through silica fibers as small as 50 microns, which may allow for miniaturization of the endourological instruments. Also, pulse shape can easily be modulated, because the Thulium fiber laser is pumped by a diode laser, which in turn can be electronically modulated to adapt its temporal beam profile.

In this video we present the applicability of Thulium fiber laser for lithotripsy of large renal stones.

Patients and Methods

Three cases were operated by flexible ureteroscopy for large renal stones with a SuperPulse Thulium fiber laser generator at the Federal Medical-Biological Agency of Russian Federation State Institute of Continuous Medical Education, Division of Urology, Moscow, Russia. The whole procedures were recorded and key findings were reported in this video footage.

Results

The first case was a 55 years old female who presented with stones up to 12 mm in the left kidney. Low pulse energy settings (0.1 J, 250 Hz) achieved effective stone dusting. Stone dusting was complete thirty minutes after first laser activation. Pop-corning was used for clearance of residual fragments. This could be achieved without any change of laser settings. Ten minutes of pop-corning were sufficient for complete stone disintegration. The second case was a 56 years old female who presented with a single stone of 15 mm in the left renal pelvis. It took a total of 24 minutes of operative time complete lithotripsy with breakdown products adhering to the snow globe effect, which is characteristic of stone dust. The third case was a 64 years old male who presented with a single stone of 30 mm in the left renal pelvis. It took 23 minutes for stone dusting and 14 minutes for pop-corning, resulting in a total operative time of 37 minutes for complete lithotripsy.

Conclusions

From this initial experience, we conclude that the SuperPulse Thulium fiber laser is applicable for lithotripsy of large renal stones in humans. At low pulse energy, it achieves effective stone dusting. Future studies are warranted to define optimal lithotripsy settings and further detail safety profile of the SuperPulse Thulium fiber laser.

V07: Pyéoplastie laparoscopique robot-assistée avec extraction in toto d'un calcul sur maladie de la jonction

A. Ferreira Reis, C. Iselin, J. Klein
Genève (CH)

Introduction

La maladie de la jonction pyélourétérale (JPU) entraîne une stase urinaire avec comme conséquence tardive la formation de lithiases.

Le traitement consiste classiquement d'abord dans la levée d'obstruction (pyéoplastie) avec dans un deuxième temps, la prise en charge des lithiases. Nous rapportons le cas d'un traitement combiné de pyéoplastie laparoscopique avec assistance robotisée avec extraction des lithiases.

Méthodes

Patient de 36 ans, présentant des douleurs lombaires chroniques. Un CT abdominal met en évidence un volumineux calcul de 5 x 6 cm occupant toute la lumière du pyélon gauche associé à un calcul coralliforme caliciel inférieur de 3 x 2 cm. Mise en évidence par ailleurs d'une image typique de maladie de la JPU. L'indication à une pyéoplastie laparoscopique associée à une pyéolithotomie est posée. En per-opératoire extraction complète des lithiases. En post opératoire, résolution complète des symptômes, avec une scintigraphie de contrôle montrant une résolution complète de l'obstacle de la voie urinaire.

Conclusion

Les volumineuses lithiases de stase pyéliques provoquées par les maladies de la JPU peuvent être prises en charge par abord laparoscopique exclusif, évitant ainsi des interventions en plusieurs temps. La volumineuse taille des calculs n'a, dans notre cas, pas engendrée de difficulté opératoire.

V08: Removal of a transobturator mesh (TOT) using a step-by-step vaginal approach: Video presentation

J. Tornic, J. Neuenschwander, S. Elneil, H. John
London (UK), Winterthur (CH)

Introduction

Polypropylene mesh is widely used for incontinence, pelvic organ prolapse and hernia surgery. However, mesh-related complications, such as voiding dysfunction, dyspareunia (incl. hispareunia) and pelvic pain are common problems affecting up to one in ten patients after incontinence mesh insertion. For this reason, mesh removal may need to be considered in certain cases.

Case Report

A 42-year-old woman (gravida 2, para 2) presented with a history of pelvic, groin and leg pain shortly after having had an insertion of a transobturator tape (TOT) for urinary stress incontinence, labioplasty and anterior and posterior colporrhaphy for grade 1 cystocele.

Two months after the surgery above, the examination findings were: normal vaginal mucosa without any signs for mesh erosion, painful palpation of the TOT and significantly impaired mobility due to pain. At this time, the patient was taking Pregabalin, opioids and conventional pain killers. There was no evidence of bladder dysfunction nor urethral or bladder injury as assessed by urodynamics and urethro-cystoscopy, respectively. Additionally, nerve damage was excluded with a neurophysiologic examination.

Following these assessments, it became clear that the patients' symptoms were most likely due to the TOT mesh. Thus, arrangements were made to surgically remove the mesh.

Surgical outcome

Using a well-established vaginal surgical technique, developed by one of the authors, the mesh was removed. A vaginal pack was left in-situ for 24 hours, and a foley catheter was left in-situ for 7 days. She had a trial without catheterisation after that period, but her post-void residual was elevated. Thus, she was taught how to perform ISC as an interim measure until spontaneous voiding with complete emptying recommenced, which was within about two weeks after surgery.

The patient recovered well after surgery. Over a period of six weeks she ceased all her opioids and other pain medication.

Conclusion

Our case demonstrates that TOT mesh removal should be considered as an option for patients experiencing mesh-related complications. Trimming or partial removal of mesh is currently considered superior to attempted complete mesh removal, but increasingly it is noted that pain may persist. Pain medicine is key to the management of this patient group, and it is quite clear that properly designed and powered randomized controlled studies are necessary.

V09: Die Prostataembolisation (PE) Beschreibung der Intervention

L. Mordasini, E. Arbelaez, L. Hechelhammer, D. Engeler, H. Schmid, D. Abt
Luzern (CH), St. Gallen (CH)

Einführung

Die PE wird aktuell als eine minimalinvasive Alternative für die Behandlung des Prostataobstruktionssyndroms diskutiert. Das Ziel dieses Videos ist die schrittweise Beschreibung der PE.

Material und Methoden

MRT oder CT des Beckens sind wichtig um die Gefässsituation und die Durchführbarkeit des Eingriffs zu erörtern. Eine Niereninsuffizienz ist kontraindiziert. Die PE wird auf einem Interventionstisch für Angiographien durchgeführt und wird durch das Einlegen eines Dauerkatheters (DK) begonnen. Nach dem Einsetzen der Lokalanästhesie (LA) legt der interventionelle Radiologe den Zugang in die A. femoralis. Ein Mikrokatheter (MK) wird in die A. iliaca interna gelegt und unter Röntgenkontrolle in die Rr. prostatici vorgeschoben. Eine Rotationsangiographie bestätigt die richtige Lage des MK. Kleine Embolisationspartikel (100-400µm) werden über den MK appliziert. Das gleiche Vorgehen wird analog kontralateral durchgeführt. Der DK kann nach dem Eingriff entfernt werden mit Restharnbestimmung vor der Entlassung. Um einen Harnverhalt zu verhindern, sollten NSAID verschrieben werden. Ischämische Schmerzen sind normalerweise selbstlimitierend und können gut behandelt werden.

Ergebnisse

Die PE ist technisch sehr anspruchsvoll und kann durch die Strukturierung mittels klar definierter Schritte erleichtert werden. Die umfassende präoperative Abklärung und korrekte postoperative Behandlung sind unabdingbar.

Nachteile der PE sind das Risiko der Embolisation von falschen Strukturen und die Strahlenbelastung des Patienten. Diese Limitationen werden durch die geringe Invasivität und der hohen Patientensicherheit, insbesondere beim älteren Patienten kompensiert.

Schlussfolgerungen

Die PE in LA ist machbar und sicher, wenn von Experten durchgeführt. Von grosser Wichtigkeit ist die gute Kollaboration zwischen Urologen und interventionellen Radiologen.

Posterdiskussion IV - Grundlagenforschung

Discussion des posters IV - Recherche fondamentale

P42: Molecular characterization of the murine urinary bladder using different approaches of single cell RNA sequencing

B. Kiss, A. Kershner, W. Lu, P. A. Beachy
Stanford (US)

Introduction

Molecular identification of bladder mucosal cell types may identify pathways active in key cell subpopulations, including urothelial stem cells and tumor initiating cells, and may facilitate the development of approaches for the manipulations of these cells for therapeutic benefit.

Materials and methods

We made single cell preparations of bladder mucosa from three-month-old male and female mice. We used two different technologies for scRNAseq, 10X RNAseq and SmartSeq2. For 10X RNAseq we used unsorted single cells whereas for Smartseq2 we FACS-sorted three different cell populations: 1) Lin-, Epcam+, Sca-; 2) Lin-, Epcam+, Sca+; 3) Lin-, Epcam-, Sca+. For clustering and transcriptome expression analyses, we used the Seurat package in R. We made fluorescence mRNA in situ hybridization to investigate the spatial distribution of mesenchymal cells.

Results

1,196 FACS sorted single bladder mucosal cells were sequenced using SmartSeq2 and 2,500 unsorted single cells were sequenced using the 10X platform.

The 2 platforms revealed similar three clusters each of urothelial and mesenchymal cells. The urothelial populations expressed high levels of the epithelial markers *Cldn4* and *Epcam*. The clusters expressing the highest levels of uroplakins, e.g., *Upk3a*, likely represent umbrella and intermediate cells. Clusters expressing the highest levels of the basal marker *Krt14* likely represent basal-most cells.

Like the urothelial cells, the mesenchymal cells also displayed significant heterogeneity. Mesenchymal cells expressed high levels of the stromal marker *Dcn*. Expression of the marker genes *Car3* and *Scara5* defined different mesenchymal cell clusters. Mesenchymal cell types were spatially restricted in vivo, with *Car3*-expressing cells located in close proximity to, and *Scara5*-expressing cells located further from, the urothelium. Male and female cells largely clustered separately.

In addition, the 10X cell preparations were unsorted and contained minor subpopulations of endothelial cells (indicated by expression of *Esam* and *Cd31*), and immune cells including monocyte and/or macrophage blood cells (indicated by expression of the myeloid lineage marker *Cd33* and macrophage/monocyte marker *Cd14*).

Conclusion

Molecular characterization of the murine bladder using scRNAseq reveals an unreported heterogeneity of cells in the urothelium as well as in the stroma.

P43: Near infrared photoimmunotherapy using anti-CD47 antibody for human bladder cancer

B. Kiss, K. McKenna, R. Ertsey, N. S. van den Berg, K. E. Mach, E. L. Rosenthal, J. P. Volkmer, J. C. Liao
Stanford (US), Palo Alto (US)

Introduction

Near infrared (NIR) photoimmunotherapy (PIT) is a new molecular-targeted cancer therapy that uses a specific photosensitizer (IRDye700DX) conjugated to a monoclonal antibody. CD47 is a cell surface protein that elicits a “don’t eat me signal” to prevent macrophage engulfment and is expressed on over 80% of bladder cancer tumors. Thus, targeting CD47 for PIT has the potential to selectively induce cell death in CD47 expressing tumor cells as well as increase phagocytosis of tumor cells.

Materials and Methods

The anti-CD47 antibody (B6H12) was conjugated to IRDye700DX NHS ester and purified using a dialysis spin column. The molecular weight of the conjugated antibody was verified by SDS-page and IRDye700 conjugation verified using the 700nm fluorescence channel of a PEARL imager. Binding of anti-CD47-IRDye700DX to CD47 was verified by ELISA. Mass spectrometry showed a labeling efficiency of 70% with an average of 2 dyes per antibody. Three different human urothelial cell lines (UMUC3, HT-1376 and 639V) were used for in vitro NIR-PIT experiments. 639V cells were stably transfected with GFP and Luciferase using a lentiviral vector. After incubation with 10 µg/ml of anti-CD47-IRDye700 or unconjugated anti-CD47 antibody (1h on ice), cells were irradiated with a red-LED at 670-710nm wavelength at different energy levels. 3 different primary patient samples (2 pTaHG and 1 pT2HG) were brought into single cell suspension and treated similar to the cell lines. The cytotoxic effects of NIR-PIT with anti-CD47-IRDye700DX were determined by PI-staining and flow cytometry. To evaluate macrophage activity, a phagocytosis assay was performed.

Results

Cancer-cell death significantly increased with anti-CD47-IRDye700DX in a light-dose dependent manner in all 3 human bladder cancer cell lines as well as all 3 primary patient samples. Significant cancer-cell death was first observed with 2J exposure and when exposed to 40J of NIR light over 90% of 639V and UMUC3 cells and over 50% of HT1376 died. Phagocytosis of cancer-cells incubated with anti-CD47-IRDye700DX and irradiated with 8J was significantly increased compared to anti-CD47-antibody alone ($p=0.0002$).

Conclusion

NIR-PIT with anti-CD47-IRDye700 shows significantly increased cancer-cell cytotoxicity and significantly increased cancer-cell phagocytosis making this combination a highly promising novel approach for molecular targeted bladder cancer therapy.

P44: Humanized anti-CD47 antibody (Hu-5F9-G4) for metastatic bladder cancer is superior to conventional chemotherapy with Cisplatin and Gemcitabine in a murine bladder cancer model

B. Kiss, A. K. Volkmer, J. C. Liao, J. P. Volkmer, I. L. Weissman
Stanford (US)

Introduction

One mechanism of tumors to prevent phagocytosis and thus avoid removal is to up regulate “don’t eat me” signals. CD47 has been discovered as such a “don’t eat me” signal. CD47 is expressed on more than 80% of bladder cancer cells. Our aim was to investigate the effect of Hu5F9-G4, a humanized CD47 blocking antibody, on bladder cancer growth and metastases alone as well as in combination with standard chemotherapy.

Methods

Hu5F9-G4 mediated phagocytosis of human urothelial bladder cancer cells (639V, previously transduced with a GFP-Luciferase encoding lentivirus) by mouse and human macrophages (3 different donors) was evaluated in vitro. Next, bladder cancer cells (150,000 639V cells) were transplanted s.c. onto the back of 8–10-week-old male NSG mice. After confirmation of engraftment mice were randomized into 4 different treatment cohorts with 6 mice per cohort. Cohort A received PBS (2x/w for 4w), Cohort B received Hu5F9-G4 alone (250 µg 2x/w for 4w), Cohort C received chemotherapy (Cisplatin 2.5 mg/kg and Gemcitabine 25 mg/kg 1x/w for 4w) and Cohort D received chemotherapy for 4w followed by Hu5F9-G4 for 4w. Tumor growth was monitored by in vivo bioluminescent imaging. Metastases were investigated postmortem under fluorescent light for GFP expression using a confocal microscope.

Results

In vitro phagocytosis assays showed a statistically significant increase in cancer-cell phagocytosis when treating the cancer-cells with Hu5F9-G4 compared to PBS, using macrophages from mice as well as from human ($p=0.0001$ and $p < 0.0001$ respectively). In vivo bioluminescence analyses showed a significantly decrease of tumor growth in the Hu5F9-G4 as well as chemotherapy treated cohorts. Tumor growth after 6 weeks in Cohort B [median fold change(FC) 3,6], C [median FC 11,4] and D [median FC 8,9] compared to Cohort A [median FC 28,2]. Because of high tumor burden in PBS treated group the mice in Cohort A had to be sacrificed preliminary after 6 weeks. Animals of all other groups reached the endpoint of 8 weeks. Metastases formation in the liver and the lungs was almost completely inhibited by treatment with Hu5F9-G4, whereas animals in the groups treated with chemotherapy showed metastases in the liver and lungs.

Conclusion

Blocking CD47 using Hu5F9-G4 is an effective method of treating bladder cancer in vitro and in vivo and shows superior suppression of primary tumor growth as well as metastases compared to conventional chemotherapy with Gem/Cis.

P45: Targeting the endothelial Connexins decreases bladder-tumor growth

K. Sathiyandan, F. Alonso, S. Domingos-Pereira, L. Hamard, J. Lavigne, L. Le Gal, P. Jichlinski, J. Haefliger, d. Nardelli Haefliger
Lausanne (CH)

Background

Cell-cell communication mediated by gap junction channels made of Connexin37 (Cx37) and Cx40 occurs between the endothelial cells (EC) of blood vessels and contributes to regulate the structure and function of vessels. We previously identified Cx40 as a potential novel target for cancer treatment. Preclinical data in the orthotopic TC-1 bladder-tumor model, showed that tumor grown in Cx40 deficient mice (Cx40^{-/-}), as compared to wild type (WT) mice, had reduced tumor size and tumor vessel density (tumoral angiogenesis), whereas vessel perfusion, smooth muscle cell coverage and animal survival were increased. Comparable observations were made in WT mice treated by peptide-inhibition of Cx40.

Results

We extended our study to Cx37^{-/-} mice and we similarly demonstrated TC-1 bladder-tumor reduction and increased mice survival. Tumoral angiogenesis was also decreased, though not vessel perfusion. Critical involvement of Cx37 in the control of angiogenesis was further confirmed in matrigel plug subcutaneously implanted in WT and Cx37^{-/-} mice or supplemented with a Cx37 inhibitory peptide. In vitro experiments performed in primary human venous EC (HUVECs) pointed to reduction of EC proliferation in absence of Cx37. Analysis of vessel coverage and effects of double Cx37/Cx40 inhibition/alteration on bladder-tumor growth are currently being investigated.

Conclusion

The data identified Cx40 and Cx37 as potential novel targets for bladder-cancer treatment playing a pivotal role in the control of angiogenesis.

P46: Total and vaccine-specific antibodies in urine of non-muscle invasive bladder cancer patients

L. Derré, V. Cesson, I. Lucca, M. Valério, Y. Cerantola, R. Burruni, U. Fritschi, A. Legris, F. Dartiguenave, P. Jichlinski, D. Nardelli-Haeffliger
Lausanne (CH)

Background

The presence of total and/or vaccine specific antibodies in human urine has been poorly investigated. Towards the development of vaccines against urinary tract infections (UTI), it is important to determine the ability of intramuscular (i.m.) immunization to result in vaccine-specific antibodies in urine in order to locally protect from infections.

Method

As a model, levels of total and vaccine-specific antibodies were determined in urine during a phase I trial where non-muscle-invasive bladder cancer (NMIBC) patients at different risks of progression, undergoing or not intravesical BCG immunotherapy, received an adjuvanted protein vaccine (5 i.m. doses, 3 weeks apart) that resulted in seroconversion in all patients, regardless of the risk group.

Results

Vaccine-specific IgG and IgA were detected in urine of half of patients at low risk of progression NMIBC and in all the intermediary/high (int/high) risk of progression patients, throughout the 6 months collecting period. Total IgG and IgA were significantly higher in the urine of int/high risk patients, thus explaining the better detection of specific antibodies in this group. Vaccine-specific IgGs titers were significantly correlated to the total IgG levels in the urine, suggesting that most are transudating from the serum. Interestingly, vaccine-specific IgA were not correlated to total IgA levels suggesting that they probably included secretory IgA that are locally produced. Of note, vaccine-specific IgG and IgA were also transiently increased during intravesical BCG instillations, suggesting that antibody levels may also be modulated during bacterial infections.

Conclusion

Our data show that i.m. immunization can effectively induce transudating and locally produced vaccine-specific antibodies in urine. Although, their detection may be influenced by the level of total antibodies, it-self varying with some pathologies (in our case int/high risk NMIBC), induction of vaccine-specific antibodies in situ may contribute to protection against infections in the bladder.

P47: Intravesical Ty21a vaccine promotes cross-presenting dendritic cells and T cell-mediated tumor regression in the MB49 bladder cancer model

S. Domingos-Pereira, K. Sathiyandan, S. La Rosa, L. Chalupova, P. Martel, R. Hojeij, M. F. Chevalier, I. Lucca, L. Derré, J. Haefliger, P. Jichlinski, D. Nardelli-Haefliger
Lausanne (CH)

Background

Our recent pre-clinical data demonstrated that intravesical instillation of Ty21a/Vivotif[®], a commercial vaccine against typhoid fever, is an effective alternative option to the standard Bacillus-Calmette-Guérin (BCG) immunotherapy for non-muscle-invasive bladder cancer (NMIBC).

Results

Here we characterized the effects of Ty21a on the bladder and investigated the innate and/or adaptive immune mechanisms underlying tumor-regression towards the use of such a bacterial vaccine in NMIBC patients. Our data show that a significant survival of MB49 bladder-tumor bearing mice was achieved by intravesical instillations of Ty21a doses ranging from 10⁶ to 10⁸ colony-forming units. Morphological and immunohistochemical analyses showed that both BCG and Ty21a instillations were associated with bladder inflammation, which could be, however, decreased by using low, but still efficient, doses of Ty21a. Flow cytometry analysis demonstrated a significant infiltration of T cells, natural killer cells (NK) and myeloid cells after a single dose of Ty21a as compared to control, while this was only observed after multiple doses of BCG. The induced myeloid cells included a majority of neutrophils and dendritic cells (DC). The latter subset consisting mainly in cross-presenting Ly6C+CD103+ DC, which were significantly more numerous upon Ty21a instillation than upon BCG. Antibody-mediated depletions of immune cells demonstrated that Ty21a bladder-tumor treatment required CD4 and CD8 T cells, but not NK cells or neutrophils. Thus, data pointed to the generation of an anti-tumor adaptive immunity as a key process underlying Ty21a-mediated treatment efficacy. Investigation of cross-presenting properties and crucial involvement of Ly6C+CD103+ DC is ongoing.

Conclusion

Altogether, these data highlights novel mechanisms of intravesical Ty21a therapy towards safe and efficient implementation in NMIBC patients. Thereby a clinical trial is ongoing in our institution to assess the safety of this new therapy in NMIBC patients.

P48: $\gamma\delta$ T cells involvement in bladder cancer

S. Nguyen, M. Chevalier, A. K. Schneider, S. Rodrigues-Dias, F. Dartiguenave, D. Nardelli-Haeffliger, P. Jichlinski, L. Derré
Lausanne (CH)

Context and aim

T lymphocytes are key players of tumor immunosurveillance, leading to an effective killing of cancer cells and correlate with an improved clinical outcome in several cancers (1). Huge effort has been made for the development of immunotherapy, mainly focusing on classical $\alpha\beta$ T lymphocytes. However, $\gamma\delta$ T cells recently aroused a strong interest as they may also have a protective role in cancer, due to their potent ability to produce effector cytokines. $\gamma\delta$ T cells express a non-classical $\gamma\delta$ TCR and natural killer receptors such as NKG2D, allowing the recognition of phosphoantigens independently of MHC-complex (2). $\gamma\delta$ T cells, which do not express CD4 nor CD8, account for 1-5% of total T cells in the peripheral blood of healthy donor and 10-20% in some tissues such as the intestine or the dermis (3). In renal cancer carcinoma (RNC) and colorectal cancer, $\gamma\delta$ T cells were found to be increased in peripheral blood and at the tumor site, suggesting the involvement $\gamma\delta$ T cells in cancer (4; 5). The recent development of $\gamma\delta$ T cells-based immunotherapy showed in phase-I clinical trials, clinical benefit and minimal risk of adverse events, in different cancer type, such as RNC, prostate cancer and acute myeloid leukemia (6). Thus, the aim of this project consists of determining the role of $\gamma\delta$ T cells in the urothelial cancer (UCa).

Materials and methods

Patients and sample collection: Peripheral blood mononuclear cell (PBMC) were obtained from n = 31 non-muscle-invasive bladder cancer (NMIBC) and n = 21 muscle-invasive bladder cancer (MIBC) patients who had given consents for enrollment in this study.

Flow cytometry: Antibodies against human CD3, CD4 and CD8 and fixable viability dye were used to stain UCa patient PBMCs. All samples were analyzed on a Beckman Coulter Gallios and data analysis were performed with FlowJo software (Treestar).

Results

Stained PBMCs were gated on double negative (CD4^{neg}/CD8^{neg}) CD3⁺ T cells. This analysis gives us an approximation of $\gamma\delta$ T cells frequency within circulating lymphocytes. UCa patients with a high frequency of DN/CD3⁺ T cells have a significant improvement ($p < 0.05$) of recurrence free survival comparing to low frequency DN/CD3⁺ patients.

Conclusion

Our preliminary results suggest that $\gamma\delta$ T cells may be important in the control of UCa recurrence. However, further thorough investigations (phenotypic characterization, functional studies...) are needed to decipher the role of $\gamma\delta$ T cells in UCa patients.

P49: Toward the development of clinically relevant ex vivo models of prostate cancer

C. Le Magnen, M. G. Muraro, S. Dugas, T. Vlajnic, C. Ruiz, H. Seifert, L. Bubendorf, C. A. Rentsch
Basel (CH)

Background and objectives

A better understanding of the mechanisms leading to prostate cancer (PCa) progression and castration-resistance is an important challenge and key to improve the outcome of patients with lethal PCa. Yet studies aiming at elucidating such kind of mechanisms have been limited by a low availability of clinical specimens and a shortage of suitable in vitro model systems. In this study, we aim at developing clinically relevant ex vivo models of advanced PCa.

Material and Methods

Primary samples from PCa patients undergoing radical prostatectomy (RP) or transurethral resection of the prostate (TUR-P) at the University Hospital Basel were enrolled. Immediately after surgery, tissue specimens were evaluated by an experienced pathologist for quality of the material and tumor content. Tissue fragments were cultured in perfusion-based bioreactors (so-called U-CUP), and in control "static" conditions. In parallel, tissues were digested overnight in order to generate single cell suspensions that were cultured as three-dimensional structures. Phenotypic and histological analyses were performed using standard Hematoxylin and Eosin (H&E) and immunohistochemistry (IHC) assays.

Results

In this proof-of-concept study, we used perfusion-based bioreactors developed for tissue engineering purposes to test whether freshly-excised prostate cancer tissues may be maintained in prolonged culture. To take in account potential intra-tumor heterogeneity, three to five fragments of tissue were used per bioreactor and two bioreactors were used per patient's sample, whenever possible. Upon one week of culture, the architecture of the tissue appeared to be better maintained and the tissue microenvironment was better preserved in perfused vs. static cultures. In parallel, we successfully established primary organoid/organotypic cultures derived from the same patients' tissue specimens, using different culture conditions. We are currently assessing phenotypic features characterizing the different model systems and comparing them with the primary tissue they are originating from. Next, we will perform a thorough transcriptomic and genomic characterization of the newly established models.

Conclusions

We envision that these models will serve as useful tools for future studies aimed at evaluating the efficacy of clinically relevant drugs and exploring the functional relevance of specific molecular factors in PCa progression.

P50: Role of the endoplasmic reticulum redox regulators Ero1-alpha, GPX8 and ERp44 in prostate cancer development

J. Cornelius, T. Anelli, I. Cavarretta, T. Tempio, E. Pozzi, A. Mattei, R. Sitia, A. Salonia
Luzern (CH), Milan (IT)

Introduction

Prostate cancer plays a major role in aging society. It accounts for 15% of cancer diagnosis in men and it is the 5th leading cause of cancer-related deaths in western countries. Cancer development is influenced by aberrant signaling pathways where redox-dependent signaling likely play a crucial role. In vitro, preliminary data in breast and lung cancer suggest that redox-regulator proteins like Ero1a, ERp44 and GPX8 are fundamental in tumor development and progression. We aimed to evaluate the role of these redox regulatory proteins in prostate cancer.

Methods

Cell culture: RWPE-1, LNCaP, Du145, PC3, PC3-Docetaxel-resistant cell lines

RNA interference: transient protein transcription knockdown (siRNA)

Western Blotting assay: Absolute protein Levels/Ratios and confirmation of transient transcription knockdown

Gap-filling assay: changes in tumor cell motility under transient protein expression knockdown

IncuCyte proliferation assay: changes in tumor cell proliferation under transient protein expression knockdown

Immunofluorescence assay: Phalloidin staining for polymerized actin in knockdown cells

Stat analysis: data expressed +/- standard deviation. T-test with significance defined as $p < 0.05$.

Results

Absolute redox protein levels and ratios differ significantly between benign and malignant and androgen dependent and independent prostate cancer cell lines. Compared to RWPE-1 cells, ERp44 expression is significantly decreased in all malignant prostate cancer cell lines while the expression of GPX8 and Ero1 alpha is increased in highly malignant, metastatic prostate cancer, Ero1 alpha especially in Docetaxel resistant PC3 cells. Knockdown of ERp44 highly inhibits while GPX8 siRNA promotes cell motility in PC3 cells. ERp44 siRNA provokes a high level of polymerized cortical actin with a low amount in GPX8 siRNA cells in line with the motility assays.

Discussion

Our data suggest that Ero1-alpha, ERp44 and GPX8 play a crucial role in prostate cancer development and progression. Imbalance in their expression levels could have consequences on VEGF folding, Calcium homeostasis and oxidative stress/ H₂O₂ signaling impacting on tumor progression and metastasization.

P51: Conventional and PDL1-expressing regulatory T cells are enriched during BCG therapy and may limit its efficacy

M. F. Chevalier, A. K. Schneider, V. Cesson, S. Rodrigues-Dias, F. Dartiguenave, I. Lucca, P. Jichlinski, D. Nardelli-Haefliger, L Derré
Lausanne (CH)

Aims

Immunoregulatory mechanisms have emerged as key players in various cancers. While T lymphocytes are crucial for the control of tumor growth, they often include regulatory subsets known to restrain T-cell anti-tumor activity. Such immunoregulation may occur during BCG therapy and need to be better scrutinized in order to identify new targetable pathways for non-muscle invasive bladder cancer treatment. We thus assessed the presence and the role of conventional regulatory T cells (cTregs) and of the newly described PD-L1-expressing Tregs in blood and urine of patients undergoing BCG treatment.

Methods

In a prospective study, levels of cTregs and PD-L1+ Tregs were measured by 10-color flow cytometry in blood and fresh urine of 17 patients during BCG therapy. Data were correlated with subsequent recurrence-free survival. Besides, mechanisms of Tregs induction were also investigated using bladder cancer cell-lines and BCG in-vitro.

Results

cTregs were found at higher frequencies in the urine compared to the periphery, and were induced by bladder tumor cells in vitro. cTregs levels did not differ between pre- and post-BCG urine samples. Interestingly, while circulating PD-L1+ Tregs were not detectable in the blood of healthy donors and patients, substantial levels were found in urine during BCG therapy. In contrast to cTregs, PD-L1+ Tregs frequencies were significantly higher in post- versus pre-BCG samples. In-vitro experiments suggested that BCG infection of tumor (and non-tumor) urothelial cells could induce PD-L1+ Tregs, partially via an IFN- β -mediated mechanism. Of note, high level of regulatory T cells in urine was predictive of rapid recurrence following BCG therapy ($p = 0.007$).

Conclusion

Our findings demonstrate that T lymphocytes recruited during BCG therapy encompass a significant fraction of regulatory cells including a non-classical source of PD-L1 and reinforce treatment strategies combining BCG with PD-1/PD-L1 checkpoint inhibitors as promising approaches for non-muscle invasive bladder cancer.

P52: Preclinical Development of Novel PSMA-Targeting Radioligands – Modulation of Albumin-Binding Properties to Improve Prostate Cancer Therapy

C. A. Umbricht, M. Benešová, S. Cohrs, R. Schibli, C. Müller
Villigen (CH)

Radioligands targeting the prostate-specific membrane antigen (PSMA) have shown potential in the imaging and therapy of prostate cancer. The aim of this study was to develop novel PSMA ligands with improved tumor uptake and directly compare them to ^{177}Lu -PSMA-617, which is in early clinical testing. Two compounds were synthesized based on a glutamate-urea-lysine PSMA-binding entity and a DOTA-chelator equipped with a strong (PSMA-ALB-53) or a weak (PSMA-ALB-56) albumin-binding moiety to extend blood circulation.

The compounds were radiolabeled with the therapeutic radionuclide Lutetium-177 (^{177}Lu , β^- -emitter, $T_{1/2} = 6.65$ d) and tested extensively in vitro and in vivo. ^{177}Lu -PSMA-ALB-53 showed significant in vitro binding to human and mouse serum proteins, which was ten-fold higher than the affinity of ^{177}Lu -PSMA-ALB-56. Uptake of the two novel radioligands in PSMA-positive PC-3 PIP cells was PSMA-specific and comparable to ^{177}Lu -PSMA-617 (54-58%, 4 h incubation). Time-dependent biodistribution studies performed in PC-3 PIP/flu tumor-bearing nude mice showed a more than 2-fold increased tumor uptake of ^{177}Lu -PSMA-ALB-53 and ^{177}Lu -PSMA-ALB-56 when compared to ^{177}Lu -PSMA-617. The excellent characteristics were also confirmed by preclinical SPECT/CT imaging studies. ^{177}Lu -PSMA-ALB-56 showed faster blood and kidney clearance than ^{177}Lu -PSMA-ALB-53 and was, therefore, selected for a preclinical side-by-side therapy study with ^{177}Lu -PSMA-617 in PC-3 PIP tumor-bearing mice. The application of ^{177}Lu -PSMA-ALB-56 and ^{177}Lu -PSMA-617 at equal radioactivity (5 MBq per mouse) revealed clearly better antitumor effects for ^{177}Lu -PSMA-ALB-56 with complete tumor remission in more than 50% of the mice. Consequently, mice treated with ^{177}Lu -PSMA-ALB-56 showed an increased survival time with four out of six mice still alive at the end of the study at Day 84, relative to the cohort treated with ^{177}Lu -PSMA-617 (median survival time: 32 days). Our results demonstrated the superiority of ^{177}Lu -PSMA-ALB-56 over the clinically-employed ^{177}Lu -PSMA-617. Further testing to assess ^{177}Lu -PSMA-ALB-56 for clinical application is warranted as it may enable effective radionuclide therapy of prostate cancer with lower radioactivity and/or less frequent applications.

P53: Preclinical models of personalized medicine in prostate cancer

S Karkampouna, M De Menna, F la Manna, E Snaar-Jagalska, L Cheng, L. Beimers, P. Kloen, O. T. Guenat, S. Zeinali, D. Keller, T. H. Booij, J. Grosjean, I. Klima, C. U. Stirnimann, M. Sphan, G. N. Thalmann, M. Kruithof-de Julio
Bern (CH), Leiden (NL), Amsterdam (NL), Zürich (CH)

Background & goals

Prostate Cancer (PCa) is the most frequently diagnosed cancer in men and a major cause of morbidity and mortality. Metastasis initiating cells (MICs) are cancer cells that drive the metastatic lethal phenotype. Understanding the biology of MICs is needed to provide tools for assessing patient risk and creating targeted therapies¹. Little is known about the heterogeneity of MICs and whether subpopulations of MICs carry markers linked to high risk metastatic disease. Our aim is to establish experimental tools for the elucidation of molecular characteristics and heterogeneity of MICs in PCa.

Materials & methods

We used multiple preclinical models including organoids, ex vivo maintenance of needle biopsies, zebrafish xenografts, and microvasculature on chip. These complementary models are robust, fast and provide personalized, clinically relevant information about the biology of MICs and their therapy response to.

Results

We generated patient derived xenografts (PDX) of PCa and patient derived organoids from needle biopsies². We developed a culture system for studying tumor tissue ex vivo that allows cultivation of tumor slices and needle biopsies without loss of normal architecture, viability or specific marker expression³⁻⁴. Organoids were tested for response to PCa compounds, enzalutamide and docetaxel, as part of pilot experiments for the establishment of automated high throughput screens at NEXUS Personalized Health Technologies. We find that the efficacy of enzalutamide and docetaxel correlates with higher cell densities, in the range of 1000-1750 cells. We customized a microvasculature-on-a-chip device that mimics the bone microenvironment and used this as a model to study cancer cell extravasation. The self-assembled vascular network forms within 5-7 days. The vessels are open and perfusable and cancer cells can flow through the vascular network. We were able to track extravasation of tumor cells over time by fluorescence and brightfield live microscopy (De Menna et al. in preparation). This methodology is complemented by in vivo characterisation of tumorigenic properties of organoid-forming cells in zebrafish xenografts.

Conclusions

The work described in this study has developed and implemented different ex vivo, in vivo and in vitro methodologies to address the behavior of MICs in PDXs and other clinical material.

P54: Establishment of a hormone sensitive patient derived xenograft model of prostate cancer

S. Karkampouna, J. Grosjean, I. Klima, A. Sboner, M. Sphan, M. A. Rubin, G. N. Thalmann, M. Kruithof-de Julio

Bern (CH), New York (US), Zürich (CH)

Background & goals

Understanding tumor initiation and metastasis in prostate cancer (PCa) is crucial for proper prognosis of high risk patient groups and requires experimental models that closely mirrors the stages of the human disease. We aim to establish patient derived xenograft (PDX) and other preclinical models (e.g. human organoids and ex vivo culture of human tumor tissue) that provide insights into tumor growth and metastasis and response to therapy.

Materials & methods

Patient material is obtained from radical prostatectomy procedures. Our standard operating protocol includes: (i) PDX establishment by subcutaneous implantation of needle biopsies, (ii) ex vivo maintenance of PDX derived tissue in culture, and (iii) organoid derivation from cancer stem cell-like cells. We test drug responses of organoids to standard-of-care compounds by Viability CellTiter Glo 3D assay. The response of ex vivo tumor tissue following 5-day drug exposure is assessed by histological evaluation of morphology, viability and apoptosis.

Results

We have established a metastatic PCa PDX model from a penile metastasis from primary PCa (PNPCa). The tumor growth kinetic (~ 8 weeks) and luminal epithelial morphology were maintained through the passages. This model is androgen-sensitive as tumors regress upon castration and regrow after testosterone administration. Drug screens on tumor tissue specimens cultured ex vivo with the standard PCa treatments docetaxel and enzalutamide indicated that docetaxel had cytotoxic effects, while enzalutamide induced downregulation of luminal markers and reduced nuclear translocation of Androgen Receptor. We established PNPCa-derived organoids and assessed their molecular and genetic composition versus original tissue. Viability of PNPCa organoids is insensitive to hormone inhibitors, suggesting that they may represent an androgen-resistant, cancer stem cell population.

Conclusions

We have established a novel hormone-sensitive PCa PDX model. This study can provide a holistic understanding of therapy response and androgen resistance mechanisms.

P55: Cripto blockade reduces prostate cancer reactivity to microenvironment and metastatic potential

F. Ia Manna, P. C. Gray, E. Zoni, S. Karkampouna, G. N. Thalmann, M. Kruithof-de Julio
Bern (CH), La Jolla (US)

Context and Objectives

The involvement of Cripto/GRP78 signaling axis in cancer development and progression has been documented in a wide range of cancers, including prostate cancer.

In this study, we aimed at further investigating this signaling axis prostate cancer, with in vitro, in vivo and patient-derived xenograft (PDX) models.

Materials and Methods

We treated PC3M-Pro4 cells with Alk4L75AFc (10 mg/ml), a soluble recombinant decoy receptor for Cripto, and with 2-deoxyglucose (2-DG, 1mM), a starvation-inducing drug, either alone or in combination, tracking the migration of cells in a wound-healing assay for up to 5 days. We then assayed the effect of Alk4L75AFc (5mg/kg) on a murine model of prostate cancer metastasis performed by intracardiac injection of luciferase-transfected PC3M-Pro4 cells. In addition, we tested the effect of Alk4L75AFc on organoids generated from the PDX line BM18.

Results

When exposed to 2-DG, PC3M-Pro4 cells showed reduced migration, that was further inhibited by co-treatment with the Alk4L75AFc. Treatment with 2-DG of Cripto knocked-down PC3M-Pro4 cells recapitulated the inhibition induced by 2-DG and Alk4L75AFc co-treatment; however, the reduction of migration induced by 2-DG treatment could be partially rescued by adding soluble Cripto (1ug/ml). Treatment with Alk4L75AFc in mice injected with PC3M-Pro4-luc2 cells significantly reduced the amount and the extension of metastases.

BM18 organoids showed a significant reduction of proliferation when treated with Alk4L75AFc.

Conclusions

In summary, we linked an enhanced migratory response of prostate cancer cells under glucose deprivation to Cripto signaling, we showed that blocking Cripto in vitro and in vivo respectively reduces the proliferation and the metastatic potential of prostate cancer cells.

P56: Description of Lethal Prostate Cancer Metabolomics Heterogeneity by a MALDI-imaging Approach

E. Zoni, A. Buch, A. Feuchtinger, M. Spahn, A. Walch, M. Kruithof-de Julio
Bern (CH), München (DE)

Introduction and aim

Prostate Cancer (PCa) is the most frequent malignancy detected in males and the second leading cause of death from cancer in males. Despite the current diagnostic standards, there is still an urgent need for the identification of new prognostic markers to help in the definition of an individualized and personalized treatment for patients. Metabolites reflect gene expression and protein function and perturbed metabolism is considered a novel “hallmark of cancer”. In this study, we aimed to identify the metabolic signature for lethal prostate cancer, in order to characterize those patients at highest risk of metastatic progression.

Experimental procedure

We employed high-resolution matrix-assisted laser desorption/ionization Fourier-transform ion cyclotron resonance mass spectrometry imaging (MALDI-FT-ICR MSI) to detect and visualize metabolites in formalin-fixed, paraffin-embedded (FFPE) PCa tissue microarrays (TMAs) in a cohort of 211 PCa patients that underwent radical prostatectomy between 1994 and 2001. Statistical differences in patient survival were measured using the Kaplan-Meier log-rank test and multivariate survival analysis performed using Cox proportional hazards regression models.

Results

We employed a metabolic profiling approach to distinguish lethal from non-lethal disease in a subset of lethal PCa patients (PCa related death within 5 years following radical prostatectomy) VS non-lethal PCa patients (survival > 10 years following radical prostatectomy, without evidence of recurrence). By virtual microdissection molecular signatures were selected from tumor regions and statistically compared, leading to a signature of small molecules significantly different between lethal- and non-lethal PCa patients ($p < 0.05$). Visualization of these m/z species displayed clear differences in the intensity patterns between lethal VS non-lethal disease.

Next, we used metabolite MSI data to address patient survival outcome between lethal and non-lethal PCa cases. Statistical analysis showed that different m/z species significantly correlated with patient's outcome (e.g. PSA free survival and disease free survival).

Conclusion

In this study we identified a metabolic pattern able to discriminate between lethal and non-lethal disease. Further validation of an independent cohort is needed to validate the novel findings of metabolites and might lead to the identification of novel biological markers.

P57: Investigation of TRPM4 and store-operated calcium entry in prostate cancer cell systems and a primary prostate cancer stem cell model

M. Kiener, A. Borgström, S. Kappel, B. Hauert, C. Delalande, E. Zoni, J. Raymond, G. N. Thalmann, C. Peinelt, M. Kruithof-de Julio
Bern (CH)

Prostate Cancer (PCa) is the second leading cause of cancer-related death in men; mainly due to incurable metastases. Therefore, the characterization of cancer cell subpopulations with stem cell properties is crucial to target aggressive PCa cells and improve prostate cancer therapy. High aldehyde dehydrogenase (ALDH) activity has been implicated in bone metastasis formation, tumor recurrence and therapy resistance (1). Bulk unsorted PCa cell lines (ALDH^{high}/ALDH^{low}) of different metastatic ability can be distinguished by specific ion channel subsets (2). Store-operated Ca²⁺ entry (SOCE) is mediated by Orai Ca²⁺ channels activated by STIM Ca²⁺ sensors. Transient receptor potential melastatin 4 (TRPM4) is a Ca²⁺ activated cation selective channel which negatively regulates SOCE and is highly expressed in PCa. TRPM4 knocked-down by siRNA in PCa cell lines resulted in elevated Ca²⁺ signalling and decreased migration in PCa cells implicating a role for TRPM4 in cancer cell migration (3). Lately, a small molecule inhibitor of TRPM4, CBA, has been developed blocking endogenous TRPM4 in PCa cells in the low micromolar range (4).

Here we studied the expression profile of ion channels (Orais and TRPM4) in ALDH^{high}/low PCa cell subpopulations and whether it correlates to their differential tumorigenic and metastatic potential.

Methods

The expression level of Ca²⁺ channels involved in SOCE was assessed by RT-qPCR in PC3Mpro4_Luc2 cells sorted for tumorigenic, metastatic ALDH^{high} and non-tumorigenic, non-metastatic ALDH^{low} subpopulations by ALDEFLUOR. SOCE was measured by Fura-2 ratiometric dye based Ca²⁺ imaging in ALDH^{high}/low sorted PC-3M-pro4 cells. TRPM4 was knocked-out by Crisper/Cas9 or blocked by the TRPM4 inhibitor CBA in DU145 cells and migration was assessed by migration assay.

Results

SOCE levels were higher in PC3Mpro4-ALDH^{high} cells compared to the ALDH^{low} subpopulation. This could be due to differential mRNA levels of Orais and STIMs, as observed in PC3Mpro4_Luc2 ALDH^{high}/ALDH^{low} cells. The migration capacity of DU145 cells was reduced by TRPM4 knock-out as well as by application of the TRPM4 inhibitor CBA.

Conclusion

The stem cell-like ALDH^{high} PCa cell subpopulation showed differential expression of Ca²⁺ channels and higher SOCE levels than ALDH^{low} cells. Additionally, TRPM4 affects the migration capacity of DU145 cells. Further investigations will show, if there is a differentiated role for Orai/TRPM4 channels in cancer stem cell migration.

Freie Mitteilungen II – Blasenkarzinom

Communications libres II - Cancer de la vessie

M10: NITIMIB - Open-label, single center, Phase II trial of neoadjuvant treatment with Durvalumab in combination with Tremelimumab in Patients with muscle-invasive urothelial carcinoma of the bladder ineligible for cisplatin-based chemotherapy

B. Roth, J. Schardt, G. N. Thalmann, R. Seiler
Bern (CH)

Objective

Based on the unmet clinical need to improve the outcome of patients with muscle-invasive bladder cancer and the lack of an established treatment option for patients who are ineligible for neoadjuvant cisplatin-based chemotherapy regimens, we conduct this prospective phase II trial to determine the safety and antitumor activity of the anti-PD-L1 antibody Durvalumab in combination with the anti-CTLA4 antibody Tremelimumab.

Methods

Prospective, open label, single arm, single center phase II trial (NITIMIB) of a consecutive series of patients with muscle-invasive urothelial cancer of the bladder who are ineligible to receive cisplatin-based neoadjuvant chemotherapy (study start 05-2018). Primary clinical outcome is the efficacy of Durvalumab in combination with Tremelimumab after 4 neoadjuvant cycles according RECIST 1.1 criteria; secondary clinical endpoints are the incidence of treatment-related adverse events, the feasibility of “post-immunotherapy” radical cystectomy, the pathological response and survival. A large translational part is included in the study assessing prognostic biomarkers in fresh tumor tissue, blood and urine to evaluate their predictive value.

Results

Preliminary data show that immune signaling is different between molecular subtypes and the response to immunotherapy is different among these subtypes. PPAR- γ pathway seems to actively prevent immune infiltration as there is an inverse correlation of PPAR γ protein expression and tumor infiltrating CD8 positive lymphocytes as well as the complete absence of immune signaling in tumors with an active PPAR- γ pathway. After FACS plotting of different lymphocytes into CD4 (helper T cells) and CD8 (cytotoxic T cells) compartments in metastatic bladder cancer patients and healthy donors we could subanalyze the regulatory T cells according to CTLA4 expression and the cytotoxic T cells according PD-1 expression. Preliminary data show an upregulation of both markers in metastatic patients. Furthermore, the presence of myeloid-derived suppressor cells (MDSC) varies between patients and healthy donors.

Conclusions

Combination immunotherapy (blocking the PD1/PD-L1 interaction and the CTLA-4-receptor on T-cells) in the neoadjuvant setting is promising and may dramatically change the treatment landscape in bladder cancer patients who are ineligible for cisplatin-based chemotherapy. Biomarkers, however, are needed to identify those 30-35% of patients who benefit most and vice versa those who don't

M11: Impact of Packed Red Blood Cells and Fresh Frozen Plasma Given During Radical Cystectomy and Urinary Diversion on Cancer-related Outcome and Survival: An Observational Cohort Study

M. A. Furrer, A. Fellmann, M. P. Schneider, G. N. Thalmann, F. C. Burkhard, P. Y. Wüthrich
Bern (CH)

Introduction and objective

Radical cystectomy (RC), pelvic lymph node dissection (PLND), and urinary diversion (UD) remain the standard of care for patients with muscle-invasive bladder cancer and are associated with substantial intraoperative blood loss and transfusion of packed red blood cell (PRBC) units with or without fresh frozen plasma (FFP) units. The aim of our study was to assess if perioperative administration of PRBC and FFP units affects disease progression and survival after radical cystectomy for bladder cancer.

Methods

We conducted an observational single-centre cohort study of a consecutive series of 885 bladder cancer patients, between 2000 and 2015. Peri-operative blood transfusion was defined as need for PRBCs and FFP transfusion within the first 24 h after the beginning of surgery. Disease recurrence-free, cancer-specific, and overall survival were estimated using the Kaplan–Meier technique and log-rank test.

Results

A total of 267/885 patients (23%) were transfused; 187/267 patients (70%) received only PRBCs (median 2 units [interquartile range: 1–2]) and 80/267 patients (30%) received PRBCs (2 [2–3]) plus FFP (2 [2–2]). Receipt of PRBCs or PRBCs + FFP was associated with a higher 90 d mortality (7.0% vs 7.5% vs 2.9%; $p = 0.016$), inferior 5 yr recurrence-free survival (no transfusion 92%, PRBCs 74%, $p = 0.005$; PRBCs + FFP 49%, $p = 0.002$), 5 yr cancer-specific survival (no transfusion 74%, PRBCs 60%, PRBCs + FFP 49%, all $p < 0.001$), and 5 yr overall survival (no transfusion 90%, PRBCs 70%, PRBCs + FFP 34%, all $p < 0.001$). In multivariate analysis, blood transfusion was predictive for all-cause mortality (PRBCs [hazard ratio; HR 1.610; $p < 0.001$] and PRBCs + FFP [HR 1.640; $p = 0.003$]) and cancer-specific mortality (PRBCs [HR 1.467; $p = 0.010$] and PRBCs + FFP [HR 1.901; $p = 0.021$]). Limitations include selection bias and lack of standardised transfusion criteria.

Conclusions

Administration of PRBCs and FFP was associated with significantly inferior cancer-specific and overall survival. Relevant preoperative factors for receiving blood transfusion were neoadjuvant chemotherapy, preoperative anaemia, older age, and American Society of Anesthesiologists score 3, and these factors emphasise the importance of preoperative optimisation of patients undergoing cystectomy.

M12: ERAS protocol improves cancer-specific survival after elective radical cystectomy: A retrospective cohort study

F. Crettenand, O. M'Baya, I. Lucca, P. Jichlinski, Y. Cerantola
Lausanne (CH)

Introduction and Objective

Enhanced recovery after surgery (ERAS) protocols have been designed to reduce surgical stress, leading to reduction of short term morbidity and length of hospital stay. However there is a lack of evidence regarding long term benefits on oncological outcomes, especially for urological patients. The present study evaluated the impact of ERAS on cancer specific survival (CSS) following radical cystectomy.

Methods

Between 2011 and 2017, data from 152 consecutive cystectomies were analyzed. Since 2012 all patients were managed in our center according to ERAS protocol as standard of care. Simple cystectomies, orthotopic neobladder reconstruction, follow-up time shorter than 3 months, as patients with extended nodal (pN3) or distant metastasis were excluded. Long term follow-up included date and cause of death. Five-year CSS was calculated using the log-rank Kaplan-Meier method with Cox regression model.

Results

Eighty-nine patients were considered for the final analysis. Fifty-six (63%) ERAS patients were compared to 33 (37%) pre-ERAS patients. The two groups were similar in terms of patient and tumor demographics, except for a higher morbidity in the ERAS group ($p = 0.004$). Five-years CSS rate for ERAS patients was 73 % (SE +/- 6.9%) compared to 49 % (SE +/- 9%) for the pre-ERAS group ($p = 0.04$). In univariate analysis, ERAS protocol, was associated with an increased CSS ($p = 0.048$), while tumor stage (pT) and nodal involvement (pN) were associated with higher disease mortality ($p = 0.02$ and $p = 0.003$, respectively). Interestingly, on multivariate analysis, ERAS (HR 0.44, 95%CI 0.20-0.93, $p = 0.03$), pT (HR 1.5 95%CI 1.12-1.99, $p = 0.007$) and, pN (HR 4.8, 95%CI 2.18-10.47, $p < 0.0001$) were found independent variable of bladder cancer specific survival.

Conclusion

A dedicated ERAS protocol may be associated with improved CSS after radical surgery for bladder cancer.

M13: Roboterassistierte-laparoskopische Zystektomie mit intrakorporaler Harnableitung: Operationstechnische Konklusionen nach 60 Eingriffen

O. Burkhardt, M. Randazzo, C. Padevit, H. John
Winterthur (CH)

Einleitung

Die Zystektomie ist der Goldstandard zur Behandlung des muskelinvasiven sowie des high-risk nicht-muskelinvasiven Urothelkarzinomes der Harnblase. In den letzten Jahren werden Zystektomien zunehmend roboterassistiert durchgeführt. Mit steigender Erfahrung im Bereich der roboterassistierten Chirurgie etablierte sich in den letzten Jahren die Technik der intrakorporalen [Rekonstruktion]. Seit 2014 werden an unserer Klinik nebst der Zystektomie auch die Rekonstruktion vollständig intrakorporal durchgeführt.

Methoden

In einer retrospektiven Analyse wurden die wichtigsten Operationschritte erfasst und aufgelistet. Die Konklusionen nach 60 Eingriffen, welche zu einem guten onkologischen und funktionellen Resultat sowie zu einer schnellen Genesung führen, sollen folgend aufgezeigt werden.

Resultate

Insgesamt wurden 44 intrakorporale Ileum Conduit und 16 intrakorporale orthotope Ersatzblasen rekonstruiert. Alle 60 Harnableitungen konnten laparoskopisch roboterassistiert durchgeführt werden.

Folgende Schritte sollten besonders sorgfältig durchgeführt werden:

Extendierte Beckenlymphadenektomie bis zur Aortenbifurkation. Belassen der Harnblase bis zuletzt an den Plicae umbilicales, um eine ausreichende Präparation des Rektums zu gewährleisten. Durchführung eines intraoperativen Schnellschnitts des Urethrastumpfes (Neoblase) und der Ureterenstümpfe, Ausreichend lange Seit-zu-Seit-Anastomose des Dünndarms (60mm + 45mm Stapler), um eine ausreichende Anastomosenbreite der Ileo-Ileostomie nach Ausschaltung von 50cm Dünndarm zu gewährleisten. Zudem Reduktion der Trendelenburglagerung während Rekonstruktion Harnableitung. Ausreichende Mobilisation der Dünndarmschlinge für eine spannungsfreie ileourethrale Anastomose bei der orthotopen Ersatzblase. Anlegen einer Wallace-Platte, wobei das Urothel nicht mit dem Nadelhalter gefasst werden darf. Konsequentes Vermeiden von Serosaverletzungen am Darm durch Verwendung der Bowel-Grasper. Die Systematisierung jedes intraoperativen Schrittes führte zu einer deutlichen Reduktion der Operationszeit, der stationären Aufenthaltsdauer, Komplikationsrate und schlussendlich auch der Fallkosten.

Schlussfolgerungen

Intraoperative laparoskopisch roboterassistierte Rekonstruktionen des Harntraktes mit Ileum Conduit oder orthotoper Ersatzblase sind technisch anspruchsvoll. Entsprechend sollten die die Operationsschritte in jeder Institution standardisiert werden, um die Operationszeiten sowie Komplikationen zu senken.

M14: Biological characterization of cisplatin-resistant bladder cancer: Implications for second-line treatments?

R. Seiler, E. A. Gibb, N. Q. Wang, H. Z. Oo, H. Lam, K. E. van Kessel, C. S. Voskuilen, B. Winters, M. Takhar, N. Erho, J. Douglas, F. Vakar-Lopez, S. J. Crabb, B. W. G. van Rhijn, E. E. Fransen van de Putte, E. C. Zwarthoff, G. N. Thalmann, E. Davicioni, J. L. Boormans, M. Dall'Era, M. S. van der Heijden, J. L. Wright, P. C. Black

Bern (CH), Vancouver (CA), Seattle (US), Rotterdam (NL), Amsterdam (NL), Hampshire (GB), Sacramento (US)

Introduction

Almost two thirds of patients with muscle-invasive bladder cancer (MIBC) undergoing cystectomy after cisplatin-based neoadjuvant chemotherapy (NAC) have invasive disease. Biological alterations of these cisplatin-resistant tumors induced by NAC remain largely unstudied.

Methods

Radical cystectomy (RC) samples were available for gene expression analysis from 134 patients treated with cisplatin-based NAC who had residual invasive disease, of whom 116 had matched pre-NAC samples. In addition, the tumor bed (non-neoplastic scar tissue) of 21 post-NAC RC specimens with complete pathologic response (i.e. pT0N0) was profiled. Unsupervised consensus clustering was performed and the clusters were investigated for their biological and clinical characteristics. H&E staining and immunohistochemistry (IHC) on tissue microarrays were used to confirm tissue sampling and the gene expression analysis.

Results

Unsupervised consensus clustering yielded four distinct consensus clusters (CC) or subtypes: CC1-Basal, CC2-Luminal, CC3-Immune and CC4-Scar-like. The CC1-Basal and CC2-Luminal subtypes expressed genes consistent with a basal-like (KRT5/6, KRT14) and a luminal-like (GATA3, PPARG) phenotype, respectively. The CC3-Immune subtype had the highest immune activity, including T-cell infiltration and checkpoint molecules (CTLA4, CD80). Finally, the CC4-Scar-like profile was consistent with non-neoplastic scar samples, expressing genes associated with wound healing / scarring (MYH11, SHH, CNN1). Approximately the same numbers of pre-NAC basal- and luminal-like samples remained static (CC1 or CC2) with respect to subtype or were highly immune-infiltrated (CC3) in the post-NAC setting. In the post-NAC setting, luminal-like pre-NAC samples were more likely adopt a scar-like character (CC4), while the basal-like tumors were more likely to show luminal features (CC2).

Conclusions

This study expands our knowledge of cisplatin-resistant MIBC by suggesting molecular subtypes to understand the biology of these tumors. Although these molecular subtypes imply consequences for adjuvant treatments, this ultimately needs to be tested in clinical trials.

M15: Is intravesical thermochemotherapy a viable option for salvage treatment in recurrent non-muscle-invasive bladder cancer?

P. Bosshard, M. A. Furrer, G. N. Thalmann, B. Roth
Bern (CH)

Objective

Both intravesical chemotherapy and BCG instillations significantly reduce the recurrence rate of NMIBC over TURB alone. For Patients with recurrent high grade NMIBC after BCG therapy, treatments other than radical cystectomy (RC) are considered oncologically inferior. Some patients are not willing or unfit to undergo radical cystectomy. As such, it has been demonstrated that the use of intravesical thermochemotherapy with the Synergo® system significantly improves the efficacy of intravesical chemotherapy alone. Here we report on oncological outcome, patient safety and quality of life using a novel device (Elmedical PelvixTT®) for the application of intravesical thermochemotherapy.

Methods

Prospective evaluation of 15 consecutive bladder cancer patients who had undergone intravesical thermochemotherapy with epirubicin using Elmedical PelvixTT® between November 2016 and April 2018. Follow up was performed by 3-monthly cystoscopy and bladder wash cytology. Adverse events were graded according to CTCAE v4.03 and QoL was assessed using validated questionnaires (IPSS, PUF, EORTC QLQ-C30, EORTC QLQ-NMIBC24).

Results

13 of 15 patients were treated for BCG-failures after high-grade NMIBC (n=10) or multiple recurrent and large low-grade NMIBC (n=3), 1/15 for recurrent low grade NMIBC (HIV positive patient; intermediate risk), and 1/15 unfit for RC for MIBC after maximal TURBT. Median follow-up was 8 months. Recurrence-free survival at 12 months was 83%. One of 13 highest risk patients developed T1 high-grade recurrence; RC was consecutively performed. Two of 13 highest risk patients developed tumor recurrence of the upper urinary tract, but remained tumor free in the bladder. The patient with MIBC has been followed-up for 12 months and has not developed any recurrence or metastasis. No adverse events grade ≥ 3 occurred during treatment with thermochemotherapy. However 8/15 Patients (53%) experienced at least one symptomatic urinary tract infection (UTI). Patient reported QoL showed no significant difference before and after treatment.

Conclusions

This study shows promising oncological results for thermochemotherapy in patients with recurrent NMIBC after BCG-failure who are unwilling or unfit to undergo RC. Longer follow-up, however, is needed.

Frequent symptomatic UTI occur. Therefore, urinalysis must be performed prior to thermochemotherapy, which should not be administered in case of asymptomatic bacteriuria.

M16: Radiofrequency-induced thermochemotherapy : preliminary results for patients unfit for surgery

M. Benacka, D. Benamran, C. Iselin, G. Wirth
Genève (CH)

Objectives

Recurrent non-muscle invasive bladder cancer (NMIBC) or BCG-refractory NMIBC is normally treated by radical cystectomy. Radiofrequency-induced thermochemotherapy (RITE) is an alternative for patients unfit for surgery, and has been approved by the EAU Guidelines for adjuvant treatment in moderate to high-risk NMIC patients. Our goal is to present our preliminary experience with RITE in our institution.

Methods

12 patients (10M, 2F, median age 70.8y) with a moderate (recurrent pTa low-grade, n=2) or high risk (pTa high-grade, pT1 and pTis lesions, n=10) NMIBC have been treated with RITE from March 2017 to May 2018 with an adjuvant (n=11) or neo-adjuvant (n=1) treatment protocol, mainly 8 weekly induction instillations followed by maintenance every 6 weeks with 40mg Mitomycin C or Epirubicin. 11 patients (91.5%) presented a BCG treatment failure prior to RITE. Cystoscopic and cytologic controls were done in 3-month intervals by 2 members of medical staff. Treatment-related side effects were screened with a dedicated questionnaire.

Results

The mean follow-up duration was 6.3 months (1.5-14 months). One patient was included in the neoadjuvant protocol because of a non-resectable high-grade papillary lesion still awaiting a cystoscopic evaluation after the induction phase. The recurrence rates were evaluated in 9 cases (3 cases still in the induction phase). One patient (8.5%) had a recurrent high-grade tumour (pT1 + pTis), which wasn't treated since he died shortly after the recurrence from a ruptured aortic aneurysm. The other 8 remained recurrence-free at 6 months, which translates into a 88% (8/9) bladder-preserving theoretical rate for post-BCG failure high risk patients. Concerning the treatment-related side effects, we identified 2 patients (17%) with major urinary symptoms described as violent pelvic pain who couldn't complete the full induction phase; they remain however to this date recurrence-free. 2 patients (17%) described very mild self-resolving pollakiuria and/or nycturia. 2 patients were switched from Mitomycin C to Epirubicin due to a suspected cutaneous allergic reaction. No major side-effects (bladder perforation, necrosis, infection or bleeding) were identified.

Conclusion

In selected patients, RITE represents a safe and reliable tumour management that can eventually delay a radical cystectomy and can be considered as an alternative to "historical" intravesical instillations. However surgery still remain.

M17: Findings and diagnostic consequences after standard work-up in patients with hematuria

S. Waisbrod, C. Fierz, B. Kranzbühler, T. Sulser, H. Mostafid, T. Hermanns, C. Fankhauser
Zürich (CH)

Objective

To report the incidence of urinary tract cancers (UTC) including bladder cancer (BCA), renal cell cancer (RCC) and upper tract urothelial cancer (UTUC) and to study the diagnostic accuracy of renal ultrasound (US) and computerized tomography (CT) to detect UTC in patients referred for initial evaluation of hematuria.

Materials and Methods

Retrospective analysis of patients who underwent cystoscopy, US and CT for asymptomatic, non-infectious, non-traumatic hematuria between 2011 and 2017. Age, gender, BMI, smoking status, results of further diagnostic interventions including transurethral resection (TUR), ureterorenoscopy (URS), renal biopsy and imaging were extracted from medical charts. Discriminatory accuracy of renal ultrasound (US) and computerized tomography (CT) was assessed by 2 x 2 tables.

Results

Of 847 patients, 432 (51%) presented with microscopic and 415 (49%) with visible hematuria. Finally, 10/432 (2.3%) patients with microscopic and 73/415 (17.6%) with visible hematuria were diagnosed with UTC. Patients with microscopic hematuria had BCA in 7 (1.6%), RCC in 3 (< 1%) and UTUC in no single patient. Patients with visible hematuria were diagnosed with BCA in 62 (14.9%), RCC in 7 (1.6%) and UTUC in 4 (< 1%). In patients with microscopic hematuria the specificity and negative predictive value (NPV) were 96% (95%CI 94%-98%) and 100% (95%CI 98%-100%) for US and 95% (95%CI 98%-100%) and 100% (95%CI 98% - 100%) for CT.

Suspicious CT findings triggered further diagnostic interventions in 5 (1%) and follow-up imaging in 12 (2.7%) microscopic hematuria patients. False positive CT results led to additional invasive procedures in 5 patients and follow-up imaging in 12 patients.

Conclusion

The low incidence of UTUC and RCC suggests that US is sufficient to assess the upper urinary tract among patients with microscopic hematuria. Patient with visible hematuria are at a considerable risk for UTC and CT is justified.

Freie Mitteilungen III – Prostatakarzinom Communications libres III – Cancer de la prostate

M18: Lymph node yield and metastatic pattern after extended pelvic lymph node dissection in robotic-assisted laparoscopic prostatectomy: 14 years of experience

S. Sigg, F. Lehner, E. X. Keller, K. Saba, T. Sulser, D. Eberli, A. Mortezaei
Zürich (CH)

Background

Limited data is available regarding the feasibility of robotic-assisted laparoscopic extended pelvic lymph node dissection (RALePLND) for prostate cancer (PC) and the lymph node (LN) yield for each anatomical zone. We aimed to determine the LN yield, distribution patterns and frequency of pelvic LN metastases after RALePLND in men with PC.

Patients and Methods

A retrospective analysis of a consecutive series of men who underwent robotic-assisted laparoscopic radical prostatectomy (RALRP) at our institution between 2004 and 2018 was conducted. RALePLND included the lymphatic tissue along the external iliac artery (medial) and vein, obturator nerve, in the obturator fossa and along the internal iliac artery. The LN yield in total and stratified for each anatomical zone, the frequency and pattern of LN metastases and complications were reported.

Results

Among 1134 men undergoing RALRP, 27 patients with neoadjuvant hormonal treatment or conversion to open surgery were excluded. Of the remaining 1107 patients, 823 received a RALePLND (74.3%) and were analysed.

The median number of LNs removed was 19 (range: 1 - 63); 10 on the right (range: 1 - 33) and 9 on the left side (range: 1-37). An average of 5.3 (\pm 1.8) LNs were removed from the internal, 6.1 (\pm 2.4) from the external iliac artery and 9.4 (\pm 2.5) from the obturator fossa. A total of 98 patients (11.9%) had LN metastases. Among them, 46 (46.9%) had one, 19 (19.4%) had two and 33 (33.7%) had more than two positive LNs. Stratified for anatomical zones, 64 (65.3%) had metastases along the external, 51 (52.0%) along the internal iliac artery and 58 (59.2%) in the obturator fossa. Forty-two men (42.9%) had metastases in more than one region. More men had nodal metastases on the right (n = 40, 40.8%) than on the left side (n = 20, 20.4%). This difference was also detected counting positive LNs (160 right vs. 97 left). Bilateral metastases were detected in 38 men (38.8%). If the internal iliacal nodes would not have been resected, 15 patients (15.3%) would have been understaged as pN0 and a total of 82 positive LNs (30.6%) would have been left in situ. The rate of clinically significant lymphoceles was low but higher than in patients not undergoing RALePLND (1.7% vs. 0.7%).

Conclusion

RALePLND with a high LN yield is feasible and leads to a low rate of clinically significant lymphoceles. The inclusion of the internal iliac zones leads to detection and resection of a significant number of positive LNs.

M19: 68Ga-PSMA-11 PET/MRI for the detection of recurrent prostate cancer following radical prostatectomy at low PSA values ≤ 0.5 ng/ml

B. Kranzbühler, J. Müller, A. S. Becker, H. Garcia Schüler, U. Mühlematter, M. Guckenberger, P.A. Kaufmann, D. Eberli, I. A. Burger
Zürich (CH)

Purpose

A first analysis of simultaneous 68Ga-PSMA-11 PET/MRI showed some improvement in the detection of recurrent disease at low PSA values compared to the already high detection rate of 68Ga-PSMA-11 PET/CT for low serum prostate specific antigen (PSA) levels between 0.2 - 0.5 ng/ml. We therefore focused on all patients with early biochemical recurrence (EBR) and PSA values ≤ 0.5 ng/ml to assess the detection rate for 68Ga-PSMA-11 PET/MRI and the effect on salvage radiotherapy.

Methods

We retrospectively analyzed a cohort of 66 consecutive patients who underwent a 68Ga-PSMA-11 PET/MRI for EBR with a PSA value ≤ 0.5 ng/ml in our institution between April 2016 and November 2017. Median PSA level was 0.23 ng/ml (interquartile range: 0.22 ng/ml). Detection of PSMA-positive lesions within the prostate fossa, local and distant lymph nodes, bones or visceral organs was recorded. All scans with 68Ga-PSMA-11 PET/MRI positive lesions were assessed by a radiation oncologist, to judge if the radiotherapy plan would be adjusted according to the 68Ga-PSMA-11 PET/MRI results.

Results

Overall, in 36 of 66 patients (54.5%) PSMA-positive lesions were detected; in 26 of 40 (65%) patients with a PSA between 0.2 - 0.5 ng/ml and in 10 of 26 (38.5%) patients with a PSA < 0.2 ng/ml. Overall 4 of the 66 patients were scanned with rising PSA levels after previous ADT. In all of those patients PSMA-positive lesions were detected. Even at those low PSA values, only 8 of 66 (14%) of patients had local recurrence only. In 23 patient's lymph nodes and in 5 patients bone metastases were detected on 68Ga-PSMA-11 PET/MRI. The radiotherapy plan would have been changed according to the disease distribution in 26 of 66 (39%) patients.

Conclusions

Our data confirm that 68Ga-PSMA-11 PET/MRI has a high detection rate for recurrent prostate cancer even at low PSA levels ≤ 0.5 ng/ml and shows that even at very low PSA values the radiotherapy would have been adapted based on the PSMA results in nearly 40% of the patients.

M20: Extended pelvic lymph node dissection vs. no pelvic lymph node dissection at radical prostatectomy for intermediate- and high-risk prostate cancer: A randomized multicenter international trial – SAKK 09/18

C. Rentsch, S. Hayoz, R. Cathomas, G. Thalmann
Basel (CH), Bern (CH), Chur (CH)

While lymph node dissection (LND) during radical prostatectomy (RPE) improves staging accuracy at the costs of increased morbidity, it is unknown whether it has a therapeutic benefit resulting in improved survival.

Patients and Methods

Since 2012 the SAKK GU group has been working on a prospective trial design with the goal to evaluate the potential therapeutic benefit of extended LND (eLND) at RPE in cN0 patients diagnosed with intermediate- (risk of lymph node involvement >7%) and high-risk prostate cancer (PSA < 50ng/ml).

Results

A prospective phase III trial design with a 1:1 randomisation between no LND versus eLND was chosen. The primary endpoint of the trial was defined as PSA recurrence-free survival after RPE with an estimated hazard ratio of 0.7 in favour of eLND. The sample size calculation indicated that 854 patients should be randomised in order to demonstrate this effect (alpha 5%, power 80%). After a run-in phase, 250 patients/year must be recruited into the trial, resulting in a recruitment period of 3.8 years. Analysis of the primary endpoint is anticipated 7.2 years after trial start. Recruitment of the first patient is anticipated in Q2/3 2019.

To ensure adherence to eLND, all surgeons have to agree on the removal of the defined eLND template. Intraoperative photo documentation of the surgical field following eLND is required for every patient. Independent assessment of the quality of eLND and a basic SOP for the examination of LNs by pathologists will reduce variability in LND and LN assessment to a minimum.

In May 2018, Rising Tide Foundation and SAKK decided to fund the trial and to start protocol development.

Conclusions

The SAKK GU group together with the SGU are finally in the lead to conduct this important trial. The results are anticipated to answer a highly relevant clinical question.

M21: Utility of intraoperative contrast-enhanced ultrasound versus early mpMRI in detecting residual disease after focal HIFU for localized prostate cancer

F. Bacchetta, M. Martins, S. Regusci, M. Valerio, I. Lucca
Lutry (CH), Genève (CH), Lausanne (CH)

Background and objectives

High intensity focused ultrasound (HIFU) is an emerging treatment for selected men with localized prostate cancer. A limitation of HIFU is the absence of a reliable tool to measure treatment effect during the delivery of energy. Contrast-enhanced ultrasound (CEUS) is a promising modality for assessing the extent and boundaries of tissue ablation. However, the utility of intraoperative CEUS has not been evaluated. The aim of this study is to assess the value of CEUS immediately after focal HIFU, and to determine whether it could replace early mpMRI.

Materials and Methods

Retrospective analysis of a prospectively maintained registry including consecutive men undergoing focal HIFU (Focal One®). Candidates for HIFU were treatment naïve men with ≥ 10 years life expectancy, PSA ≤ 20 ng/ml, TNM stage $\leq T2c N0 M0$ and MR visible lesion concordant with clinically significant prostate cancer on biopsy. CEUS evaluation was done immediately at the end of the procedure. When estimated necessary, a second session of HIFU was performed, followed by another CEUS evaluation. To test our hypothesis, first the results of the CEUS were compared to the results of early mpMRI to rule out clinically significant cancer at control biopsy (negative predictive value, NPV). Afterwards, the concordance between the two tests was measured using the Cohen's kappa. Finally, the best model including PSA, PSA density at 6 months and late mpMRI was calculated with CEUS or with mpMRI to determine their respective added value.

Results

Of 66 men who underwent HIFU, 35 were included. Further ablation was delivered intraoperatively in 14 men (40%) in light of CEUS' interpretation. Bifocal treatment was performed in two men, increasing the number of treated lesions to 37. The positive biopsy rate for clinically significant cancer in the treated zones after a median of 13.6 months was 30% (11/37). NPV for CEUS and early mpMRI were, respectively, 68.2% and 70.8%. Concordance between CEUS and mpMRI was significant with a 64.9% agreement ($p = 0.015$). When comparing the best model to rule out clinically significant cancer, the model with CEUS showed significantly higher accuracy with an area under the curve of 0.826 compared to the model with early mpMRI with an area under the curve of 0.744.

Conclusion

CEUS has a higher added value compared to early mpMRI in ruling out clinically significant cancer after focal HIFU treatment.

M22: A higher treatment dose in focal HIFU results in fewer treatment failures of prostate cancer

PM Huber, N Afzal, M Arya, S Boxler, S Charman, D Tim, M Emberton, S. Guillaumier, R. J. Hindley, L. Leemann, H. Lewi, N. McCartan, C. M. Moore, CM Moore, R Nigam, C Ogden, R Persad, K Shah, G. N. Thalmann, J. Virdi, M. Winkler, H. U. Ahmed

Bern (CH), Dorset (UK), London (UK), Southampton (UK), Basingstoke (UK), Zürich (CH), Chelmsford (UK), Surrey (UK), Bristol (UK), Harlow (UK)

Objective

To determine if delivering greater amounts of focused ultrasound heat energy when treating non-metastatic prostate cancer using focal HIFU leads to lower recurrence rates.

Material and methods

Based on the prospectively maintained HIFU (Sonablate 500) registry cases were identified who underwent a focal HIFU (03/2007 to 12/2016) with standard HIFU delivery or dose-escalated HIFU. In-field treatment failure was defined by any secondary treatment, metastasis without further treatment, tumour recurrence with Gleason score ≥ 7 on prostate biopsy, or death from prostate cancer. 131 cases were treated with two, and 59 cases with three ablative zones respectively and could be used for a matched-pair analysis. Two major criteria were used for mandatory exact matching (baseline Gleason score and mpMRI-defined tumour volume). Other criteria (biopsy maximum cancer core length, duration of clinical follow-up, and time to recurrence) were also used and nearest matching accepted. 37 matched pairs were identified.

Results

In the standard HIFU and dose-escalated groups, respectively, PSA (IQR) was 7.18ng/ml (4.6-10.3) and 6.7ng/ml (5.37-8.5), mean prostate volume (range) was 46ml (17-103) and 52ml (19-121), mean tumour volume (range) in both groups were identical at 0.6ml (0.05-2.5). For the two groups, respectively, median biopsy results (IQR) for number of positive cores, MCCL (in cm), and maximal percentage of core were 6 (3-8) vs. 4 (3-5), 6 (4-9) vs. 5 (4-8), and 65 (40-80) vs. 50 (30-67). Gleason score (% of cases) was 3 + 3 = 6 in 2/37 (5%), 3 + 4 in 31/37 (84%), and 4 + 3 in 4/37 (11%). Median time elapsed until in-field failure was proven (IQR) was 13 month (11.5-24) compared to 11.5 month (9.5-13). Overall, in-field recurrence (%) was found in 11/37 (29.7%) in standard HIFU and 6/37 (16.2%) in dose-escalated HIFU ($p=0.002$).

Conclusion

Significantly higher rate of in-field treatment failure in focal HIFU using the standard HIFU protocol on the Sonablate 500 compared to a dose-escalation by delivering more energy.

M23: Influence of acetylsalicylic acid (ASA) intake on psa values, risk of prostate cancer development and survival in a prospective screening trial cohort (ERSPC Aarau)

L. Gstrein, A. Mortezaei, C. Millan, S. Wyler, L. Manka, A. Huber, R. Grobholz, F. Recker, T. Sulser, D. Eberli, M. Kwiatkowski
Schlieren (CH), Zürich (CH), Aarau (CH), Braunschweig (DE)

Introduction and Objectives

Chemoprevention of prostate cancer (PCa) has been extensively investigated in the last decades. So far only 5-alpha-reductase-inhibitors (5-ARI) are supported by clinical evidence to have chemopreventive effect on PCa incidence, hence unclear in terms of prevention of aggressive PCa. Evidence for an effect of ASA on PCa is conflicting. The exact interaction pathways between ASA and carcinogenesis are still to be established. The aim of the study was to analyze the influence of ASA intake on PSA values and PCa development.

Methods

A population-based analysis including 4314 men from the European Randomized Study of Screening for Prostate Cancer (ERSPC) database was conducted. Data about drug intake, age, family history and symptoms was obtained by a self-administered questionnaire. A transrectal ultrasound guided prostate biopsy was performed in men with a PSA-level > 3 ng/ml. Tumor stage and grade were registered; incidence and mortality data were obtained through registry linkages. PCa incidence and grade, total PSA value, free-to-total PSA and overall survival were compared between ASA users and non-users, respectively.

Results

Median follow-up time was 9.6 years. In all, n = 789 (18.3%) men used aspirin [ASA+]. Although overall PCa incidence was significantly lower among aspirin users ([ASA+] 54 (6.8%) vs. [ASA-] 338 (9.6%), p 0.02), the multivariate cox-regression analysis did not show the decreased risk to be diagnosed with PCa ([ASA+] hazard ratio (HR) 0.78, 95% confidence interval (CI) 0.57 to 1.08) to be statistically significant. Total PSA values were significantly lower in aspirin users for both baseline (1.6 vs. 1.8 ng/ml, p 0.0072) and follow-up-visits after four years (1.75 vs. 2.1 ng/ml, p < 0.001). Multivariate cox-regression analysis predicted significantly higher overall mortality among ASA users compared to non-users ([ASA+] HR 1.58, 95% CI 1.17 to 2.13).

Conclusions

In our study population we could demonstrate that ASA intake did not alter overall PCa risk in a statistically significant manner. However, the finding of persistently lower PSA values in ASA users is of potential clinical importance. It suggests that PSA cutoff values should be lowered in ASA users otherwise it may introduce potential bias towards delayed PCa detection in this group, especially outside a screening setting. On the other hand, lower PSA values may suggest a protective effect of ASA on PCa development.

M24: Evaluation de la résistance aux fluoroquinolones parmi les frottis avant des biopsies de la prostate

A. Ferreira Reis, S. Harbarth, C. Iselin, G. Wirth
Genève (CH)

Les enterobactéries résistantes aux fluoroquinolones (FQ) sont fréquemment à l'origine de complications infectieuses après des biopsies de la prostate transrectales (TRUSPB). Notre objectif est d'étudier la prévalence du portage digestif de bactéries résistantes aux FQ chez des patients en vue de biopsies transrectales et d'évaluer l'intérêt de la prophylaxie ciblée selon la culture rectale sur le taux de complications infectieuses.

Analyse des données de tous les patients programmés à des biopsies transrectales de janvier de 2017 à avril 2018 dans notre institution. Une culture d'urine et un frottis anal recherchant des germes FQ-résistant sont effectués avant le geste. Des analyses descriptives sous forme de tables de fréquence (N, %) sont utilisées pour les variables discrètes.

104 patients âgés entre 48 et 83 ans (66 +/- 7,7 ans) ont été inclus. 23 cultures d'urine (22%) sont revenues positives pour des E. coli (N=7, 30%), MSSA (N=5, 22%) et Enterococcus faecalis (N=4, 17%). Parmi les uricures 7 germes (30%) étaient résistants aux FQ (particulièrement l'E.coli et l'Enterococcus faecalis). 10 patients (9,6%) étaient porteurs de SUAD, dont 9 étaient colonisés par E. coli (N=2, 20%), MSSA (N=4, 40%), Pseudomonas aeruginosa (N=2, 20%), Enterobacter cloacae (N=1, 10%) et Enterococcus Faecalis (N=1, 10%). 19 frottis anaux (18,3%) sont devenus positifs pour des E.coli (N=6, 84%), Morganella Morganii (N=1, 5%) et Stenotrophomonas maltophilia (N=2, 11%). Les biopsies des patients porteurs de germes FQ-résistant ont été couvertes par une dose unique d'amikacine IV ou d'ertapenem IV. Tous les patients porteurs de SUAD ont bénéficié d'antibiothérapie dirigée et aucun n'a pas présenté de complications post-geste. 8 patients (7,7%) ont présenté des prostatites post-biopsiques à E.coli ; les 8 ont eu bénéficié d'une prophylaxie par de la ciprofloxacine. Aucun patient ne présentait pas des germe FQ-résistant.

L'antibiothérapie ciblée selon frotti anal ne semble pas diminuer le taux de complications infectieuses post-biopsiques (7,7% actuel vs 6,5% de mai de 2009 à décembre de 2013, avant l'introduction du frotti anal). Une mauvaise compliance ainsi que des traitements précédents par des FQ sont les principaux facteurs de risque pour le développement des germes FQ-résistants. Ainsi il nous semble qu'un changement concernant l'antibiotique de choix et une simplification du schéma de prophylaxie pourraient améliorer le taux de complications après TRUSPB.

M25: The role of salvage lymphadenectomy in GA-PSMA PET positive nodal recurrence after radical prostatectomy

T. Gross, P. Dundee, A.J. Costello
Bern (CH), Melbourne (AU)

Aims

To assess the clinical impact of Ga-PSMA guided robot assisted salvage lymphadenectomy for nodal recurrence after robot assisted radical prostatectomy.

Methods

Seventeen patients underwent robot assisted salvage lymphadenectomy for GA-PSMA PET positive nodal recurrence only, one patient was excluded from analysis due to loss of follow up. None of the patients had immediate androgen deprivation therapy. Biochemical recurrence as well as time to initiation of alternative salvage treatment was assessed. At the time of robot assisted radical prostatectomy none of the patients underwent standardized lymphadenectomy. In case of lack of PSA response after salvage lymphadenectomy patients underwent repeat imaging to assess if initial PSMA-PET positive nodes were effectively removed. After surgery patients underwent 3 monthly PSA controls.

Results

The median PSA pre-operatively was 1.6ng/mL (range 0.3 – 5.5ng/mL) with a median PSA doubling time of 4.85 months (IQR 3.55 - 7.2 months). Median time from radical prostatectomy to salvage lymphadenectomy was 4.2 years (range 0.5 – 13.3 yrs). Median follow-up after salvage lymphadenectomy was 27 months (8 – 36). Median nodal yield was 20 per patient (range 7 – 42) with a median histopathological positive nodal count of 2 per patient (0 – 12). Only 2/16 patients had initially a complete PSA response, 5/16 patients had a progressing initial PSA after salvage lymphadenectomy. 10/16 patients had a drop in PSA after salvage lymphadenectomy, however 2/10 patients underwent salvage radiation due to persisting PSMA positive lymph nodes missed during surgery before repeat PSA. All patients had a PSA progress during follow-up. 10/17 underwent further salvage treatment (e.g. salvage radiotherapy, androgen deprivation therapy) after a median time of 0 months after salvage lymph node dissection.

Conclusions

Salvage lymphadenectomy after radical prostatectomy without pelvic lymphadenectomy is likely to fail due to more widespread not detected metastatic disease on PSMA PET re-staging. Time to ADT might be prolonged however to assess the impact of salvage lymph node dissection on survival needs further follow-up.

M26: GA-PSMA PET for prostate cancer: hype or not?

T. Gross, P. Dundee, D. Moran, A.J. Costello
Bern (CH), Melbourne (AU)

Aims

To assess the performance of Ga-PSMA PET in patients undergoing salvage lymphadenectomy after primary curative intended radical prostatectomy without pelvic lymph node dissection.

Methods

Seventeen patients had Ga-PSMA PET positive lymph nodes and underwent robot assisted salvage lymph node dissection after radical prostatectomy. Lymph nodes were sent according to 13 predefined landing sites. The performance of the Ga-PSMA Pet was assessed using sensitivity, specificity, positive predictive value and negative predictive value at a patient level and at an individual lesion basis.

Results

The median PSA pre-operatively was 1.6ng/mL (IQR 0.81 - 2.70ng/mL) with a median PSA doubling time of 4.85 months (IQR 3.55 - 7.2 months). A total of 34 positive nodes were detected on Ga-PSMA PET with a median of 2 nodes per patient (IQR 1 - 3 nodes per patient). The median time from radical prostatectomy to salvage node dissection was 4.6 years. A total of 356 nodes were removed with a median node count of 20 nodes per patient (IQR 14 - 25). Sixty six nodes were pathologically disease positive from 14 patients, with a median of 2 positive nodes per patient (IQR 1 - 6). The average node deposit was 7.92mm (range 0.7 - 28mm). Three patients had no pathologically detectable disease; two of these patients had 1 Ga-PSMA PET avid node and one patient had 2 Ga-PMSA PET avid nodes. The median size of Ga-PSMA PET positive node deposits was 10mm in comparison to 4mm for Ga-PSMA PET negative node deposits ($p=0.0026$). The smallest node deposit detected on Ga-PSMA PET was 4.5mm. On a per patient basis the positive predictive value was 82%. Sensitivity, specificity and negative predictive value were not able to be calculated as all patients had disease recurrence with a detectable PSA.

On a "per lesion" basis, the sensitivity, specificity, positive predictive value and negative predictive value were 36.7%, 96.9%, 73.5% and 86.7%, respectively.

Conclusions

Although Ga-PSMA PET has shown superior diagnostic accuracy than other imaging modalities in prostate cancer, the presented results indicate that sensitivity is not yet sufficient in the salvage setting to detect all sites of metastasis. Therefore, PET positive metastasis targeted treatment is likely to fail given the likely concomitant imaging negative more widespread disease.

Nicht moderierte Poster | Posters non-modérés

P58 Uretère rétrocave : décroisement urétéral laparoscopique sous assistance robotisée (rapport de cas)

M. Mengin, C. Iselin, J. Klein
Genève (CH)

Introduction

Les malformations de l'appareil urinaire sont multiples. Souvent ces anomalies entraînent des obstructions chroniques de la voie urinaire haute avec comme conséquence la formation de calculs de stase. La duplication urétérale est l'anomalie la plus fréquente touchant 1% de la population. Nous rapportons la prise en charge chirurgicale laparoscopique d'une anomalie de trajet avec un passage urétéral rétrocave (prévalence 0.07%) associée à une importante dilatation pyélocalicielle et des calculs de stase.

Matériel et méthodes

Patiente de 25 ans présentant des douleurs du flanc droit. Le bilan radiologique met en évidence un trajet urétéral rétrocave provoquant une importante dilatation pyélocalicielle d'amont associée à de multiples calculs de stase. L'indication à un traitement en 2 temps est posé, à savoir un décroisement urétéral laparoscopique sous assistance robotisée avec urétéroplastie, suivi d'une urétérorénoscopie souple afin d'extraire les calculs de stase.

Résultats

Disparition complète des douleurs avec une voie urinaire bien ouverte à 6 semaines postopératoire, visualisée lors de l'urétérorénoscopie.

Conclusion

Le trajet urétéral rétrocave est une malformation rare qui peut être prise en charge par abord laparoscopique. Dans ce cas, nous avons pu confirmer par urétérorénoscopie la bonne ouverture urétérale post urétéroplastie laparoscopique.

P59 Case report: Partial priapism as a clinical manifestation of metastatic primary urethral cancer

J. Stepanow, W. Harms, L. Bubendorf, K. Bausch, T. Zellweger
Liestal (CH), Basel (CH)

Abstract

Partial priapism is a rare condition primarily associated with non-oncological, hematological or oncological diseases.

We present the case of an 83-year-old male with a thrombosis of the right corpus cavernosus and a history of recurrent urethral strictures. Further investigation revealed associated primary urothelial cancer of the proximal urethra with extended osteolytic metastasis of the left pelvic bone. Palliative management with a radiotherapy and NSAR showed good response with regression of the metastatic extension and the thrombosis.

Background

Segmental thrombosis of the corpus cavernosus, also called partial priapism, is a rare urological symptom associated with cycling, drug abuse, penile trauma, hematological and oncological diseases. Primary urethral cancer is rare being accounted with an incidence of 1,1 cases per one million inhabitants. Risk factors are male sex, strictures, intermittent catheterization, urethroplasty, perineal urethrostomy and chronic inflammation with HPV 16 (4-9). Histopathological analysis in males predominantly demonstrates urothelial carcinoma (78%), followed by squamous cell carcinoma 12% and adenocarcinoma 5%.

Case report

We present the case of an 83-year-old male who was treated with urethral dilations due to urethral strictures with a manifestation of a painless partial priapism. Medical history showed temporary perineal urethrostomy due to a case of urethritis 45 years earlier. Diagnostic evaluation exhibited an arge osteolytic metastasis of the left pelvis. Bone and urethral biopsies confirmed a primary urothelial cell carcinoma of the proximal urethra with squamous cell differentiation. Conservative treatment with NSAR caused remission of the priapism. Palliative radiotherapy with 36 Gy, focused on the bone metastasis, showed good response with a complete regression of the metastatic mass. In the follow up of 15 months, clinical controls and CT scans showed no signs of metastatic recurrence.

Discussion

To our knowledge, this is the third case report of priapism associated with primary urethral cancer. In metastatic disease and elderly patients, palliative radiotherapy seems to be a valuable therapeutic option for primary urethral carcinoma.

P60 Urethral Catheterisation Device: Sichere transurethrale Katheterisierung für schwierige Fälle ohne den Urologen

S. Flückiger, D. Mitteldorf, R. Baltensberger, M. Ganter, H. John
Winterthur (CH)

Hintergrund & Ziele

Erschwerte transurethrale Katheter einlagen können für den Patienten schmerzhaft und Komplikationen assoziiert sein. Für den Urologen bedeutet dies Zeitaufwand und teils hoher Materialbedarf – und dies zu jeder Tages- und Nachtzeit. Damit verbunden sind auch beträchtliche Kosten – vor allem in der Notfallsituation. Aus diesem Grund haben wir das Urethral Catheterisation Device (UCD®) an unserem Spital fächerübergreifend eingeführt – ein Device, das für die Anwendung durch das Pflegepersonal ohne Urologen konzipiert wurde.

Material & Methoden

Beim UCD handelt es sich um einen Ch. 16 Silikonkatheter mit integriertem hydrophilem Führungsdraht. Das Device ist konzipiert für die Anwendung durch das Pflege- und paramedizinische Personal mit dem Ziel, Harnröhrenverletzung bei der Katheterisierung zu verhindern und auch notfallmässige urologische Konsilien zu reduzieren. Das Device und seine Anwendung wurden erst systematisch in der Notfallstation und Operationsabteilungen geschult und dann die Anwendungsbeobachtungen prospektiv mit Fragebogen erfasst. Dabei wurde nach erfolgreicher Durchführung, Schmerzen bei der Einlage, sowie nach Blutabgang urethral nach der Anwendung gefragt und ob das Device wiederverwendet würde.

Resulate

Bis anhin haben wir das UCD bei 21 Patienten in der Notfallstation und Operationstrakt verwendet. Bei 14 /21 (66 %) Patienten war bereits der erste Versuch mit dem UCD erfolgreich. Bei den restlichen 7/21 (33 %) Patienten waren lediglich bei 4/21 (19 %) Patienten die Katheter Einlage nicht möglich. Alle Benutzer würden das UCD jedoch wieder verwenden. Nur 3 Patienten empfanden die Einlage als schmerzhaft, bei 4 Patienten kam es zu Blutabgang urethral. Die Kosten des UCD belaufen sich auf ca. 300 sFr, im Vergleich zu einem urologischen Konsil mit zystoskopischer Kathetereinlage von ca. 685 sFr.

Schlussfolgerung

Das Urethral Catherisation Device für Pflege- und paramedizinisches Personal ermöglicht eine transurthrale Kathetereinlag auch in erschwerten Situationen sicher und oft erfolgreich. Damit werden potentielle Harnröhrenverletzungen verhindert. Trotz beträchtlichem Preis ist das Device im Vergleich mit notfallmässigen urologischen Konsil vertretbar und spart Zeit im klinischen Alltag.

P61 Funktionelles Outcome und Lebensqualität nach dorsaler Mundschleimhautaugmentation bei penobulbärer Urethrastrikture

B. Brey, J.Avarappattu, G.Frölicher, Ch. Padevit, M.Randazzo, H.John
Winterthur (CH)

Ziel

Die buccale Schleimhautaugmentation in dorsaler Onlay-Technik findet zunehmend Anwendung bei penobulbären Urethrastrikturen. Die vorliegende Arbeit untersucht die funktionellen Ergebnisse sowie die Lebensqualität von Patienten nach buccaler dorsaler Schleimhauttransplantation, welche in unserer Klinik seit 2014 durchgeführt wird.

Methoden

Von 2014 bis 2017 wurde alle männlichen Patienten des Kantonsspital Winterthur nach dorsaler Urethraplastik mittels buccalem Schleimhauttransplantat untersucht. Neben einer Restharnmessung und der Uroflowmetrie wurden standardisiertem Fragebogen (IIEF, IPSS, EORTC QLQ-C30) angewendet. Die Daten wurden mit deskriptiver Statistik (IBM SPSS Statistics Version 24) ausgewertet.

Resultate

Insgesamt wurden 28 Patienten in unsere Studie eingeschlossen. Erfreulicherweise entwickelte sich innerhalb der medianen Follow-up Zeit von 29 (21-39) Monaten kein symptomatisches Rezidiv (0/28, 0%). 2/28 (7.1%) Patienten beklagten eine leichte Reduktion der erektilen Funktion, 3/28 (10.7%) berichteten postmitktionelles Nachträufeln. Enoral lagen bei 3/28 (10.7%) Patienten Sensibilitätsstörung vor und bei 2/28 Patienten (7.1%) entwickelte sich eine Peniskrümmung. Der QLQ-C30 zeigt mit durchschnittlich 83.3% (0%-100%) postoperativ eine gute Lebensqualität.

Schlussfolgerung

Die Mundschleimhautaugmentation in dorsaler onlay-Technik ist eine effiziente Methode, penobulbäre Harnröhrenstrikturen mit niedriger Rezidivrate zu korrigieren. Selten scheint die Technik eine leichtgradige erektile Dysfunktion auszulösen. Die Entwicklung einer enoralen meist regredienten Sensibilitätsstörung durch Kompromittierung oberflächlicher Äste des n. lingualis lässt sich nicht immer verhindern, ist aber bei einer geeigneten Transplantatentnahme selten.

P62 Amyloidose der Harnblase als seltene Differentialdiagnose eines Blasentumors – ein Fallbericht

P. Viktorin, D. Abt, O. Köhle, P. Betschart, D. Engeler, H. Schmid
Zürich (CH), St. Gallen (CH)

Einleitung

Amyloidose ist die extrazelluläre Ablagerung von Amyloid-Fibrillen im Gewebe. Die primäre Amyloidose der Harnblase ist eine Rarität mit rund 200 in der Literatur beschriebenen Fällen. Die Ursache für eine Amyloidose ist nicht geklärt. Chronische Entzündungen der Mucosa und Submucosa werden diskutiert. Eine Amyloidose der Harnblase präsentiert sich zumeist in Form einer schmerzlosen Makrohämaturie, LUTS und als Zufallsbefund bei Bildgebungen.

Case Report

Bei einer 73-jährigen Patientin bei Makrohämaturie eine flexible Zystoskopie durchgeführt, bei welcher sich ein breitbasiger, teils solid, teils papillär imponierender Tumor zeigte. Eine während der Zystoskopie entnommene Spülzytologie zeigte keine karzinomverdächtigen Zellen. Nach einer im Vorfeld durchgeführten Computertomographie des Abdomens mit Urographie bestand kein Tumorverdacht im oberen Harntrakt. Einzig auffällig stellte sich eine inguinale Lymphadenopathie dar. Im Anschluss wurde eine transurethrale Resektion des Tumors durchgeführt mit unauffälligem intra- und postoperativem Verlauf. In der histologischen Untersuchung zeigten sich überraschenderweise Kongorot-positive Amyloidablagerungen innerhalb von glatten Muskulaturfragmenten im Bereich der urothelialen Schleimhaut mit ausgedehnter umgebender eosinophiler granulozytenreicher Entzündung ohne Malignitätsnachweis. Die Patientin hat bis auf einen Status nach Lungenembolie vor vielen Jahren sowie eine chronische Niereninsuffizienz eine blande Anamnese.

Schlussfolgerung

Liegt bereits bei der Entdeckung der Tumormasse in der Blase ein Verdacht auf eine Amyloidose vor, so sollte zuerst eine systemische Amyloidose ausgeschlossen werden. Diese zeigt sich durch das Vorliegen abnormaler Proteine, beispielsweise monoklonaler Leichtketten, im Serum und Urin (Immunfixationselektrophorese) und kann durch eine Biopsie eines asymptomatischen Organs (z.B. Peritoneum) bestätigt werden. Beim Vorliegen einer primären Amyloidose der Blase ist eine transurethrale Resektion des Befundes indiziert zur Verhinderung einer Harnabfluss- oder Blasenentleerungsstörung durch das fortschreitende Wachstum. Weitere in der Literatur diskutierte Therapiemöglichkeiten sind die Instillation von Dimethylsulfoxid oder die Einnahme von Colchicin wie auch eine Zystektomie. Durch das rare Vorliegen der Erkrankung liegen jedoch keine klaren Empfehlungen oder Guidelines vor zur Therapie und Follow up.

P63 Plattenepitheliale Blasenschleimhautendifferenzierung bei chronisch rezidivierender Zystitis-eine Fallvorstellung

M. Wiesmayr, A. Sauck, S. Preusser, H. John
Zürich (CH), Winterthur (CH), Wetzikon (CH)

Rezidivierende Harnwegsinfektionen (HWI) erhöhen das Risiko ein Plattenepithelkarzinom (2-5% aller Harnblasenkarzinome) [1,2] zu entwickeln. Aufgrund fehlender Therapiealternativen, insbesondere der nicht-Bilharziose assoziierten Plattenepithelkarzinome, ist die Zystektomie noch immer die erste Therapieempfehlung [3]. Ein Cis des Harnblasenurothels wird in die high- risk Kategorie eingegliedert [1]. Die BCG- Instillation oder Zystektomie ist Therapie der Wahl. Es existieren wenige Daten zu Therapie, Prognose und Nachsorge bei Nachweis eines Carcinoma in situ ausgehend von einem Plattenepithel der Harnblase. Die wenigen vorhandenen Daten, beschreiben eine häufige Assoziation eines pTis-Plattenepithels mit einem invasiven Plattenepithelkarzinom [4].

Eine 37-jährige Frau wurde mit rezidivierenden Pyelonephritiden rechts bei St. Nach Ureterozystoneostomie links vorstellig. In der Diagnostik war eine unvollständige Blasenentleerung mit Restharmengen bis 400ml auffallend. Zystoskopisch war, unter Aussparung von Blasenhal und Trigonum, die gesamte Blase von einem dicken, nicht wegspülbaren `Film` überzogen. Die Spülzytologie ergab den Nachweis einer chronischen Entzündung ohne atypische Zellen. Die Quadrantenbiopsie zeigte schwere dysplastische, verhornende Plattenepithelien ohne Entzündung mit einem pTis (Plattenepithel). Computertomographisch wurde ein singulärer pathologischer Lymphknoten rechts iliakal identifiziert.

Auf Grund der high-grade Situation, des fraglich befallenen Lymphknoten rechts iliakal sowie des Alters der Patientin wurde im interdisziplinären Tumorboard eine Zystektomie empfohlen. Es erfolgte die roboterassistierte Zystektomie mit extendierter Beckenlymphadenektomie und intrakorporaler Anlage einer othotopen Ileum-Ersatzblase unter Schonung des Uterus, der Vagina und der Adnexe. Die Blase war überzogen mit einem braunen übelriechenden Belag, histologisch war die Transformation zum Plattenepithelkarzinom noch nicht erfolgt. Postoperativ zeigte sich komplikationsloser Verlauf mit einer Hospitalisation von 7 Tagen ohne Rehabilitationsaufenthalt.

Chronische rezidivierende oder persistierende Urogenitalinfekte sollten abgeklärt und verlaufskontrolliert werden. Das Tis Plattenepithel der Harnblase stellt eine ernste Komplikation rezidivierender Zystitiden dar. Ein Algorithmus, wie häufig Patienten mit bekannten chronischen HWI bezüglich einer möglichen Entstehung eines Plattenepithelkarzinoms nachkontrolliert werden sollen, ist nicht bekannt.

P64 Emphysematous cystitis: a gas-forming infection affecting not only diabetic women

R. Roth, J. Ebbing, G. Bonkat, H. H. Seifert, C Wetterauer
Basel (CH)

Background & Aims

Emphysematous cystitis (EC) is a relatively rare urological disease and occurs mainly in elderly diabetic women. This gas-forming infection is characterized by the presence of gas in the bladder wall and/or lumen. *Escherichia coli* and *Klebsiella pneumoniae* are the most commonly isolated microorganisms. Computer tomography (CT), cystoscopy, plain films of the abdomen and bladder ultrasonography permit diagnosis. Therapy comprises antimicrobial treatment (AT) and bladder drainage. We report about 2 atypical cases of this rare but potentially life threatening disease.

Results

Case 1: A 78-year old non-diabetic gentleman, initially treated for NSTEMI, received bladder drainage and empiric broadband AT with ceftriaxone for an incidentally diagnosed urinary tract infection. A few hours later he developed a septic shock and acute renal failure. He was referred to intensive care unit (ICU) for hemodynamic stabilization and supportive intensive care. Upon identification of *Escherichia coli* and *Klebsiella pneumoniae* in urine culture, AT was adapted to piperacillin/tazobactam and clarithromycin. Abdominal CT showed EC accompanied by local peritonitis and sub-ileus. After stabilization, the patient was referred to a regional hospital. AT was continued for a total of 19 days and the patient recovered completely.

Case 2: A 79-year old non-diabetic lady undergoing rehabilitation following a sacrum fracture developed a subileal pathology. Abdominal CT showed a sigmoidal volvulus and gas in the bladder wall. No signs of urinary tract infection were present in urine status performed by flow cytometry. The volvulus was treated appropriately. Bladder drainage was placed and empiric AT with ceftriaxone was initiated. Upon identification of pansensitive *Escherichia coli* in urine culture, AT was adjusted to cefpodoxime. The infection was successfully controlled after a total of 19 days of AT.

Conclusions

Despite the relatively low mortality of EC, a high degree of suspicion must be maintained to facilitate successful and conservative management. A high degree of suspicion should be maintained not only with female diabetic patients but as well at-risk patients for complicated UTIs that do not respond to standard therapy.

P65 Single-system orthotopic Ureterocele with calculus masquerading as a bladder tumour – A case report

F. Löcherbach, P. Wolfsgruber, S. Wyler, M. Kwiatkowski
Schlieren (CH), Aarau (CH)

Introduction

Ureteroceles are amongst the most-common urinary tract anomalies in humans. Their diagnosis relies largely on typical clinical and radiological findings such as the cobra-head-sign or the changing size of the ureterocele during sonographic evaluation as well as the direct proof of the ureterocele in cystoscopy. Still those can fail, especially if there are complicating additional issues such as a calculus within the ureterocele, and therefore can lead each urological practitioner astray. Such a rare case we present hereby.

Case Report

A 59-year old Patient was transferred to us by an outward Radiology after diagnosing a calcified right-sided bladder tumour with a consecutive ureteral obstruction and a therefore massively dilated right-sided distal ureter in a CT-scan. The patient himself initially consulted his primary physician due to right-sided lower abdominal pain. Further investigation by cystoscopy within our clinic confirmed that the tumour was highly suspicious of being a urothelial carcinoma. Therefore a transurethral resection of the tumour was planned. Intraoperatively, after beginning with the transurethral resection, the tumour revealed itself to be an intravesically prolapsed ureterocele containing a calculus. The calculus was therefore extracted under slight bipolar resection of the ureterocele-wall as well as lithotripsy and finally a Double-J-Stent was implanted. In the postoperative follow-up period the Double-J-Stent was removed 4 weeks after surgery and sonographic as well as CT-based controls showed unsuspecting renal drainage on the right side with a residual dilatation of the distal right ureter and pelvis. Histological analyses of the resected tissue revealed no malignancy and the analysis of the extracted calculus showed it to be 100% Calcium-Oxalate-Monohydrate (Whewellit).

Conclusion

This case shows that diagnostic findings which seem to be largely obvious, such as the cystoscopic diagnosis of an exophytic bladder tumour, can lead even an experienced urologic practitioner to a false diagnosis. We therefore recommend that even in the early training-period of young residents in urology, there should be a special emphasis put on diagnostic sonographies and cystoscopies. In cases of inconclusive diagnostical findings and the slightest suspicion of a bladder tumour transurethral resection of the findings remains the gold-standard.

P66 DaVinci Zystektomie mit Anlage eines katheterisierbaren Nabelstomas - Fallbericht

L. Wernli, A. Sauer, P. Wolfsgruber, S. Wyler
Basel (CH), Aarau (CH)

Ein 38-jähriger Mann mit therapierefraktärer neurogener Blasenfunktionsstörung (komplette Inkontinenz) aufgrund einer infantilen Cerebralparese entscheidet sich als definitive Lösung für eine Zystektomie mit Anlage eines katheterisierbaren Nabelstomas.

In unserer Klinik werden Zystektomien (mit Ileum-conduit oder orthotopem Pouch) regelmässig im DaVinci-Verfahren durchgeführt. Im Vergleich zur offenen Operation ist der intraoperative Blutverlust signifikant tiefer und auch die postoperative Erholung der Patienten ist deutlich rascher bei gleichwertigem onkologischem Ergebnis.

Aufgrund der spastischen Cerebralparese ist der Patient auf einen Rollstuhl angewiesen, eine Laparotomie hätte den jungen und selbständigen Patienten wesentlich stärker belastet, was in diesem speziellen Fall ein minimalinvasives Vorgehen wünschenswert machte.

Wir haben darum den Entscheid gefasst erstmalig in unserer Klinik eine Zystektomie mit Anlage eines heterotopen Pouchs sowie eines katheterisierbaren Nabelstomas komplett in DaVinci-Technik durchzuführen.

Die Operation ging erfolgreich vonstatten. Die Operationszeit von 9 Stunden war erwartungsgemäss lange. Jedoch war der Blutverlust mit 200ml minimal und am ersten postoperativen Tag konnte der Patient auf die Normalstation verlegt werden. Nach einem komplikationslosen postoperativen Verlauf wurde der Patient am 14. Tag mit einem einliegenden Pouch-Katheter entlassen. Sechs Wochen postoperativ wurde nach einer Pouch-Darstellung der Pouch-Katheter entfernt. Seither praktiziert der Patient den Selbstkatheterismus, die Inkontinenz gehört der Vergangenheit an.

Résumé: Die Anlage eines katheterisierbaren Nabelstomas in DaVinci-Technik ist zwar anspruchsvoll aber realisierbar. Der erfreuliche postoperative Verlauf im vorliegenden Fall unterstreicht die Vorzüge des minimalinvasiven Vorgehens.

P67 Fallbericht einer vesikovaginalen Fistel

M Partilla, C Schmidt, T Sautter
Uster (CH), Wetzikon (CH)

Hintergrund

Vesikovaginale Fisteln haben in Europa eine Häufigkeit von ca. 0.6 / 1000 bei erschwerter Hysterektomie. Am häufigsten tritt eine solche Fistel nach Hysterektomie auf (50 %), gefolgt vom Status nach Hysterektomie und Radiatio (34 %) sowie nach alleiniger Radiatio (15 %). Insgesamt ist die vesikovaginale Fistel eine Rarität. Wichtig bzgl. Prognose und Therapieansatz ist die Dignität der Grunderkrankung und die entzündliche Aktivität.

Anamnese & Diagnostik

Eine 52-jährige Patientin wurde aufgrund eines Uterus myomatosus laparoskopisch hysterektomiert. Einen Monat postoperativ trat nach zunächst unauffälligem Verlauf eine vollständige Urininkontinenz mit Urinabgang ex vaginae auf. Weitere Beschwerden bestanden nicht.

Intraoperativer Befund & Histologie

6 Wochen nach laparoskopischer Hysterektomie fand die roboterassistierte Fisteloperation statt. Intraoperativ zeigte sich nach dorsaler Eröffnung der Harnblase eine 1 cm messende vesikovaginale Fistel. Bei relativer Nähe des linken Ostiums zur Fistel Entscheidung zur Schienung des linken Ureters. Nach Fistelexzision erfolgte die Blasennaht und das Anbringen eines Peritoneal-Flaps zwischen Vagina und Blasen hinterwand.

In den Exzisaten von Blase und Vagina zeigte sich eine herdförmige ulzero-granulierende Entzündung ohne Hinweise für Malignität.

Verlauf

Im weiteren Verlauf kam es bei liegender DJ-Schiene zu einer Pyelonephritis, welche antiinfektiv behandelt wurde. Am 14. postoperativen Tag konnte der transurethrale Katheter und 6 Wochen postoperativ die Harnleiterschiene entfernt werden. Hiernach unauffälliger Verlauf.

Schlussfolgerung

Der Fall zeigt, dass auch ein zweiter minimalinvasiver Eingriff ohne Einschränkungen möglich ist. Das roboter-assistierte Verfahren hilft, Komorbiditäten auch nach Komplikationen gering zu halten und zu einem erhöhten Patientenkomfort beizutragen.

P68 Urethral recurrence after orthotopic neobladder for urothelial bladder cancer: a case report

A. Grasso, R. Villani, M. Castelnovo
Milano (IT), Mendrisio (CH), Lugano (CH)

Background

The risk of urethral recurrence (UR) after radical cystectomy is about 4%. There is no association with presence of muscular invasion and prostatic stromal or urethral involvement at time of the intervention. (1) There is no consensus upon correlation between UR and presence of carcinoma in situ (CIS).

Case report

In this present case report, a 72 years old man who underwent radical cystectomy with orthotopic neobladder in 2006 for a pT2, develops dysuria. This patient was treated with cisplatin and gemcitabine adjuvant chemotherapy because of positive urethral surgical resection margins.

The retrograde urethrography showed a stenosis and a filling defect of the proximal urethra. The patient then underwent surgical endoscopic intervention that showed an urethral stenosis that was incised with Holmium laser and a mass behind the stenosis in the posterior urethra. The mass was resected with histological diagnosis of urothelial adenocarcinoma.

Conclusions

Despite radical intervention, adjuvant chemotherapy and a disease-free-interval longer than 10 years, the patient developed an urothelial cancer recurrence.

The patient will undergo oncological follow-up and eventually urethrectomy.

P69 Schwerster septischer Schock bei konservativem Therapie-Management einer spontan abgangsfähigen distalen Ureterolithiasis – ein Fallbericht

C. Salje
Zürich (CH)

Eine 48-jährige Patientin wurde via Ambulanz aus einem peripheren Haus zur operativen Therapie zugewiesen. Es zeigte sich ein unter konservativem Therapieregime bei distaler 4mm Ureterolithiasis steigendes Infektlabor, sowie steigende Retentionsparameter. Noch während des Transports wurde die Patientin Katecholamin-pflichtig. Bei Eintritt via Schockraum präsentierte sich eine tachykarde, hypotone, afebrile Patientin mit klopfdolenter rechtsseitiger Nierenloge. Laborchemisch zeigten sich nach bereits einmalig erhaltener Rocephin-Dosis erhöhte Infektparameter (Leukozyten noch 5.99 G/l, CRP 330 mg/l, PCT 32.2ug/l), sowie erhöhte Retentionsparameter (Krea 189 umol/l, GFR 27ml/min), begleitend eine Thrombopenie (Tbc 68 G/l). Die Antibiose wurde auf Tazobac eskaliert, nach kardiopulmonaler Stabilisierung erfolgte die problemlose rechtsseitige DJ-Kathetereinlage bei drittgradig ektatischem NBKS rechts. Postoperativ entwickelte die Patientin das Vollbild eines septischen Schocks mit septischer Kardiomyopathie, Anurie, ischämischer Kolitis und Hepatitis, sowie einer DIC mit Ausbildung akraler Nekrosen beider Hände, sowie des linken Fusses als Folge septischer Embolien. Dies bedurfte längerer intensivmedizinischer Betreuung mit Notwendigkeit der passageren Intubation und Katecholamin-Pflichtigkeit, Hämodialyse, parenteraler Ernährung, sowie bei Nachweis von E.coli und zeitweiser Leukozytose von über 100 000 G/l einer Fortführung der resistenzgerechten antibiotischen Therapie mit Tazobac für 7 Tage. Im ct-grapischen Verlauf demarkierten sich progrediente nephritische Läsionen ohne Hinweis auf einen Abszess oder eine Abflussstörung. Im Verlauf nach laborchemisch-hämodynamischer Stabilisierung erfolgte die Verlegung auf Normalstation, die Entlassung konnte bei normwertigen Infekt- und Retentionsparametern bei liegendem DJ-Katheter und trocken verbundenen akralen Nekrosen erfolgen. Die sekundäre URS mit Steinextraktion unter resistenzgerechter Antibiose mit Bactrim bei erneut E.coli-Nachweis erfolgte komplikationslos. Persistierend bestehen die akralen Nekrosen an Händen und Füßen, es ist unklar, ob eine Amputation im Verlauf noch notwendig sein wird. 80% der bis zu 5mm messenden Konkremete gehen innerhalb von 6 Wochen komplikationslos spontan ab. Tritt als Komplikation eine Urosepsis mit einer Inzidenz von 1/1000 auf, welche zu den lebensbedrohlichen urologischen Notfällen zählt, beträgt die Gesamt-Mortalitätsrate bei Entwicklung eines septischen Schocks bis zu 50%.

P70 Roboterassistierte laparoskopische Nierenteilresektion bei sehr zentralem Nierentumor

G. Rizzi, B. Fischer, M. Zimmermann, M. Umbehr, M. Müntener
Zürich (CH)

Background

Bei computertomographischem Verdacht auf ein Nierenzellkarzinom ohne Hinweise auf Metastasierung ist die Resektion des Tumors die Therapie der Wahl. Hierbei sollte bei klinischen T1-Tumoren zur Erhaltung der Nierenfunktion nach Möglichkeit eine Nierenteilresektion erfolgen.

Material / Methoden

Bei einem 75-jährigen Patienten wurde im Rahmen der Abklärung unklarer Rückenschmerzen der Zufallsbefund eines sehr zentral und vollständig intrarenal gelegenen, 4x5 cm grossen Nierentumors rechts gestellt. Die Videopräsentation zeigt die entsprechend komplexe roboterassistierte, laparoskopische Nierenteilresektion, bei welcher die Dorsalfäche der Niere weitgehend reseziert werden musste, um den Tumor im Gesunden aus dem Sinus renalis zu entfernen. Eine Renorrhaphie im herkömmlichen Sinn mit Adaptation der Parenchymränder war aufgrund des grossen Gewebedefekts nicht möglich.

Results

Die warme Ischämiezeit betrug 29 Minuten, der intraoperative Blutverlust lag bei 200 mL. Histologisch zeigte sich ein im Gesunden reseziertes, papilläres pT1a-Nierenzellkarzinom Typ 2. Der postoperative Verlauf gestaltete sich komplikationslos. Der Patient konnte am 3. postoperativen Tag schmerzfrei austreten. In der Verlaufscomputertomographie 8 Monate postoperativ zeigte sich eine unauffällige Kontrastierung der Restniere ohne Harnabflussstörung sowie keine Hinweise für ein Rezidiv oder Metastasierung.

Conclusion

Durch stetige technische Fortschritte und mit zunehmender Erfahrung im Bereich der roboterassistierten Nierenteilresektion können entsprechende Patienten mit immer komplexeren Nierentumoren von den Vorteilen der Laparoskopie profitieren.

P71 Peritoneal carcinomatosis following intraoperative cyst perforation of a cystic papillary renal cell carcinoma during robot-assisted laparoscopic partial nephrectomy – A case report

I. Antwerpen, N. C. Grossmann, A. Mischo, T. Hermanns
Zürich (CH)

Aim

To present an unusual recurrence of a cystic Typ I papillary renal cell carcinoma (pRCC).

Case report

An 82-year-old man was diagnosed with a left sided renal mass during routine sonography. Computed tomography (CT) confirmed a 10 cm cystic mass with solid components at the lower pole of the left kidney. Staging did not reveal any lymph node or distant metastases. The patient had known hypertension and chronic kidney disease with a creatinine of 149 $\mu\text{mol/l}$ (GFR CKD-EPI 37 ml/min). Additional risk factors for RCC were smoking and obesity.

He underwent a robot-assisted partial nephrectomy (RLPN). During preparation, a cystic part of the tumor was accidentally perforated, causing mild to moderate leakage of cyst fluid into the abdomen. Otherwise, the operation and the post-operative course were uneventful. Histology revealed a cystic pRCC, type 1, WHO/ISUP grade 2, pT2a (9 cm) with negative margins.

A CT chest and abdomen 6 months post-surgery showed no signs of tumor recurrence. One year after the operation the abdominal CT showed ascites and nodular thickening in the left upper abdomen. The patient had no symptoms. An exploratory laparoscopy revealed extensive peritoneal and omental lesions and a biopsy of the omentum confirmed the diagnosis of carcinomatosis of pRCC origin. Subsequently systemic therapy with Sunitinib, an oral tyrosine kinase inhibitor, was initiated.

Discussion/Conclusion

To the best of our knowledge, peritoneal recurrence in non-metastatic RCC after accidental cyst perforation during RLPN has never been reported. Generally, cystic RCCs are considered to have a lower malignant potential than solid RCCs. Furthermore, drainage of the cysts during open surgery is frequently performed during (partial) nephrectomy particularly in large cystic lesions. However, the current case illustrates the potential harm of cyst perforation during laparoscopic partial nephrectomy even in a tumor that is usually considered not very aggressive (pRCC). Thus, at least in patients with larger cystic RCCs, where intraoperative cyst perforation is not unlikely, open surgery should probably be favored over a laparoscopic procedure.

P72 Fallvorstellung: Sekundärer Harnleiterverschluss nach roboter-assistierter Nierenteilresektion und anschliessend Verletzung eines Unterpolgefässes beim Versuch der Wiederherstellung der Harnleiterkontinuität

A. Hyseni, C. Würnschimmel, P. Baumeister, H. Danuser, A. Mattei
Luzern (CH)

Indikation:

70 Jähriger Patient mit Zufallsbefund eines Nierentumors.

MRI: 3.4 x 3.4 cm grosser Tumor der rechten Niere am Nierenoberpol mit Volumenverdoppelung innerhalb von 2 Jahren.

Nebendiagnosen: Koronare Herzkrankheit, Z.n. Aortenklappenersatz Chronische Niereninsuffizienz Stadium 2, Z.n. Immunthrombozytopenie.

Mit dem Patienten wurde eine roboter-assistierte Nierenteilresektion in selektiver Ischämie unter laufender Antiaggregation mit Aspirin besprochen.

1. Operation:

Problemlose Darstellung, Freilegung der Niere und des Hilus mitsamt einer Unterpolararterie.

Problemlose Resektion des Tumors unter selektiver Ischämie.

Definitive Histologie: Onkozytom.

Postoperativer Verlauf:

Problemlos, ohne relevante Blutungskomplikationen mit rascher Mobilisation und Entlassung des Patienten am 5. postoperativen Tag.

Follow Up: Im Rahmen der Routinekontrolle präsentiert sich der Patient ohne Beschwerden, jedoch mit Ektasie 4. Grades der operierten rechten Niere. In einem nachfolgenden CT zeigte sich eine unklare Okklusion im mittleren Ureterdrittel. Mit dem Patienten wurde eine retrograde Abklärung und diagnostische Ureterrenoskopie mit dem Versuch der Harnleiterdilatation besprochen.

2. Operation

Im Rahmen der 2. Operation wird retrograd ein Verschluss des Harnleiters festgestellt. Daher antegrade Punktion der Niere und Versuch der ante- und retrograden Laserung im Sinne der "Cut to the light" -Technik. Dabei wird das Unterpolgefäss der Niere perforiert und es wurde notfallmässig ein selektives Coiling der Unterpolararterie vorgenommen.

Follow Up:

Bei einer Nierenfunktion von 8% der rechten Niere wird auf eine weitere Intervention verzichtet. Der Patient präsentierte sich im weiteren Verlauf beschwerdefrei mit stabil erhöhten Nierenretentionsparametern (175 umol/L).

P73 Fallbericht eines aussergewöhnlichen Nierentumors

M. Partilla, M. Dubs
Uster (CH)

Hintergrund

Bei auffälligen Nierenbefunden denkt man zunächst an das klarzellige Nierenzellkarzinom. In Ausnahmefällen sind Echinokokken die Ursache für die Entstehung grotesker Nierentumoren. Bei Verdacht auf Echinokokken ist eine Punktion kontraindiziert.

Anamnese & Diagnostik

In unserem Fall stellte sich eine 85 - jährige Patientin aufgrund einer seit einigen Monaten bestehenden harten, indolenten, grössenprogredienten Raumforderung im rechten Unterbauch bei Ihrem Hausarzt vor, welcher eine computertomographische Untersuchung in die Wege leitete. Dort zeigte sich ein substenosierender Tumor des Coecums mit V.a. Lymphknotenmetastasen sowie der Verdacht auf ein destruierendes Nierenzellkarzinom rechts. Nach durchgeführter Kolonoskopie, welche einen substenosierenden, exulzierenden Tumor im Coecum DD Karzinom ergab, fiel der interdisziplinäre Entscheid zur offenen Hemikolektomie rechts und zur offenen Tumornephrektomie rechts.

Intraoperativer Befund & Histologie

Intraoperativ zeigte sich ein grosser, solider, harter Tumor der rechten Niere. Histologisch wurde eine 9.5 cm grosse Echinococcuszyste nachgewiesen. Im Hemikolektomiepräparat rechts zeigte sich ein wenig differenziertes teils muzinöses, teils siegelringzelliges 10 cm messendes Adenokarzinom des Coecums pT3 pN2 (13/19) L1 G3 M1 (LYM).

Verlauf

Zwei Monate postoperativ traten retroperitoneal und mesenterial massiv progrediente Lymphknotenmetastasen des Coecumkarzinoms auf. Bei palliativer Situation wünschte die Patientin keine weitere Therapie.

Schlussfolgerung

Bei einem Nierentumor sollte man das zwar seltene, aber mögliche Auftreten einer Echinococcuszyste in Betracht ziehen.

P74 Triple urothelial tumor in a young woman: a case report

A. Grasso, R. Villani, L. Regusci, M. Castelnuovo
Milano (IT), Mendrisio (CH), Lugano (CH)

Background

Urothelial tumors are more frequently found in the bladder in people older than 65, smokers or people exposed to chemical carcinogens, such as polycyclic aromatic hydrocarbons, nitrosamines, aromatic amines and arsenic.

Sporadic cases in children and young adults are described in literature. Sometimes these neoplasms can cause hydronephrosis if they involve the ureteral orifice or the ureter.

Methods

We present the case of a 37 years old woman, with no apparent risk factors for urothelial cancer, presenting with hematuria.

The abdominal triphasic CT scan showed a 22 x 22 x 20 mm filling defect of the posterior-left wall of the bladder and a 64 x 36 x 39 mm lesion of the medial left ureter conditioning omolateral IV grade hydronephrosis.

Cystoscopy showed a spherical 2 cm tumor jutting into the bladder from a pedunculus exiting the left ureteral orifice; the mass was resected with histological diagnosis of pT1-G2 urothelial carcinoma. Retrograde pyelography and ureterorenoscopy demonstrated a completely obstructive lesion of the medial left ureter, impossible to get through.

Results

The patient underwent radical laparoscopic nephroureterectomy. The histological examination showed a pT2-G3 urothelial carcinoma of the left ureter and a multifocal urothelial carcinoma of the renal pelvis pT3-G3 (UICC, 8th edition). The patient will attend an adjuvant chemotherapy with cisplatin and gemcitabine.

Conclusion

Hematuria is the most common sign of urothelial neoplasia in children and young adults and should always be investigated.

In this case report the triphasic CT scan, the retrograde pyelography and ureterorenoscopy did not disclose the complete diagnosis, which could be done only after the nephroureterectomy: the primary tumor was located in the renal pelvis and the double ureteral neoplasms could derive from a seeding from the higher grade tumor in the kidney.

A multicentric study analysed the correlation between intravesical recurrence after radical nephroureterectomy (RNU), which is about 30% within 10 months, and some pre-operative factors like positive urinary cytology, presence of hydronephrosis, tumor size, ureterorenoscopy before surgery ($P < 0.05$). (5) In our patient all these factors represent a high risk for recurrence, even if female gender, laparoscopic RNU and adjuvant systemic chemotherapy are correlated with lower risk of recurrence ($P < 0.05$).

P75 Néphrome kystique multiloculaire: à propos d'un cas

P. Martel, Ilaria Lucca, Stefano La Rosa, Sanjeev Vamadevan
Lausanne (CH)

1. Néphrome kystique multiloculaire, à propos d'un cas / poster
2. Nous souhaitons présenter un cas particulièrement impressionnant de néphrome kystique multiloculaire de 40cm découvert fortuitement sous la forme d'un kyste Bosniak 4 paucisymptomatique. Le poster sera très documenté (imagerie CT, coupes histologiques, macroscopie) et évoquera en 2 paragraphes structurés, l'histoire clinique complète ainsi que le rationnel de la démarche diagnostique et thérapeutique argumenté par une revue pragmatique de la littérature sur le sujet.

P76 Case report: Pneumaturie und rezidivierende Harnwegsinfektionen nach Photovaporisation der Prostata mit dem 180-W XPS Greenlight Laser

J. Stepanow, R. Gehrler, M. Flury, T. Gasser, S. Subotic
Liestal (CH)

Die XPS Greenlightlaservaporisation der Prostata ist eine sichere und etablierte Operationsmethode zur Behandlung der benignen Prostatahyperplasie.

Wir berichten vom Auftreten rezidivierender Harnwegsinfektionen mit begleitender Pneumaturie nach Laservaporisation der Prostata. Endoskopische und radiologische Abklärungen konnten keine Fistel nachweisen. Unter konservativer Therapie verschwand die Symptomatik innerhalb eines Jahres.

Fallvorstellung

Zuweisung eines 58-jährigen Patienten mit rezidivierenden Harnverhaltungen im Rahmen einer obstruktiven Prostatavergrösserung mit einem Volumen von 40ml. Es bestanden relevante Nebenerkrankungen mit einer koronaren Kardiopathie, einem Diabetes mellitus Typ 2, einer Immunsuppression nach Nierentransplantation sowie einer Antikoagulation mit Rivaroxaban bei Vorhofflimmern. Bei frustriertem Katheterauslassversuch unter medikamentöser Therapie wurde eine Greenlight-Laservaporisation der Prostata unter resistenzgerechter antibiotischer Abschirmung durchgeführt. Nach initial unauffälligem Verlauf zeigten sich in den postoperativen Kontrollen rezidivierende Harnwegsinfekte mit wechselndem Keimspektrum (*Klebsiella pneumoniae*, *E. faecalis* und *E. coli*) die jeweils gezielt antibiotisch behandelt wurden. Der Verdacht auf eine vesikoenterale Fistel konnte weder durch Zystoskopie, Kolonoskopie, Urethrozystographie noch durch CT und MRT bestätigt werden. Im weiteren Verlauf liessen die Pneumaturie und die Harnwegsinfektionen bis zum vollständigen Abklingen der Symptome nach.

Diskussion

Die Ausscheidung von Gasen mit dem Urin wird in den meisten Fällen durch eine Fistel zwischen den Harnwegen und dem Darm hervorgerufen. Die häufigsten Ursachen für eine Fistel sind hierbei eine Divertikulitis, Malignome, Morbus Crohn, operative Eingriffe oder eine Bestrahlung. Seltener tritt eine Pneumaturie im Rahmen einer emphysematösen Zystitis/Pyelonephritis oder im Rahmen eines Infektes mit gasbildenden Keimen auf. Als häufigste Erreger werden *E. coli* und *Klebsiella pneumoniae* isoliert.

In der aktuellen Literatur konnten bisher vier Fälle einer Pneumaturie nach Greenlight Laservaporisation der Prostata identifiziert werden. Diese konnten durch das Auftreten einer rektourethralen Fistel erklärt werden und bedurften in den meisten Fällen einer chirurgischen Sanierung. Letztlich blieb in unserem Fall die Ätiologie der Pneumaturie ungeklärt. Bei fehlendem Fistelnachweis erwies sich ein konservatives Vorgehen als geeignete Therapieoption.

P77 Relapsing Metastatic Malignant Leydig-cell Tumor in a 67 years old Man: a Case Report and Review of the Literature

P. Fontanella, F. Monni, A. Grasso, G. N. Thalmann, F. Jermini
Bern (CH), Lugano (CH), Mendrisio (CH)

Background

Leydig cell tumors are testicular tumors derived from testicular stromal cells. They are rare and represent a small proportion of testicular tumors (1-3%), although they account for the majority of non-germ cell tumors

Case Report

A 67-year-old Caucasian male, known only for pulmonary embolism, received right radical orchidectomy after a palpable testicular mass was discovered, with histological diagnosis of Leydig Cell Tumor. Ten years later he was admitted at E.R. with macrohematuria and right flank colicky pain. A CT-scan revealed a right renal lesion with a maximum diameter of about 7 cm with unclear pyelic and caliceal infiltration and concurrent thrombosis of the right renal vein with partial involvement of the lower cava vein and ureterohydronephrosis with defects of the right ureter, a pulmonary lesion was also detected.

The patient received right radical nephrectomy, locoregional lymphadenectomy and cavotomy with thrombus extraction. Histology showed a metastasis of Leydig cell carcinoma, diameter 6.8 cm, with tumor necrosis. The following thoracoscopy and upper right lobe wedge-resection revealed a histological diagnosis of malignant gonadic cancer metastasis. A few months later hepatic, pancreatic and adrenal metastases appeared, together with new pulmonary and retrocaval lymph nodes. The patient underwent chemotherapy with carboplatin and gemcitabine for 2 cycles, with disease progression, immunotherapy with anti-PD1 agent Nivolumab for 2 administrations, with subsequent disease progression and he is currently undergoing palliative therapy.

Discussion

Most of Leydig cell tumors are benign, while approximately 10% of them are clinically malignant, but this feature is not easily differentiated in the pathological sample. Older patients are more likely to have a testicular cancer than a malignant Leydig cell tumor.

A study from Mayo Clinic reports that the presence of cytological atypia, necrosis, angiolymphatic invasion, increased mitotic activity, atypical mitoses, infiltrated margins, extension beyond the testicular parenchyma, DNA aneuploidy and increased MIB-1 activity, are significantly associated with the metastatic behavior of Leydig cell tumor

P78 Pneumoskrotum nach Kolorektaler Intervention - Ein Fallbericht

B Suter, J Willburger, M Wimmer, P Kirchhoff, CA Rentsch, HH Seifert
Basel (CH)

Einleitung

Das Pneumoskrotum ist eine sehr seltene Komplikation nach einer gastrointestinalen Endoskopie. Es besteht ein hohes Infektionsrisiko im Bereich des Unterhautgewebes bis hin zu einer nekrotisierenden Fasziiitis.

Fallbericht

Bei einem 61-jährigen Patienten mit Rektumkarzinom und St. n. Rektumresektion mit transanaler-koloanaler Anastomose ist es zu einer Stenose ebendieser gekommen. Es wurde deshalb eine starre Proktoskopie mit Dilatation durchgeführt. Hierbei kam es zum sofortigen Auftreten einer skrotalen Schwellung. In der urologischen Untersuchung zeigte sich bei schmerzfreiem Patienten ein geschwollenes Skrotum (15cm) und es wurde klinisch und sonographisch die Diagnose eines Pneumoskrotums gestellt. Eine durchgeführte Computertomographie zeigte freies Gas retroperitoneal mit Ausdehnung nach skrotal (15x13cm) sowie perirenal, perihepatisch und bis subdiaphragmal. Eine Fistel, intraabdominale Luft oder anderweitige Läsionen, welche eine operative Versorgung indiziert hätten, waren nicht erkennbar.

Basierend auf den vorhandenen Daten wurde eine umgehende antibiotische Abschirmung mit Tazobac für 5 Tage initiiert. Ebenso erfolgte eine engmaschige Überwachung des Patienten. Nach 5 Tagen konnte der Patient nach Hause entlassen werden und die antibiotische Abschirmung wurde mit Augmentin 5 Tage weitergeführt. Der Patient hatte zu keiner Zeit Schmerzen im Bereich des Skrotums oder Probleme bei der Miktions. Laborchemisch zeigte sich lediglich leicht erhöhte Infektparameter (CRP 47.3 mg/l bei normwertigen Leukozyten 4 Tage postoperativ). In einer Verlaufskontrolle 6 Wochen postoperativ zeigte sich eine komplette Rückbildung des Pneumoskrotums.

Diskussion und Konklusion

Ein Pneumoskrotum nach gastrointestinaler Endoskopie ist höchst selten. In der Literatur sind nur wenige Fälle (< 10) nach Koloskopie beschrieben. In den meisten dokumentierten Fällen war eine konservative Therapie, wie in unserem Fall, ausreichend und eine operative Weichteilsanierung oder ein Fistelverschluss nicht notwendig. Es ist notwendig umgehend eine antibiotische Abschirmung zur Vorbeugung schwerer Weichteilinfektionen zu starten und den Patienten engmaschig zu überwachen.

P79 Penile Mondor's disease: typical acute and worrisome presentation of uncommon benign condition. A case report

M. Ferrari, J. Renard, G. Porcu, B. Mazzola, F. Stoffel
Bellinzona (CH)

Objectives

Penile Mondor's disease or superficial thrombophlebitis of the dorsal vein of the penis is a very rare condition reported in the literature; its etiology has been associated with traumatic, infectious, post-surgical, oncological, pharmacological and haematological factors. Due to an acute onset and to local symptoms, the disease causes much concern to patients. However, it is often a self-limiting condition and although very rare has a typical clinical presentation that can be easily diagnosed, if known, by the specialist. We report a case diagnosed in our daily clinical practice.

Material and Methods

A 62-year-old male was referred to our emergency department for pain in the penis that increased during erection associated with a palpable lesion in the dorsal level of the penile shaft. Patient did not refer penile discharge nor concern for sexually transmitted infection or changes in urinary function. No significant comorbidity nor previous surgery or history of drug abuse were registered. Patient only reported, 48 hours before the onset of pain, a vigorous and prolonged sexual intercourse. At physical examination genitalia resulted normal except for a cord-like aching mass appreciated at the dorsal level of the proximal third of the penis without erythema or swelling. Color doppler ultrasound showed a distended superficial dorsal vein of the penis without flow signal in the lumen.

Results

Patients underwent pharmacological treatment with oral non-steroidal anti-inflammatory drugs and topical heparin. The patient was also invited to abstain from sexual activity until the symptoms resolved. After two months the patient reported the disappearance of the pain, with an objective moderate reduction in the consistency of the dorsal penile cord and partial recovery of vein permeability. At three months of follow up no clinical signs of residual disease were found.

Conclusion

Penile Mondor's disease is a rare clinical condition in most cases reported following intense sexual activity. The diagnosis is mainly clinical and can be helped by the use of color doppler ultrasound. Correct diagnosis and early medical therapy promotes faster healing, which however occurs spontaneously in most cases. Refractory cases requiring surgical therapy are rare

P80 Kleine Operation, fatale Folgen - Fallbericht einer Fournier-Gangrän

P. Trotsenko, D. Eyer, C. Meuli-Simmen, P. Grimsehl, C. Kraft, S. Wyler, M. Kwiatkowski
Aarau (CH), Olten (CH)

Ein 37-jähriger Patient stellte sich mit progredienter Schwellung, Rötung und Schmerzen skrotal und penil bei St. n. ambulanter radikaler Zirkumzision 3 Tage zuvor notfallmässig urologisch vor. Die Laboruntersuchung ergab massiv erhöhte Entzündungsparameter (CRP 460 mg/l, Lc 31.13 G/l) und eine akute Niereninsuffizienz (Crea 188 umol/l). Die durchgeführte CT-Becken-Untersuchung zeigte ein ausgeprägtes Penoskrotalödem ohne Gaseinschlüsse. Bei deutlicher Befundprogredienz unter antibiotischer Therapie mittels Piperacillin-Tazobactam/Clindamycin und klinischem Verdacht auf Fournier-Gangrän erfolgte gleichentags die Zirkumzisionsnaht- und Penisschafthauteröffnung mit anschliessender Verlegung auf die Intensivstation. Bei Vollbild einer Urosepsis und progredient-livider Verfärbung des Skrotums wurde ein radikales Débridement durchgeführt. Bei Nachweis von A-Streptokokken im Wundabstrich und histologisch gesicherter Abszedierung konnte die Verdachtsdiagnose bestätigt und die antibiotische Therapie resistenzgerecht deeskaliert werden. Nach insgesamt 3-maliger Wundrevision, stabiler Nierenfunktion und regredienten Entzündungslabor wurde der Patient auf Peripherstation verlegt und der sekundäre Wundverschluss erfolgte. Bei Wunddehiszenz aufgrund des Gewebsverlustes nach Débridement erfolgte in Zusammenarbeit mit der Klinik für plastische Chirurgie nach Einlage eines Zystofix eine kombinierte Versorgung mittels Spalthauttransplantat, Z- und Schwenklappenplastik. Nach 7 Tagen konnte bei reizlosen Wundverhältnissen und gutem Transplantatzustand der Zystofix entfernt und der Patient nach 24 Tagen aus der stationären Behandlung entlassen werden.

Die nekrotisierende Fasziiitis des Genitalbereiches gehört mit einer Inzidenz von ca. 1.6/100000 zu den lebensbedrohlichsten urologischen Krankheitsbildern. Die Gesamt-Mortalitätsrate beträgt in der Literatur zwischen 20-40%, kann jedoch bei begleitender Urosepsis 70-80% erreichen.

Folglich sollten unverhältnismässige Schmerzen im Genitalbereich (sog. „pain out of proportion“) nie unterschätzt werden, da das Vollbild der Fournier-Gangrän mit Rötung, Schwellung und Krepitationen häufig erst im Verlauf auftritt. Der Diagnosezeitpunkt ist der wesentliche Prognosefaktor und somit besteht bei klinischem Verdacht die Indikation zur sofortigen Intervention.

P81 Intra-abdominal testicle in a 48 year old patient: A case report

S. Göd, P. Spangehl, P. Spörri
Lyssach (CH), Olten (CH)

Undescended testis is the most common disorder of male sexual differentiation and occurs in 2 to 5 % of full-term boys. The treatment comprises hormonal, surgical or a combined therapy and should be completed at the age of one year to minimize the risk of infertility and testicular cancer.

Case Report

Patient's history: A 48 year old man presented to the Emergency Room with acute right-sided abdominal pain. In the anamnesis he reported recurring symptoms in the same area since many years. The patient was born in Vietnam spending the last 30 years as an electrician in Switzerland and had never had a surgery in his life.

Physical examination

Due to the unclear abdominal pain with no signs of an acute inflammation a CT-scan was performed. The images showed bilateral undescended testes with the presumption of an abdominal testicle on the right side of the middle abdominal cavity. The left testis seemed to be in the left groin and was palpable in the clinical reevaluation. The testicular cancer tumor markers showed a lightly increased Beta-hCG of 4,3 IU/l and LDH of 399 I/U and a standard valued AFP of 3,1 IU/ml. The testosterone-value was decreased with 3,50 nmol/l.

Treatment

A surgical management with an open procedure and removal of the macroscopically degenerated testicle in the middle-right abdominal area was performed within the next week. After receiving the histopathological result with the diagnosis of a seminoma the left undescended testicle was also removed from the left inguinal canal within the next 2 months without signs of malignancy. The staging-examination, which was performed in the mean-time, showed no signs of metastases. To complete the treatment a single cycle of adjuvant chemotherapy with Carboplatin AUC-7 was enforced subsequently. Additionally the testosterone deficiency was frequently substituted.

Outcome

3 months after the completed therapy the patient is no longer troubled with abdominal pain and is clinically tumor-free. His loss of masculinity because of the missing testes has improved due to implanted testicular-prostheses. The infertility was preexisting before surgery and showed an azoospermia.

Conclusion

The treatment options for adults with an undescended testis comprise orchiopexy, orchiectomy or observation. Therapy before puberty seems to decrease the risk of testicular cancer. Abdominal cryptorchidism has a 32 times higher risk of malignancy, which underlines the importance of childhood awareness programs.

P82 Timely detection of sequence variations of three genes potentially associated with *Mycoplasma genitalium* treatment failures

K. Egli, N. Wohlwend, M. Ritzler, M. Risch, L. Risch, T. Bodmer
Liebefeld (CH), Buchs (CH)

Background

Mycoplasma genitalium (MGEN) infection is considered as a major cause of urethritis in men and is associated with cervicitis, pelvic inflammatory disease, preterm birth, and spontaneous abortion in women. First-line treatment for MGEN infection is the macrolide azithromycin (AZI). SNPs in the 23S rRNA gene of MGEN result in reduced affinity to the 50S ribosomal macrolide target, and are held responsible for the worldwide emergence of macrolide-resistant MGEN. Here, we studied the technical feasibility of determining the 23S rRNA gene sequence of MGEN directly from positive clinical specimens by real-time PCR and melting-curve analysis. In addition, the variability of *gyrA* and *parC* gene loci of MGEN were studied as a potential surrogate marker for quinolone resistance.

Materials/methods

The analytical sensitivities (LOD) of all targets were determined using a quantified DNA standard (Vircell). Clinical specimens (urines; urogenital swabs) were screened for the presence of MGEN by the AnyplexII STI-7 assay (Seegene). SNPs in the 23S rRNA gene were analysed using "LightMix Modular *Mycoplasma Macrolide*" (TibMolbiol). For *gyrA* and *parC* published primers were used with a SYBRGreen-PCR and PCR products were subsequently sequenced. Obtained sequences were aligned and compared with database.

Results

LODs (genome equivalents/PCR) were: 23S rRNA gene, 15; *gyrA*, 15; and *parC*, 8. Screening by multiplex PCR revealed 23 MGEN positive specimens. Of these, 16 (89%) were wild-type and two (11%) showed SNPs in the 23S rRNA gene, respectively. In addition, 19 (95%) revealed wild-type *gyrA* gene sequences; one specimen showed a silent mutation (C270T). A total of 16 (76%) *parC* gene sequences were wild-type; 4 (19%) had silent mutations (C234T). One specimen (5%) was a mixed infection (C and T at position 234). One specimen (5%) was not wild-type (G248T with a change in amino acid sequence). In 2 specimens (9%), that yielded MGEN by the STI-7 assay, no amplification was obtained.

Conclusions

Analytical sensitivities were excellent. Timely confirmation of MGEN wild-type 23S rRNA gene sequence directly from clinical specimens is feasible and may have impact on current treatment guidelines. For quinolones, the relatively high proportion of silent mutations found may limit this approach for predicting treatment failures.

P83 Lebensbedrohliche Hämaturie durch Gefäßprotheseninfekt – Ein Fallbericht

C. Ladurner, L. Hechelhammer, E. Alexandre-Lafont, T. Ottilinger, O. Köhle, H. Schmid, D. Abt
St. Gallen (CH)

Fallbeschreibung

Wir berichten über einen 84-jährigen Patienten der im Rahmen eines chronischen aortoiliakalen Stengraft-Infektes eine aorto-ureterale Fistel entwickelte. Vor 4 Jahren wurde der Patient mit einem kombinierten aortoiliakalen und Nierenarterien Stentgraft versorgt. Bereits zwei Jahre später haben sich beide Nierenarteriengrafts im Rahmen eines Endoleak Typ III verschlossen. Der Patient endete daraufhin in einer dialysepflichtigen Niereninsuffizienz. In Folge einer Klebsiella pneumoniae Sepsis vor einem Jahr, mit rechtsseitiger ableitungspflichtiger Harnstauungsniere und Infektion der Gefäßstents, wurde der Patient mit einer lebenslangen Antibiotikatherapie behandelt. Der Patient stellte sich im Mai 2018 mit einer Makrohämaturie und Blasentamponade vor. Eine Blutungsquelle konnten wir nicht finden. Zwei Wochen später fand sich der Patient erneut mit selber Symptomatik und einer transfusionsbedürftigen Anämie in der Notaufnahme ein. Eine Angio-CT Untersuchung zeigte einen progredienten Gefäßprotheseninfekt, der nun in Kontakt mit dem rechten Harnleiter getreten und eine Fistel gebildet hat. Die konsiliarisch hinzugezogenen Gefäßchirurgen sahen keine Möglichkeit einer operativen Sanierung der Fistel. Ebenfalls interventionell-radiologisch bestand keine Möglichkeit zur Therapie. Zunächst erhofften wir uns nach Entfernen des einliegenden DJ Katheters und stoppen der Antiaggregation eine Besserung der Blutung. Leider hielt dieser Effekt nur kurz. Als letzte Therapieoption gelang es, gemeinsam mit den interventionellen Radiologen, eine 15cm lange und 10mm durchmessende Gefässendoprothese im rechten Harnleiter zu applizieren. Bereits einige Stunden nach dieser Prozedur konnten wir eine deutliche Besserung der Blutung feststellen und den Patienten nur 2 Tage später mit völlig klarem Harn entlassen.

Diskussion

Mit diesem Fallbericht möchten wir auf eine sehr seltene urologische Komplikation von langstreckigen infizierten Gefässendoprothesen aufmerksam machen. Die urologischen Symptome können massiv und lebensbedrohlich sein. Die Therapiemöglichkeiten in diesem speziellen palliativen Setting bei einem ansonsten nicht operablen Patienten sind begrenzt.

Schlussfolgerungen

Die Therapiemöglichkeiten einer arterio-ureteralen Fistel sind begrenzt und nur in wenigen Fällen in der Literatur dokumentiert. Die Behandlung erfolgt meistens endovaskulär, welche in unserem Fall nicht möglich war und wir eine unkonventionelle Behandlung wählten.

P84 Primary squamous cell carcinoma of the renal pelvis: a case report of an uncommon malignancy

M. Ferrari, J. Renard, G. Porcu, B. Mazzola, F. Stoffel
Bellinzona (CH)

Objectives

Tumors of the upper urinary tract are the least frequent of renal tumors and among them squamous cell carcinoma (SSC) of the renal pelvis represents a rare histological entity. This malignancy is very aggressive and associated with a poor prognosis. The main recognized risk factor in the few cases reported in the literature is nephrolithiasis. The aim of this report is to describe an unexpected diagnosis of renal pelvis SSC.

Material and Methods

We report a case of a 82-year-old female who came to our attention following onset of haematuria and left flank pain. Blood tests showed anemia and hypercalcaemia. Medical history included severe chronic renal failure, coronary artery bypass, aortic valve substitution, diabetes and hypertension. A computed tomography scan showed a mass of 8 x 7 cm involving the mid and upper third of the left kidney associated with hilar lymphadenopathy. No evidence of metastatic lesions was found in the remaining abdomen, thorax and at bone scan. Patient underwent radical nephrectomy with para-aortic lymphadenectomy through a left subcostal lumbar incision.

Results

Histopathological examination of the kidney shows a SSC arising from the renal pelvis, involving the renal parenchima and the perirenal fat, with renal vein embolization and lymph node invasion. No post-operative surgical complications were recorded and renal function remained unaltered without the need for dialysis. At follow up no signs of clinical recurrence were found. However, the patient's clinical condition declined progressively until death occurred three months later to causes not linked to oncological disease

Conclusions

In addition to being a very rare entity, this case demonstrates that renal pelvis SSC can grow also in the absence of predisposing risk factors. Moreover, renal pelvis SSC confirms not having a specific presentation and often being diagnosed at an advanced stage. Although the poor oncologic outcome, radical surgery remain the foremost treatment, not only for diagnosis but also for palliative control of symptoms, as alternative treatment options are of limited efficacy.

P85 Prostatic Ewing's Sarcoma in a 29 Years Old Man: a Case Report and Review of the Literature

P. Fontanella, F. Monni, A. Grasso, G. N. Thalmann, F. Jermini
Bern (CH), Lugano (CH), Mendrisio (CH)

Introduction

Ewing's sarcoma is the second most common primary bone tumor seen in children and adolescents. However, extraosseous sarcomas of the Ewing family in adults are very rare. We report a case of this uncommon tumor entity in the prostate of a 29-year-old male.

Case Report

The current case refers to a 29-year-old Caucasian male patient with no known exogenic noxae and no known genetic diseases in the family. He presented at Emergency department, referring urinary frequency and dysuria persisting in the previous 14 days, associated with light left scrotal pain, and left flank pain, night sweats without fever, and a 2 Kg weight loss in the previous 2 months. A single episode of macrohaematuria following lumbar trauma in the previous month was not investigated. A CT-scan showed a lesion involving prostate and seminal vesicles, with multiple lytic bone lesions and pulmonary involvement.

The patient then received various cycles of chemotherapy and radiation therapy but unfortunately died.

Conclusions

Approximately 25% of patients with Ewing sarcoma have metastatic disease at the time of diagnosis. Ewing sarcoma occurs most frequently in teenagers and young adults, with a male/female ratio of 1.6:1

Extraosseous Ewing sarcoma in adults represents an extremely rare tumor entity. Cases have been reported with localization in the urinary bladder, kidneys, adrenal glands and even the penis. To our knowledge, only nine other cases of (peri-) prostatic Ewing sarcoma are known worldwide being first described in 2003

Sarcomas are a rare but clinically relevant differential diagnosis in pelvic masses of the young adult. Histological confirmation and definitive classification is paramount for optimal treatment, which should include a multimodal approach in an interdisciplinary team, and be tailored on the initial extension of the disease.

P86 Removal of a transobturator mesh (TOT) using a vaginal approach in a patient with pelvic pain after sling insertion: A case report

J. Tornic, J. Neuenschwander, S. Elneil, H. John
London (GB), Winterthur (CH)

Introduction

Polypropylene mesh is widely used for incontinence, pelvic organ prolapse and hernia surgery. However, mesh-related complications, such as voiding dysfunction, dyspareunia (incl. hispareunia) and pelvic pain are common problems affecting up to one in ten patients after incontinence mesh insertion. For this reason, mesh removal may need to be considered in certain cases.

Case Report

A 42-year-old woman (gravida 2, para 2) presented with a history of pelvic, groin and leg pain shortly after having had an insertion of a transobturator tape (TOT) for urinary stress incontinence, labioplasty and anterior and posterior colporrhaphy for grade 1 cystocele.

Two months after the surgery above, the examination findings were: normal vaginal mucosa without any signs for mesh erosion, painful palpation of the TOT and significantly impaired mobility due to pain. At this time, the patient was taking Pregabalin, opioids and conventional pain killers. There was no evidence of bladder dysfunction nor urethral or bladder injury as assessed by urodynamics and urethro-cystoscopy, respectively. Additionally, nerve damage was excluded with a neurophysiologic examination.

Following these assessments, it became clear that the patients' symptoms were most likely due to the TOT mesh. Thus, arrangements were made to surgically remove the mesh.

Surgical outcome

Using a well-established vaginal surgical technique, developed by one of the authors, the mesh was removed. A vaginal pack was left in-situ for 24 hours, and a foley catheter was left in-situ for 7 days. She had a trial without catheterisation after that period, but her post-void residual was elevated. Thus, she was taught how to perform ISC as an interim measure until spontaneous voiding with complete emptying recommenced, which was within about two weeks after surgery.

The patient recovered well after surgery. Over a period of six weeks she ceased all her opioids and other pain medication.

Conclusion

Our case demonstrates that TOT mesh removal should be considered as an option for patients experiencing mesh-related complications. Trimming or partial removal of mesh is currently considered superior to attempted complete mesh removal, but increasingly it is noted that pain may persist. Pain medicine is key to the management of this patient group, and it is quite clear that properly designed and powered randomized controlled studies are necessary.

P87 Incorporation of liquid-based-microbiology enhances diagnostic outcome of Neisseria gonorrhoeae in asymptomatic female carriers

A. Roditscheff, N. Wohlwend, M. Risch, L. Risch, T. Bodmer
Liebefeld (CH), Buchs (CH)

Background

To identify asymptomatic female carriers of Neisseria gonorrhoeae (NG), Swiss diagnostic laboratories often screen urogenital specimens by adding selective culture media. After Implementation of liquid based microbiology (LBM) in May 2013, we reviewed the diagnostic work flow to determine the combinatorial effects of LBM, nucleic acid amplification testing (NAAT) and culture on laboratory automation and diagnostic outcome. Furthermore, we investigated the performance of liquid transport media on NAAT.

Methods

Overall, 9'575 liquid-based urogenital swabs were collected and simultaneously cultured on selective chocolate agar PolyViteX VCAT3 plates and tested by NAAT (RealTime CT/NG assay m2000 Abbott, Anyplex™II, Seegene). If culture growth was detectable, antimicrobial susceptibility testing (AST) was performed. Furthermore, the performance of SwabAX (Axonlab) to cobas® PCR Media (Roche) for NAAT was tested on 360 urogenital specimens, using m2000 Abbott and cobas® 6800.

Results

NG was detected in 0.40 % (38/9'575) of all specimens. 100 % (38/38) off all NG positive specimens were detected by NAAT and 57.90 % (22/38) were identified by culture, revealing a better NG detection rate for NAAT than for culture. Importantly, testing the performance of SwabAX for CT/NG detection on m2000 Abbott and cobas® 6800, did not differ significantly from Cobas PCR Media.

Conclusions

Our findings demonstrate that an altered diagnostic work flow for NG, combining LBM, NAAT and culture, improves sensitivity of NG detection. A transport media that allows for specific as well as syndromic orientated diagnostics and application of molecular and culture techniques is a crucial point for successful laboratory automation.

P88 Urosepsis mit ausgedehnter Spondylodiszitis und epiduralen Abszessen nach TUR-P mit Nachweis chronischer Prostatitis – ein Fallbericht

F. König, P. Viktorin, D. Engeler, HP. Schmid, D. Abt
St. Gallen (CH)

Einleitung

Die transurethrale Resektion der Prostata ist eine der am häufigsten angewandten urologischen Prozeduren. Gleichwohl sind die Risiken und Komplikationen des Eingriffs vielfältig. Infektiologisch kann es zu schwerwiegenden Verläufen kommen. Die EAU Guidelines empfehlen eine single-shot Prophylaxe vor TUR-P, unabhängig von individuellen Risikofaktoren. Ein besonderes Risiko stellt die latente, chronische Prostatitis (CP) dar. Studien zeigen diesbezüglich eine signifikante Assoziation mit postoperativen febrilen Harnwegsinfekten und Septitiden. Insbesondere in solchen Fällen stellt sich die Frage nach einer Prophylaxe infektiologischer Komplikationen.

Case Report

Bei einem 73-jährigen Patienten wurde aufgrund eines benignen Prostatasyndroms Grad III nach frustranter medikamentöser Therapie die Indikation zur TUR-P gestellt. Eine zuvor durchgeführte Biopsie zeigte Herde von CP bei fehlendem Malignitätsnachweis. Unter präoperativ begonnener Antibiose mit Nitrofurantoin zeigte sich das Urinsediment am Eintrittstag nur wenig suspekt (pH 6, Lc 36, Ec 15, Nitrit negativ). Es erfolgte die TUR-P in üblicher Art und Weise mit postoperativ unauffälligem Verlauf und DK Entfernung am 3. Tag. Nach 10 Tagen notfallmässige Wiedervorstellung des Patienten mit Urosepsis mit ausgedehnter Streuung der Entzündung. Im MRI zeigten sich verflüssigte Bandscheiben (L5/S1, L3/4, L1/2 sowie Th12/L1), ein epidural langstreckiger Abszess Th 12 – S 1 mit hochgradiger Spinalkanalstenose sowie ein Abszess im M. psoas rechts. Es erfolgte von orthopädischer Seite in multiplen Eingriffen die Resektion und Rekonstruktion der betroffenen Wirbelsäulenabschnitte. Mikrobiologisch konnte in den Abszessen der gleiche E. coli Keim wie im Urin des Patienten nachgewiesen werden.

Schlussfolgerung

Verschiedene Risikofaktoren erfordern ein individuelles Management der präoperativen AB-Prophylaxe vor TUR-P. Die CP in TUR-P Patienten ist sehr verbreitet und ein signifikanter Risikofaktor für postoperative febrile Harnwegsinfekte und Septitiden. Insbesondere der Nachweis einer CP präoperativ sollte unabhängig vom Urinbefund zu besonderer Wachsamkeit führen. Liegt keine Histologie vor OP vor, könnte eine intensivierete Anamnese hinsichtlich typischer Symptome einer CP oder eine 2-4 Gläserprobe Aufschluss bringen. Insgesamt sind die Guidelines lückenhaft hinsichtlich der AB-Prophylaxe vor TUR-P und es braucht Evidenz-basierter, risikoadaptierter Konzepte mit individueller Anpassung zur klinischen Orientierung.