Hot topics in andrology

By Erika de Groot

Does the environment contribute to male infertility?

What are the conception risks with regards to paternal age?

As paternal age increases, it presents no absolute risks and complications, stated Prof. Andrea Salonia (IT). This lecture “Are European men delaying fatherhood? Epidemiology and the effects of advancing paternal age in fertility potential and the offspring.”

“Another point... is patient education. Doctors often hide behind the perceived protection provided by a consented patient but often miss the more important point of informing the patient,” said Leigh, who has conducted prominent cases in clinical negligence and regulatory law over the past 30 years.

The session reviewed three cases: the first concerning a patient who had radical cystectomy despite a post-operative pT0 finding (no tumour); the second an elderly patient who suffered intra- and post-operative complications; and the third involving severe complications following a first transurethral resection of bladder tumour (TURBT).

Facing intense questioning by Leigh were Maximilian Burger (DE), Morgan Rouprêt (FR), Alexandra Masson-Leconte (FR) and Hugh Mostafid (GB), who defended their surgical approaches. In the first case, where the patient filed a suit (after cystectomy) due to the absence of a tumour, Burger said bladder removal was still warranted since there is a high rate of recurrence. He characterized it as a potentially “vicious” case, saying: “If you don’t do it right, it can lead to aggressive disease. No tumour doesn’t necessarily mean cure.”

However, Leigh said the issue was not so much about the strategy taken by the doctor, but the way the planned treatment was communicated to the patient.

“What would help if doctors were not always so nice to their patients. At some point you have to share your uncertainty with them and make them understand the risks or severity of the treatment,” said Leigh.

The second case examined issues such as the lack of consensus on intra-operative complications, patient education, and the role of recording complication rates.

Informed patients mean fewer legal woes

Lawyer Bertie Leigh: “To avoid nightmares, communicate well with patients”

By Joel Vega

Patients well informed by their doctors on the risks of complex surgical and medical treatments are less inclined to fight bitter legal battles with healthcare professionals, said a renowned litigation lawyer during yesterday’s Plenary Session 2 which took up problematic surgical cases in bladder cancer.

In a full-house “Nightmare Session” chaired by urologist Tim O’Brien (GB), expert medical litigation lawyer Bertie Leigh (GB) returned for a second time to drive home his point on weak patient-doctor communication, which he says is often the reason why complex medical cases end up in the courtroom.

“The underlying point... is patient education. Doctors often hide behind the perceived protection provided by a consented patient but often miss the more important point of informing the patient,” said Leigh, who has conducted prominent cases in clinical negligence and regulatory law over the past 30 years.

The session reviewed three cases: the first concerning a patient who had radical cystectomy despite a post-operative pT0 finding (no tumour); the second an elderly patient who suffered intra- and post-operative complications; and the third involving severe complications following a first transurethral resection of bladder tumour (TURBT).

Facing intense questioning by Leigh were Maximilian Burger (DE), Morgan Rouprêt (FR), Alexandra Masson-Leconte (FR) and Hugh Mostafid (GB), who defended their surgical approaches. In the first case, where the patient filed a suit (after cystectomy) due to the absence of a tumour, Burger said bladder removal was still warranted since there is a high rate of recurrence. He characterized it as a potentially “vicious” case, saying: “If you don’t do it right, it can lead to aggressive disease. No tumour doesn’t necessarily mean cure.”

However, Leigh said the issue was not so much about the strategy taken by the doctor, but the way the planned treatment was communicated to the patient.

“What would help if doctors were not always so nice to their patients. At some point you have to share your uncertainty with them and make them understand the risks or severity of the treatment,” said Leigh.

The second case examined issues such as the lack of consensus on intra-operative complications, patient education, and the role of recording complication rates.

Technology strikes back

Day-long Live Surgery session examines new surgical techniques

By Joel Vega

Under the watchful ‘3D eyes’ of hundreds of congress participants, more than a dozen live surgeries were presented yesterday via direct transmission from Herlev Hospital in Denmark, a complex programme that involved surgeons from various countries.

Organised by the EAU Section of uro-technology (ESUT) in collaboration with the EAU Robotic Urology Section (ERUS) and the EAU Section of Urolithiasis (EULIS), a combination of live and pre-recorded videos showed a wide range of sophisticated techniques in laparoscopic prostatectomy, percutaneous nephrolithotripsy, robot-assisted prostatectomy, various stone removal techniques, robotic bladder resection, and radical nephrectomy among many others.

The live and pre-recorded operations were presented in four parts during the day-long session titled “Technology Strikes Back,” which formed part of the annual tradition of the ESUT to share educational content and practical insights regarding some of the most cutting-edge techniques in urological surgery.

Four sets of moderators provided commentary and asked questions to the participating surgeons for them to explain the rationale of the surgical steps they have taken, or shed insights on the pre-operative planning. Coordinating on the EAU Auditorium were Dr. Alberto Breda (ES) and Prof. Dr. Andrea Gross (DE).

The first set showed a 3D laparoscopic prostatectomy performed by Prof. Jens Stolzenburg (DE), followed by a mini-glove percutaneous nephrolithotripsy by Prof. Udo Nagelle (AT). Nagelle demonstrated the laser ‘hannering’ of stones, and his attempts to retrieve a bigger stone fragment.

Following Nagelle’s procedure was a flexible ureteroscopist lithotripsy by Dr. Guido Giusti (IT) and a single-use ureteroscopy lithotripsy by Assoc. Prof. Kim Andersen (DK) and robotic partial nephrectomy by Prof. Stefan Siemer (DE).

A panel of experts monitor and comment on the direct transmissions of live surgeries from Herlev to Copenhagen.

During Siemer’s operation, moderator Breda commented on the vein thrombosis that Siemer encountered. They also discussed clamping techniques and the pre-operative strategy to anticipate potential problems during the operation. Questions from the audience also included resection techniques and whether the option to shift to a radical nephrectomy is considered by the lead surgeon. Surprisingly, during a hands-vote, many of the audience opted for a radical nephrectomy when asked if they would consider the option.

The second part of the session covered pre-recorded videos of robotic and endoscopy technology in upper tract tumours, robotic intracorporeal neobladder using the Wilkund technique and presented by Prof. Peter Wiklund (SE) himself. Former ESUT chairman Prof. Jens Rassweiler (DE) was also scheduled to demonstrate a 4K laparoscopic extraperitoneal radical nephrectomy, to be followed by current ESUT chair Prof. Evangelos Liatsikos (GR) performing a prone percutaneous nephrolithotripsy.

Provide sustainable patency.
EAU Guidelines have to be criticised to be improved
EAU Guidelines Controversies session justifies recommendations

By Erika de Groot

Antibiotic alternatives, further education and mathematical modelling were some of the topics explored today during the antimicrobial stewardship course (A5S): “From cystitis to uroscript: What is the best way to deal with antimicrobial resistance (A5S)certified?”

The course is part of the joint meeting of the EAU Section of Andrological Urology (ESAU) and the EAU Section of Infections in Urology (ESU) “When Basic Science meets Clinic Practice” chaired by Prof. Nicolas Mottet (FR) and Prof. Florian Wagenlehner (DE).

Antibiotics alternatives
Ass. Prof. Björn Wullt (SE) enumerated various alternatives to antibiotics for treating acute urinary tract infection (UTI) which ranged from observation (“wait and see”), NSAIDs (Nonsteroidal Anti-Inflammatory Drugs) and increased fluid intake (although these require further study) to Canephroph, a phytopharmaceutical medicinal product for which study results will be published soon.

In his lecture “Non-antibiotic treatment and prevention in uncomplicated cystitis,” Wullt also mentioned that Mottet was referring to the presence of Dr. Laurence Collette (BE) in the debate on prostate cancer. Dr. Collette is the Chief Statistician for the EORTC. Following a debate between Prof. Noel Clarke (GB) and Dr. Philip Conford (GB) on the merits of combining systemic treatments for every patient or only a small selection, Dr. Collette weighed in on the data that both discussants were citing: “How much does the subgroup contribute to the full picture? We should consider the percentage of events, rather than the patients.” In the example of the CHAARTED trial, low volume disease accounted for 35% of the patients, but only 25% of events in its latest update. Definitions of “high volume disease are also debatable, relying on bone scans alone, distinguishing aggressive vs. slow-growing disease, and so on.

Based on the audience’s votes before and after this particular debate, it seems Dr. Collette swayed many of those present. Before the debate, the audience was split almost evenly between four possible answers to a question about newly-diagnosed M0 disease (enlarged retroperitoneal nodes only): ADT combined with Abraxane acetate, ADT combined with Docetaxel, either drug or ADT only. Following the debate, nearly half of the audience voted for the third option, a combination of ADT and either drug.

By Jan Tidman

Dr. Dimitris Deligiannis (GR), supported by Team Greece, emerged victorious in the third and final round of the cup EAU Guidelines Cup, a new multiple-choice quiz game that examined which EAU member knows the EAU Guidelines the best.

The contest was hosted by the Young Urologists Office (YVO) and European Society of Residents in Urology (ESRU) as part of YVO2018. Prior to the annual congress, the first and second rounds took place online through multiple-choice questions. 450 contestants were whittled down to 25, and then the final three.

Introduced to the sounds of “Eye Of The Tiger”, Turri, the third place winner, and Dr. Rodríguez-Monsalve Herrero (ES), the audience announced to a soundtrack of “Eye Of The Tiger” and Team Italy. The audience also heard congratulations on becoming a father, Dr. José Medina-Polo (ES) in his lecture “Be informed”, “The best prevention is adequate information,” stated Dr. José Medina-Polo (ES) in his lecture Collateral effects of antibiotic treatment and how to minimise them (C. difficile and multidrug-resistant pathogens).

Training focused on multidrug-resistant organisms (MDRO), local microbial prevalence, resistance patterns, and prescription of antibiotics is imperative, as are antimicrobial stewardship programmes dedicated to improving antibiotics. These programmes have demonstrated a reduction in the incidence of infections as well as the isolation of MDRO bacteria and C. difficile infections.

Medina-Polo added that the prescription of antibiotics should be adequately indicated and justifiable in order to avoid the use of broad-spectrum antibiotics. He said that perioperative antibiotic prophylaxis and postoperative antibiotic treatment are still widely used and need to be revised.

Mathematical modelling “We need to improve antibiotic selection. In this sense, mathematical modelling is a good instrument to deliver that,” said Prof. Zahir Tandjou (GB) in his lecture “Which antibiotics in what indication? The role of mathematical modelling.” “Surveillance studies are highly important to derive that information to summarise the dynamic process which will help us improve our decisions.”

By Look Keizer

“Guidelines have to be improved. To be improved, they have to be criticised. If they are well criticised, it’s an improvement.” These are the words of Prof. Nicolas Mottet (FR), chairman of the EAU Guidelines panel for Prostate Cancer.

Mottet hailed the EAU Guidelines Controversies specialty session held yesterday as a very positive development in the discussion of the EAU Guidelines. The session was organised as four four-hour-long debates between a moderator, two opposing views, a third, independent review and much audience discussion and voting. It drew large crowds, particularly when combining systemic treatment of metastatic prostate cancer was discussed.

Examining the Guidelines
“It’s not always possible for us to detail all the arguments that support what we write in the EAU Guidelines.” Mottet explained. “It’s nice to have a sense like this, where we can explain our position, particularly when they are hot topics, like bladder preservation vs. removal. It’s good to hear arguments in favour and against, and then somebody completely outside of that paradigm, particularly when they talk methodology.”

Information: Crucial in antibiotic stewardship
ESAU-ESIU course highlights antimicrobial resistance

By Jan Tidman

Dr. Dimitris Deligiannis (GR), supported by Team Greece, emerged victorious in the third and final round of the cup EAU Guidelines Cup, a new multiple-choice quiz game that examined which EAU member knows the EAU Guidelines the best.

The contest was hosted by the Young Urologists Office (YVO) and European Society of Residents in Urology (ESRU) as part of YVO2018. Prior to the annual congress, the first and second rounds took place online through multiple-choice questions. 450 contestants were whittled down to 25, and then the final three.

Introduced to the sounds of “Eye Of The Tiger”, Turri, the third place winner, and Dr. Rodríguez-Monsalve Herrero (ES), the audience announced to a soundtrack of “Eye Of The Tiger” and Team Italy. The audience also heard congratulations on becoming a father, Dr. José Medina-Polo (ES) in his lecture Collateral effects of antibiotic treatment and how to minimise them (C. difficile and multidrug-resistant pathogens).

Training focused on multidrug-resistant organisms (MDRO), local microbial prevalence, resistance patterns, and prescription of antibiotics is imperative, as are antimicrobial stewardship programmes dedicated to improving antibiotics. These programmes have demonstrated a reduction in the incidence of infections as well as the isolation of MDRO bacteria and C. difficile infections.

Medina-Polo added that the prescription of antibiotics should be adequately indicated and justifiable in order to avoid the use of broad-spectrum antibiotics. He said that perioperative antibiotic prophylaxis and postoperative antibiotic treatment are still widely used and need to be revised.

Mathematical modelling “We need to improve antibiotic selection. In this sense, mathematical modelling is a good instrument to deliver that,” said Prof. Zahir Tandjou (GB) in his lecture “Which antibiotics in what indication? The role of mathematical modelling.” “Surveillance studies are highly important to derive that information to summarise the dynamic process which will help us improve our decisions.”

By Look Keizer

“Guidelines have to be improved. To be improved, they have to be criticised. If they are well criticised, it’s an improvement.” These are the words of Prof. Nicolas Mottet (FR), chairman of the EAU Guidelines panel for Prostate Cancer.

Mottet hailed the EAU Guidelines Controversies specialty session held yesterday as a very positive development in the discussion of the EAU Guidelines. The session was organised as four four-hour-long debates between a moderator, two opposing views, a third, independent review and much audience discussion and voting. It drew large crowds, particularly when combining systemic treatment of metastatic prostate cancer was discussed.

Examining the Guidelines
“It’s not always possible for us to detail all the arguments that support what we write in the EAU Guidelines.” Mottet explained. “It’s nice to have a sense like this, where we can explain our position, particularly when they are hot topics, like bladder preservation vs. removal. It’s good to hear arguments in favour and against, and then somebody completely outside of that paradigm, particularly when they talk methodology.”

The course is part of the joint meeting of the EAU Section of Andrological Urology (ESAU) and the EAU Section of Infections in Urology (ESU) “When Basic Science meets Clinic Practice” chaired by Prof. Nicolas Mottet (FR) and Prof. Florian Wagenlehner (DE).

Antibiotics alternatives
Ass. Prof. Björn Wullt (SE) enumerated various alternatives to antibiotics for treating acute urinary tract infection (UTI) which ranged from observation (“wait and see”), NSAIDs (Nonsteroidal Anti-Inflammatory Drugs) and increased fluid intake (although these require further study) to Canephroph, a phytopharmaceutical medicinal product for which study results will be published soon.

In his lecture “Non-antibiotic treatment and prevention in uncomplicated cystitis,” Wullt also mentioned that Mottet was referring to the presence of Dr. Laurence Collette (BE) in the debate on prostate cancer. Dr. Collette is the Chief Statistician for the EORTC. Following a debate between Prof. Noel Clarke (GB) and Dr. Philip Conford (GB) on the merits of combining systemic treatments for every patient or only a small selection, Dr. Collette weighed in on the data that both discussants were citing: “How much does the subgroup contribute to the full picture? We should consider the percentage of events, rather than the patients.” In the example of the CHAARTED trial, low volume disease accounted for 35% of the patients, but only 25% of events in its latest update. Definitions of “high volume disease are also debatable, relying on bone scans alone, distinguishing aggressive vs. slow-growing disease, and so on.

Based on the audience’s votes before and after this particular debate, it seems Dr. Collette swayed many of those present. Before the debate, the audience was split almost evenly between four possible answers to a question about newly-diagnosed M0 disease (enlarged retroperitoneal nodes only): ADT combined with Abraxane acetate, ADT combined with Docetaxel, either drug or ADT only. Following the debate, nearly half of the audience voted for the third option, a combination of ADT and either drug.
Male-to-female transgenders have better quality of life perception and reported improved psychosocial conditions following surgery, according to a study conducted in Germany.

The researchers developed a transgender-specific questionnaire which confirms for the first time that gender surgery significantly improves quality of life for the majority of patients. The study showed that 80% of male-to-female patients perceived themselves as women post-surgery. However, the quality of life of transgender individuals is still significantly lower than the general population. Many transgender individuals request gender reassignment surgery, but until now there only existed information on general aspects of health related quality of life (QoL) and non-validated questionnaires about improvement of QoL.

Led by Dr. Jochen Hess, the researchers surveyed 156 patients for an average of more than six years after surgery. They developed and validated the new Essen Transgender Quality of Life Inventory (ETLI), the first surgery. They developed and validated the new Essen Transgender Quality of Life Inventory (ETLI), the first surgery.

The team noted limitations to the study: there was a high drop-out rate and the results are from the single centre. “Nevertheless, we now have the first specific validated tool for measuring QoL in transgender patients. We hope that this means that we can go forward to gather better information to help us improve treatment”, said Hess.

“With the good news that we found that around three-quarters of patients showed a better quality of life after surgery, 80% perceived themselves to be women, and another 16% felt that they were ‘rather female’. Three women in four were able to have orgasms after reassignment surgery,” said Hess.

“Very important that we have good data on Quality of Life in transgender people. They generally suffer from a worse QoL than non-transgender population, with higher rates of stress and mental illness, so it’s good that surgery can change this, but also that we can now show that it has a positive effect,” he added.

“Until now we have been using general methods to understand quality of life in transgender individuals, but this new method means that we can address well-being in greater depth”. Recent data estimates that 2.1 million adults in the USA identify as transgender, which is about 0.6% of the population.

Comparable European figures are not available, but there is wide variation between reported prevalence in individual European countries. Transgender individuals have seen greater visibility in recent years due to the openness of personalities such as Caitlin Jenner, Chelsea Manning, and Andreja Pejic.

The researchers developed a transgender-specific surgery significantly improves quality of life for the majority of patients. They request gender reassessment surgery, but until now there only existed information on general aspects of health related quality of life (QoL) and non-validated questionnaires about improvement of QoL.

The study showed that 80% of male-to-female patients perceived themselves as women post-surgery. However, the quality of life of transgender individuals is still significantly lower than the general population. Many transgender individuals request gender reassignment surgery, but until now there only existed information on general aspects of health related quality of life (QoL) and non-validated questionnaires about improvement of QoL.

Led by Dr. Jochen Hess, the researchers surveyed 156 patients for an average of more than six years after surgery. They developed and validated the new Essen Transgender Quality of Life Inventory (ETLI), the first surgery.

The team noted limitations to the study: there was a high drop-out rate and the results are from the single centre. “Nevertheless, we now have the first specific validated tool for measuring QoL in transgender patients. We hope that this means that we can go forward to gather better information to help us improve treatment”, said Hess.

“With the good news that we found that around three-quarters of patients showed a better quality of life after surgery, 80% perceived themselves to be women, and another 16% felt that they were ‘rather female’. Three women in four were able to have orgasms after reassignment surgery,” said Hess.

“Very important that we have good data on Quality of Life in transgender people. They generally suffer from a worse QoL than non-transgender population, with higher rates of stress and mental illness, so it’s good that surgery can change this, but also that we can now show that it has a positive effect,” he added.

“Until now we have been using general methods to understand quality of life in transgender individuals, but this new method means that we can address well-being in greater depth”. Recent data estimates that 2.1 million adults in the USA identify as transgender, which is about 0.6% of the population.

Comparable European figures are not available, but there is wide variation between reported prevalence in individual European countries. Transgender individuals have seen greater visibility in recent years due to the openness of personalities such as Caitlin Jenner, Chelsea Manning, and Andreja Pejic.
Phenotyping overactive bladder
On the way to tailored treatment

Overactive bladder (OAB) has been formally defined in 2002 by the International Continence Society (ICS) as urgency, with or without urge incontinence, usually with frequency and nocturia.

On the one hand, this definition has certainly been beneficial by raising awareness of the medical community about storage lower urinary tract symptoms and their impact on quality of life, by facilitating clinical research in the field, and have had even a bigger impact through regulatory authorities (drug licensing), companies market access pathways, patient information websites content or scientific societies actions and research. However, on the other hand, this broad definition could now appear as being more misleading than anything else and it has been the main driver of “standardised treatment” paradigms where the symptoms, after the physicians has dismissed urological/neurological alternative causes through a minimal work-up, are classified as “idiopathic” OAB expecting the diagnosis would be confirmed through an ex-juvantibus management.

The high discrimination rates of OAB medications (including Betaxolol-gonadotropins) from the first months after ex-juvantibus management, are classified as “idiopathic” OAB and urothelium/suburothelium dysfunctions, as research. However, on the other hand, this broad websites content or scientific societies actions and community about storage lower urinary tract symptoms 2002 by the International Continence Society (ICS) as urgency, with or without urge incontinence, usually with frequency and nocturia.

Pathogenesis. Increasing evidence over the past few years have shown that metabolic syndrome, affective disorders, sex hormones deficiencies, urinary microbiota, gastrointestinal functional disorders, subclinical autonomic nervous system dysfunctions may favor OAB and that OAB could have its own specific pathophysiology in all of these frameworks.

A “Piram” spectrum approach (Figure 3) could help identify these various OAB pathophysiological features using through clinical examination, urodynamics and likely several additional testings in the near future such as urinary markers, functional brain imaging, autonomic nervous system testings, quantitative sensory testings, serum assessments of cytokine-releasing factor, testosterone,.....

There is probably not one “single” idiopathic OAB syndrome but rather numerous non-neurogenic OAB phenotypes based on underlying mechanisms and pathophysiological co-factors/co-morbidities supporting a paradigm shift in OAB towards treatments tailored to individual patient characteristics. However, there seems to currently a lack of consensus techniques for assessing the relevant pathophysiological features of OAB and future studies are needed in this field.

Likewise, we believe that forthcoming studies should assess the outcomes of the various treatments available nowadays in each different OAB subpopulations because the outcomes of each treatment are mostly on disease features and patient’s profiles. Pharmaceutical companies may be less inclined to promote trials assessing the outcomes of drugs in subgroups of patients because it would divide the potential subsequent market without decreasing studies-related costs.

Hence, it behooves the urological community to promote such studies. Finally, from a public health standpoint, the cost-effectiveness of a tailored vs. a “one-size fits all” treatment approach is still elusive and should be taken into consideration.

References

Figure 2: Various anatomical origins of urgency

Figure 3: The diagnosis “piram” approach of non-neurogenic OAB

EUA 2018, COPENHAGEN, 16-20 MARCH 2018, IPSEN SATELLITE SYMPOSIUM
Optimising patient management in urogenital cancers
Chaired by Dr Maria Ribal (Spain), on Saturday 17 March

Dr Peter Bruch Böndgren (Sweden)
The significance of testosterone and gonadotropin suppression in advanced prostate cancer treatment
Achieving the lowest levels of testosterone possible, combined with endocrine suppression, has been shown to delay disease progression and increase overall survival in men with advanced prostate cancer. Dr Böndgren presented data from a recent study, which demonstrated that endocrine deprivation therapy (24-week tamoxifen + bicalutamide) resulted in significantly lower testosterone levels compared with subcutaneous estradiol in advanced prostate cancer.

Professor Morgan Rouprêt (France)
Predicting the future of P00: blue sky or dark clouds
Prof. Rouprêt provided an overview of the future of imaging modalities in urothelial cancer bladder (UCMB). Traditional imaging techniques, such as photodynamic diagnosis (PDD), can help to identify suspect lesions, which may result in occasional invasive detection. In addition, new optical diagnostic tools can provide real-time information on tumour microenvironment and guide to help differentiate between tumour type and guide treatment decisions.

Professor Petri Reijnen (Netherlands)
Current strategies and future challenges in 2nd line therapy in advanced RCC
Led by Prof. Reijnen, this interactive presentation focused on two patients with advanced RCC who had progressed following 1st line vascular endothelial growth factor (VEGF)-targeted therapy. An overview of current treatment guidelines in this setting, clinical data from recent clinical trials of targeted therapies and immunoncology agents, were presented and discussed.

Please visit the Ipsen booth E15

Sunday, 18 March 2018
BAVARIAN NORDIC IS STRIVING TO BRING NOVEL TARGETED VACCINES TO MAXIMIZE IMMUNOTHERAPY IMPACT FOR CANCER PATIENTS

Our innovative oncology platform is designed to specifically target a variety of challenging tumor types. We have developed a portfolio of active cancer immunotherapies, designed to alter the disease course by eliciting a robust and broad anti-cancer immune response while maintaining a favorable risk-benefit profile.

Multiple clinical trials are ongoing in collaboration with the NCI, NIH, academia and industry partners. Through numerous industry collaborations, we seek to explore the potential synergies of combining our immunotherapies with other immune-modulators.
Multimodal MRI (mMRI) of the prostate allows for high-quality lesion detection and characterization of the entire prostate gland. It has been shown to improve the detection of significant prostate cancer (sPCa)\(^{1}\) with a more accurate Gleason score (GS)\(^{2}\).

Lesions identified on mMRI can be stratified by suspicion and targeted by selected mMRI-guided TBx for improved diagnostic accuracy.\(^{3}\) With this ability to highly suspect areas on mMRI, TBx are increasingly accompanying or replacing multiple random TRUS\(^{\text{a}}\) cores (Figure 1).

**Figure 1:** The poor prostate gland reveals lesions with different characteristics, allowing for targeted TBx guided by mMRI. In the example shown, the hyperintense region (blue cores) often leads to misdiagnosis of high-grade cancer and inadequate sampling of the most aggressive part (black area) leading to possible Gleason score undergrading. In addition, the flooded length of the TRUS\(^{\text{a}}\) cores leads to undersampling of the anterior part. Targeted biopsies (red cores) can be guided by MRI for improved diagnostic accuracy.

### MRI fusion biopsies: Usability and future prospects

MRI/TRUS fusion biopsies offers benefits in targeted biopsies despite challenges in accuracy and costs

Dr. Lars Boesen  
Deg. of Urology  
Herlev University Hospital  
Herlev (DK)

---

**Table 1:** MRI/TRUS fusion platforms presented at the thematic Session 08 “Overview of fusion biopsy devices” (with reservations to non-complete descriptions)

<table>
<thead>
<tr>
<th>Trade name</th>
<th>TRUS image</th>
<th>Tracking</th>
<th>biopsy route</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>MRM-Symphony / 3Dvision</td>
<td>Semi-automatic contouring</td>
<td>Electromagnetic tracking with elastography</td>
<td>Transrectal / transperineal</td>
<td>Predictive fusion, free hand transrectal manipulation</td>
</tr>
<tr>
<td>BioJet</td>
<td>Manual sweep with fixed probe</td>
<td>Mechanical arm with encoder; fixed probe stepper</td>
<td>Transrectal / transperineal</td>
<td>Predictive fusion, hand transrectal manipulation</td>
</tr>
<tr>
<td>Ascendus / H-RVS</td>
<td>Real-time manual TRUS, 3D volumetry</td>
<td>Electromagnetic tracking with elastography</td>
<td>Transrectal / transperineal</td>
<td>Predictive fusion, free hand transrectal manipulation</td>
</tr>
<tr>
<td>BioBot</td>
<td>Automatic sweep</td>
<td>Robotic mechanical arm, organ-based 3D fusion biopsy planning</td>
<td>Transperineal</td>
<td>Elastic registration, manual contouring, Automatic needle positioning</td>
</tr>
<tr>
<td>Uniax</td>
<td>Manual freehand biopsy</td>
<td>Electromagnetic tracking with external generator, 3D navigation</td>
<td>Transrectal</td>
<td>Free hand transrectal manipulation</td>
</tr>
</tbody>
</table>

---

**References**


---

**Sunday 18 March**

10.31-12.00: Theme Session 08: Overview of fusion biopsy devices
External genital reconstruction in paediatric urology is challenging. Hypospadias, epispadias with or without bladder exstrophy (Bladder Exstrophy Epispidias Complex BEEC) and disorders of sex development (DSD) are among the most difficult problems encountered by paediatric urologists that require a lot of experience and are best treated by a multidisciplinary approach.1,2

In this group of patients management is complex and there is much disparity in the surgical correction techniques. More than 300 different techniques with a wide variety of modifications have been introduced for the treatment of these anomalies.3-5

Concerning the tremendous effect of the genitourinary reconstruction on adult life, the evaluation of the long-term results of different techniques in genitoplasty in paediatric are of the utmost importance. The complications of these reconstructive techniques can take decades before becoming evident.6,7 The pubertal growth can alter the final functional and cosmetic aspects of the corrected genitalia. Moreover, the psychosocial development is only completed after the puberty, so the psychological and sexual function of patients who have undergone genital reconstruction can only be evaluated after puberty.8,9

Considering the fact that as the patients grow up the cosmetic aspect becomes equally if not more important than function, more attention should be paid to the aesthetic results in the long-term.10 Genital and reproductive functions have a great effect on the quality of life in adult patients with penile anomalies in childhood.10 However, most published studies have reported only short-term results in pre-pubertal patients with very few studies on the long-term results focusing on the cosmetic and psychosocial outcomes of these surgeries in adulthood.11

This article presents the available long-term outcomes of genitoplasty in childhood specifically focusing on the cosmetic, psychosocial and functional results. These data are based on a review published in 2011 to which recent relevant studies are added. There is paucity of data on long-term effect of different genital reconstruction techniques during childhood due to lack of validated measurement tools and validated questionnaires and high loss of patients during follow up. Very few studies have investigated the different outcomes of these surgeries in long-term especially after puberty and adulthood.12

Hypospadias

The selected studies suggest that patients who underwent hypospadias surgery are less satisfied with their urinary function compared with controls and they usually experience spraying, post-void dribbling and urinary stream deviation that are more prominent in patients with a history of severe and proximal hypospadias. Dissatisfaction about the sexual function and appearance of penis is more prevalent in these patients than in controls in adulthood.13

Table 1: Overview of outcomes in mild and severe hypospadias

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mild hypospadias</th>
<th>Severe hypospadias</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cosmesis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower urinary tract function</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psycho-Sexual functioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of life</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome research</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

BEEC

From the selected studies only few are on long-term and report on psychosocial outcome. In general “dryness” can be achieved, however, at the price of intermittent catheterisation through a continent stoma in more than half of the patients. In general, sexual function is impaired mainly due to the penile length, BEEC impacts self-esteem, sexuality, body image and relationships in up to 50% of patients. Half of the patients miss experience of sexual intercourse either due to technical incapability or secondary to psychosocial problems. A summary of the available studies is given in Table 2.

Lower urinary tract function and quality of life score neutral while cosmetic outcome and psychosocial outcome score bad. There is only exceptional qualitative research on outcome, so this scores bad.

DSD

Very scarce studies have reported the long-term outcomes of genital reconstruction in DSD patients, but what can be noted in these studies is the low rate of satisfaction with their sexual function in adulthood. The most frequent complaints among these patients is the short penile length in comparison with unaffected people. Fertility issues add negatively to this low satisfaction. A summary of the available studies is given in Table 3. Lower urinary tract function and quality of life score neutral while cosmetic outcome and psychosocial outcome score bad. There is no qualitative research on long-term outcome, so this scores bad.

Long-term studies needed

Regarding the presented data in this review presentation, further controlled long-term studies are needed to select best techniques for these groups of patients and to provide better consultation of parents for the future of their children before advising any surgeries.

More attention should be paid to the impact of reconstructive techniques on psychosocial development and cosmetic aspect after puberty, as these factors play a crucial role in later quality of life in these subgroups of patients. Most studies that have been reviewed for this presentation do not report the mean number of follow-up years after the reconstructive surgery and instead report the mean age at the follow-up as an indication of the post-pubertal and long-term evaluation. This can be noted as a major critique to these studies and future studies need to pay attention to the present defect. One point should be emphasized that surgeons should describe the pre-operative findings in more detail and also be more structured while evaluating the post-operative results in follow up visits.

Without long-term follow-up evaluation of genital reconstructions in childhood with precise description of pre and post-operative data, no technique can be considered as the gold-standard in the management of patients with penile anomalies during infancy.

Table 2: Overview of Outcomes in BEEC

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mild hypospadias</th>
<th>Severe hypospadias</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cosmesis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower Urinary tract function</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychosexual functioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of life</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome research</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Overview of Outcomes in DSD

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Mild hypospadias</th>
<th>Severe hypospadias</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cosmesis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lower Urinary tract function</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychosexual functioning</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality of life</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outcome research</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Laparoscopic surgery was introduced in urology in the early 1980s. It took about a decade for urologists to be convinced and change their everyday practice from open surgery to laparoscopic approach.

The main reasons for this delay included “resistance” to innovation, lack of certified training centers capable of releasing the “first” highly trained generation of urologists, who, in turn, would be responsible for the training of the younger trainees, step by step training curriculum, the occurrence of “complications” and the rising difficulty for a “mainly” open surgeon to deal with them.

“Modern era” of pure laparoscopy very quickly faced the advent of the robotic consoles that combined the already achieved laparoscopic experience with the 3D vision and the benefits of the so-called “surgical” freedom that made reconstruction easier even for the novice laparoscopic surgeon.

Despite the aforementioned difficulties “pure laparoscopy” clinical and training programs still run all over the world and surgeons are inevitably confronted with complications. The best way to deal with complications is to prevent them from occurring. However, when they occur it is crucial to recognize them early, ideally intraoperative, and repair them immediately.

Reducing complication rates
Proper training during residency and a dedicated postgraduate fellowship are of paramount importance to reduce complication rate. Even after proper training, mentoring during the first cases is also very important.

When preparing for a procedure, the surgeon should be responsible in creating a dedicated operating team including the anesthesia and specially trained nurses. The operating team and the staff surgeon should check the patient prior to surgery and the insertion of the Veress needle may be needed in severe cases.

As in every type of surgery, the laparoscopic urologist needs to follow a checklist before starting an operation (Table 1). Starting the operation by checking the operating room set-up, the instrument’s availability and performance is mandatory. Proper training during residency and a dedicated postgraduate fellowship are of paramount importance to reduce complication rate. Even after proper training, mentoring during the first cases is also very important.

Table 1: Check list prior to a laparoscopic operation

<table>
<thead>
<tr>
<th>The Laparoscopic Urologist Should:</th>
<th>How do you avoid an IE'Artery' injury?</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Thoroughly inform and give ample time to the patient and family.</td>
<td>• Port size Port design Previous Surgery</td>
</tr>
<tr>
<td>• Provide details regarding the nature of the disease, the procedure, the laparoscopic approach, the existing alternatives, the risks and the likelihood of complications.</td>
<td>• Provide details regarding the nature of the disease, the procedure, the laparoscopic approach, the existing alternatives, the risks and the likelihood of complications.</td>
</tr>
<tr>
<td>• Give reassurance that the patient safety comes first.</td>
<td>• Feel confident with the selected approach;</td>
</tr>
<tr>
<td>• Feel confident with the selected approach;</td>
<td>• Know the patient and the surgical problem;</td>
</tr>
<tr>
<td>• Think in advance about the possibility of a complication related to the procedure;</td>
<td>• Discuss with the patient and the surgical problem;</td>
</tr>
<tr>
<td>• Ask himself whether he knows how to handle a complication should it occur.</td>
<td></td>
</tr>
</tbody>
</table>

To avoid anesthetic complications, keep intra-abdominal pressures below 15 mmHg, avoid the creation of subcutaneous emphysema and reduce the operation time. Very rarely, a carbon dioxide gas embolus occurs. The surgeon and the anesthetist should think about it when there is a decrease in end-tidal CO2 and end-tidal O2 along with a decrease in patient’s blood pressure intra-operatively. The surgeon should try to avoid this complication by reducing the intra-abdominal pressure and the operation time. Immediate desufflation is mandatory. Place the patient in Duran’s position and ask the anesthetist to make the appropriate ventilator adjustments. Absorption of CO2 through the superior vena cava may be needed in severe cases.

Access to the peritoneal cavity or to the retroperitoneal space can be performed either by the Veres needle or the Hasson technique. Vascular and bowel injuries have been reported during access. Several factors may predispose to access related complications (Table 2). To prevent access-related complications avoid areas with previous scars, lift the abdomen (peritoneum) prior to Veres needle insertion, use the open technique to get access, use non-bladed trocars with endoscopic guided ports (Visiport), insert trocars without tension and under direct vision, and always inspect abdomen after Veres needle and trocars are positioned.

Table 2: Factor predisposing to access-related complications

<table>
<thead>
<tr>
<th>Patient parameters</th>
<th>How do you avoid an IE'Artery' injury?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obesity</td>
<td>• Port size Port design Previous Surgery</td>
</tr>
<tr>
<td>Previous Surgery</td>
<td>• Provide details regarding the nature of the disease, the procedure, the laparoscopic approach, the existing alternatives, the risks and the likelihood of complications.</td>
</tr>
<tr>
<td>Surgeon Experience</td>
<td>• Know the patient and the surgical problem;</td>
</tr>
<tr>
<td>Port design</td>
<td>• Discuss with the patient and the surgical problem;</td>
</tr>
<tr>
<td>Port size</td>
<td>• Ask himself whether he knows how to handle a complication should it occur.</td>
</tr>
<tr>
<td>Blunt/cutting/radially expanding edges</td>
<td></td>
</tr>
</tbody>
</table>

Avoid inserting trocars in the pararectus line (1-2cm lateral from the midline) to prevent an epigastric artery injury (Figure 2). If the artery is torn leave the trocar in place and treat immediately. Hemorrhage can be easily tamponaded with the cannula. If necessary, a Foley catheter can be passed through the port site and drawn back to tamponade the vessel. For more significant bleeding, dissect a figure-eight stitch with a 2/0 Vicryl or is-o-nice long suture, on a C-T 1 needle should be placed above and below the non-bladed trocars with endoscopic guided ports (Visiport), insert trocars without tension and under direct vision, and always inspect abdomen after Veres needle and trocars are positioned.

Major vascular injury can happen in 1-3% of the cases during laparoscopic urologic surgery with 0.5-1% uncontrollable bleeding. Prevention and high level of vigilance is paramount. To avoid major vascular injury get familiar with the anatomy and anticipate the structures while dissecting the tissues, ensure proper entry to the abdominal cavity, respect the anatomy, mobilize and retract the tissues thoroughly and do not work through “holes”. Moreover, think about the physiologic. When you dissect the renal hilum and you have clipped the renal artery, check whether the renal vein looks “empty” or not. If not, this means that you have to search for another artery to ligate. Working on a difficult hilum, instead of “digging” around the renal vein to identify the renal artery, you can ligate “everything” behind the vein first or on block ligate the renal hilum with an endo-GIA stapler. When you choose the latter approach make sure that you mobilize the hilum preferably at its lower and upper parts before ligation.

Vascular injury
Abdominal vascular injury can happen in 1-3% of the cases during laparoscopic urologic surgery with 0.5-1% uncontrollable bleeding. Prevention and high level of vigilance is paramount. To avoid major vascular injury get familiar with the anatomy and anticipate the structures while dissecting the tissues, ensure proper entry to the abdominal cavity, respect the anatomy, mobilize and retract the tissues thoroughly and do not work through “holes”. Moreover, think about the physiologic. When you dissect the renal hilum and you have clipped the renal artery, check whether the renal vein looks “empty” or not. If not, this means that you have to search for another artery to ligate. Working on a difficult hilum, instead of “digging” around the renal vein to identify the renal artery, you can ligate “everything” behind the vein first or on block ligate the renal hilum with an endo-GIA stapler. When you choose the latter approach make sure that you mobilize the hilum preferably at its lower and upper parts before ligation.
Managing complications during laparoscopy...

Continued from page 8

Avoid injury of the liver or spleen by careful insertion of the initial trocar and by careful retraction and mobilization of these two organs. Compression alone can be enough to manage minor injuries of the liver and spleen. Whenever laceration arises employ electro cautery or argon beam diathermy (120-150 Watts) and/or hemostatic and observe for 10-15 minutes. Reduce the intrabdominal pressure at the same time. In case of more severe bleeding you can select the optimal level of pneumoperitoneum to 5mmHg and ask the anesthetist to give 10-15 large insufflations through the ventilator. Concomitantly, tie the stitch down and pull the catheter. When the pneumothorax is realized postoperatively, it occupies <30% of the pleural cavity and the patient is stable, the CDI will be absorbed spontaneously without requiring any treatment. When the pneumothorax is >30% or the patient is unstable a chest tube is necessary.

Anticipating complications

Most of the complications can be anticipated and potentially avoided. As in every surgery the following general principles to prevent complications also apply to laparoscopic surgery:

- Check the anatomy
- Provide optimal exposure (i.e. an additional trocar)
- Use a wide dissection rather than a deep one
- Provide good visualization

Editorial Note: Due to space constraints, the reference list can be made available to interested readers upon request by sending an email to: communications@uroweb.org

Saturday 17 March

10.25-10.50: Joint meeting of the EAU Section of Oncological Urology (ESOU), the EAU Robotic Urology Section (EURUS), the EAU Section of Urethral Pathology (EUSU) and with the ESOU, ESTRO, EUUG, EORTC GUIG and SUIG

Complications in treatment of urological cancers

One of these promising strategies is multiparametric MRI (mpMRI) and an MRI guided or MRI/TRUS fusion biopsy. We had the privilege in our institution to implement such a technology in our routine practice. Thus, we offered, since 2012, mpMRI for every patient presenting with a clinical suspicion of prostate cancer, and in the case of a suspected lesion, an MRR/TRUS fusion targeted biopsy using the Koelsch system followed.

At the beginning of our experience, enthusiasm for such an approach was high, and we elected our approach to be the new gold standard for every patient presenting with a clinical suspicion of prostate cancer in part because of the following:

First, we have noticed that mpMRI/TRUS fusion biopsy results in a better distribution of sampling with respect to patient prostate anatomy. This allows biopsy cores to be distributed homogeneously and symmetrically in the 3D space of the prostate.

"...in our study, MRR/TRUS fusion biopsy protocol improved prostate cancer detection rate compared to 2D TRUS guided protocol and demonstrated higher detection rate of clinically significant disease..."

This better sampling is due to "organ tracking" - that is the visualization of the metallic biopsy needle indwelling in the real volume of the prostate and monitoring of each biopsy core as a reality- and not as a fictive representation of a cognitively, operator-dependent, mental distribution under the 2D TRUS plane. This better sampling allowed, by itself, in our practice better detection rate of clinically significant prostate cancer compared to 2D TRUS guided biopsy in the primary setting.

...Second, histologic information gained from 3D biopsies showed longer cancer core length than standard 2D TRUS biopsies. This results from the inability of 2D to over-sample different areas of the prostate rather than to cluster all biopsies to posterosentral peripheral zones.

Risk stratification systems used nowadays are based on the number of positive cores or the proportion of a core involved with cancer, then a man with disease classified as low-risk on standard biopsy may have that same disease classified as intermediate- or higher-risk disease on a 3D biopsy.

Third, MRR/TRUS fusion biopsy had yielded in our series an overall cancer detection rate of 62.9%, that is higher than most of the studies reporting on standard biopsy.

In addition, in our study, MRR/TRUS fusion biopsy protocol improved prostate cancer detection rate compared to 2D TRUS guided protocol and demonstrated higher detection rate of clinically significant disease with fewer tissue samples removed from lesions. The yield of targeted biopsies was significantly higher than standard biopsies with a ratio of 28.9% of cancer on targeted cores compared to 9.8% of cancer on standard cores. Our data are even more encouraging when comparing clinically significant prostate cancer detection rate between the two protocols; 20 patients with clinically significant disease on targeted cores had either no cancer or clinically insignificant disease on standard cores, and 11 patients with no cancer on targeted protocol had clinically insignificant disease on standard cores.

In contrast, one patient with clinically significant disease on standard protocol had a negative biopsy. From a low suspicion lesion on the targeted protocol and five patients with no cancer on standard protocol had a clinically insignificant cancer on targeted protocol. Therefore, MRR followed by MRR-targeted biopsy had resulted in fewer but better biopsies in our center.

Fourth, in patients with an enlarged prostate (> 50 mL in size) our analysis demonstrated that 25% of patients could be spared unnecessary biopsies if a subset of patient could benefit from a pre-biopsy mpMRI.

The aim of such an approach is to avoid unnecessary biopsies in some patients and to improve the detection yield of clinically-significant disease in others with enlarged prostate, prior negative biopsy or a low clinical suspicion of prostate cancer are good candidates for a pre-biopsy mpMRI. Patients suitable for active surveillance could also benefit from mpMRI.

Patients with anterior lesion or small index lesion on mpMRI as well as patients with clinically indolent disease or prior negative biopsy should be preferably sampled by an MRR-targeted approach.

References


"Prostate whole mounted histology demonstrate clearly that prostate cancer is not a round structure such as demonstrated by radiological contouring and that mpMRI tends to underestimate prostate cancer volume."

Limitations

As our experience with mpMRI and MRR/TRUS fusion biopsy matures, we noticed several limitations. Several significant cancers detected by systematic sampling were sometimes missed by mpMRI in our center. Are MRR/TRUS invisible tumor or misreading?

Additionally some of the suspected region of interest is very difficult to sample even with the most sophisticated technology that we have especially when the region of interest is small in an enlarged prostate or in a difficult location. The heterogeneity of the index lesion and the number of cores to be taken per index lesion remains to be elucidated.

Prostate whole mounted histology demonstrate clearly that prostate cancer is not a round structure such as demonstrated by radiological contouring and that mpMRI tends to underestimate prostate cancer volume.

Furthermore, it is non-negligible to have several index lesion with the smallest harboring the most aggressive disease. It is noteworthy to mention that the majority of published data have come from excellent center with extensive experience with mpMRI. These results may not be reproducible in less experienced centers. The availability of mpMRI is also another limitation.

The issue of costs and health care value should definitely be considered. Despite the standardization of the characterization of the index lesion in the PIRADs score, inter-observer variability is not uncommon in clinical practice. Furthermore, the long-term impact of such an approach is not well determined.

In 2018, we think that it is too early to make recommendations on the routine use of pre-biopsy mpMRI in biopsy-naive patients. However, we do live in an era of evidence-based medicine where personalized approach is gaining popularity. That's why a subset of patient could benefit from pre-biopsy mpMRI.

A subset of patients could benefit from pre-biopsy mpMRI to avoid unnecessary complications.
Stop Guessing. Start Knowing.

PDD – flexibility in visualization with IMAGE1 S™
Radiomic TRUS - A new era

Urologic transrectal ultrasound (TRUS) was the first imaging modality evaluating the prostate enabling lesion guided targeted biopsies. TRUS-guided systematic biopsies (sBx) have been and are the standard in prostate-based prostate cancer detection. However, systematic biopsies, frequently called “TRUS biopsies” have nothing to do with modern TRUS real-time lesion targeted biopsies of the prostate (Figure 1).

Today, quantitative computer analysis with artificial intelligence (ANNA) of modern high frequency (7-29 MHz) computer-tomographic ultrasound (US-CT) has opened a new way of objective image interpretation of the prostate. These “Radiomic” approaches are based on big data analysis providing information that is unavailable by visual interpretation.

Multimodal, multi-parametric ultrasound (mpUS) approaches, have been introduced allowing interpretation with excellent results. Individual US techniques provide better results than the individual parameters of mpUS (Figure 2).

ANNA/C-TRUS is a useful method for the diagnosis of prostate cancer and monitoring patients suspicious for PCa. What does that mean?

After 12 years of follow-up 15 out of 71 patients were finally diagnosed with PCa. Of them, only 2 suffered from aggressive tumors which were radically treated. All of the patients are alive up to this day and no clinical tumor recurrence has been recorded, making ANNA/C-TRUS a safe monitoring method.

What is ANNA/C-TRUS

ANNA/C-TRUS is a novel, decision support tool for transrectal ultrasound guided 12 core systematic biopsy. Otherwise, 12-core systematic biopsy demonstrating ASAP and/or extensive HGPIN.

How can I prove true biopsy rates?

To obtain meaningful data about the true number of missed PCa (false negatives), a radical prostatectomy immediately after negative diagnostics would be the only way to find out; this, of course, is not acceptable. The only other option is to follow-up for at least 10 years, which seems prudent to identify a negative effect of a missed tumor.

12-Year follow-up study of ANNA/C-TRUS

A subset of 71 ANNA/C-TRUS patients were pre-enrolled starting in 2000. Inclusion criteria were a median PSA of 4.55 ng/ml and abnormal DRE, follow-up was extended to 5 year. Criteria for biopsy included a continuous PSA rise, a suspicious DRE, or a prostate volume > 75.5 years (62–85), median prostate volume is 65 cc (36–125) and median PSA is 6.95 ng/ml (1.37–22.7) and of one and two systematic biopsy sessions, respectively.

During every biopsy session, only six probes were used to target biopsies according to the radiomics (ANNA 2.0), otherwise called artificial intelligence (ANNA) of modern high frequency (7-29 MHz) computer-tomographic ultrasound (US-CT). Furthermore, a significant reduction of psychological and physical stress for the patient and urologist.

Outcomes after 12 years

Fifty-six patients remained free of tumor, and are still living up to the day. Of them, only 2 suffered from aggressive tumors which were radically treated.

The RCT revealed a better rate of prostate cancer detection in AI-US-CT-targeted 6-core biopsy group compared to TRUS-guided 12-core systematic biopsy and mpMRI assisted 12-core systematic biopsy. This data suggests that the 12-core systematic biopsy may be replaced by 6-core AI-US-CT targeted biopsy for detection of prostate cancer in the future.

What is that mean?...
In collaboration with the EAU Research Foundation, a prospective registry has been recently started to collect data on patients with small, incidentally detected, histologically confirmed renal cell carcinomas (RCCs) who are managed with active surveillance (AS). This observational registry is called European Active Surveillance of Renal Cell Carcinoma (EASE) study.

At 1 pm today (Meeting Room 14, Hall B3, Mt/2, Bella Center) an investigator meeting will be held here in Copenhagen to present the status of the study to urologists from the institutions that have already joined the project and to those who would like to participate.

Rationale of EASE study
Active Surveillance (AS) is a reasonable strategy for the management of small renal tumors in patients with advanced age or significant comorbidities. The evidence on AS is mainly based on retrospective and single institutional studies with relatively short follow-up. Moreover, the assessment of the oncological outcomes in these series can be biased by the presence of benign tumors since histological confirmation of malignancy was obtained only in a proportion of cases. EASE is the first multicenter prospective study on AS that includes only patients with histologically-proven RCC by percutaneous biopsy at enrollment and has therefore the potential to clearly demonstrate that overall survival in this population is not significantly different compared to the overall survival of the general population without RCC and with similar age and comorbidities.

Objectives
The primary objective of EASE is to assess the overall survival of patients who are diagnosed with incidental, histologically (biopsy) confirmed, <4 cm RCC and are managed conservatively with AS and to demonstrate that overall survival in this population is not significantly different compared to the overall survival of the general population without RCC and with similar age and comorbidities.

The secondary objectives are:
• the growth rate and progression rate of small renal tumors in AS;
• the cancer-specific and progression-free survival of renal tumors in AS;
• the identification of clinical and pathological predictors of fast growth rate and progression for small RCCs;
• the identification of serum, urine and tissue predictive markers of fast growth rate and progression of small RCCs.

Patient population
A total of 400 patients with small, incidentally detected, histologically confirmed RCCs will be included and data related to the oncological outcomes of the AS approach will be collected.

Study procedures
A percutaneous biopsy of the renal mass is performed in all cases to histologically confirm the diagnosis of RCC. Biopsies are carried out under local anaesthesia with ultrasound or CT guidance. At baseline, information is collected on demographics, medical history, tumour-related symptoms and performance status. A physical examination is performed and blood and urine are collected. Abdominal imaging is performed by contrast-enhanced CT scan and MRI or, in case of contrast allergy or abnormal serum creatinine, by ultrasound.

All patients follow a standardized AS protocol. Follow-up visits are scheduled three and six months after diagnosis, every six months up to three years and yearly thereafter. A follow-up visit is also carried out at the time of progression when it occurs. Follow-up visits include medical history, physical examination and assessment of performance status, serial abdominal imaging and quality of life and anxiety by dedicated questionnaires. Voided urine and blood samples are collected and stored at definite time points for future analysis of predictive biomarkers.

Electronic Case Report Form
The web-based database management system Marvin is used for collection of patient data. The system is intuitive and easy to use.

Study status
More than 50 institutions across Europe have shown interest to include patients in the EASE registry. Eleven centers from Italy, the Netherlands, Spain, Austria, Iceland and Lithuania already obtained ethics approval and started recruiting patients. Other countries will follow shortly. Please join us. New sites are welcome!

If you are interested to participate, please contact the EAU Research Foundation on researchfoundation@ uroweb.org

Sunday 18 March
13.00: EAU RF EASE Study Investigators Meeting
Meeting Room 14, Hall B3, Mt/2, Bella Center

As Every Detail Counts –
Visibly higher resolution with the new flexible uretero-renoscopes FLEX-XC and FLEX-X2S

STORZ
KARL STORZ SE & Co. KG, Dr.-Karl-Storz-Straße 34, 78532 Tuttlingen/Germany, www.karlstorz.com
Autosomal Dominant Polycystic Kidney Disease (ADPKD) is the most common hereditary kidney disease and the fourth most common renal disease requiring renal replacement therapy for end stage renal disease (ESRD) in Europe. It affects an estimated 600,000 individuals in Europe and is characterized by progressive growth of numerous cysts in the kidneys, eventually leading to end-stage renal failure in the vast majority of patients, typically by the fifth or sixth decade of life. Mutations in the genes PKD1 and PKD2 are the most common cause of the disease, leading to an unopposed proliferation of renal tubular cells with formation of cysts. Mutation in PKD1 gene accounts for 85% of the cases and is associated with earlier and formation of cysts. Mutation in PDK1 gene accounts for unopposed proliferation of renal tubular cells with common cause of the disease, leading to an.

Pain is a common complication in these patients, very often being the symptom that leads to diagnosis. The most common location is the flank, followed by the back and abdomen, and it may be acute or chronic. Management of acute pain should be directed to the poor quality of life of many of these patients, being difficult to treat and manage. Treatment should start with conservative measures and a less nephrotic like analgesics like acetaminophen should be elected initially. If pain persists despite conservative measures and the patient hasn’t developed glomerular capillary cyst de novoations with or without renal denervation may be indicated; if the patient is on dialysis, nephrectomy should be considered, either before or at the time of transplantation.

Technique of nephrectomy

There is no consensus regarding the best timing and technique for nephrectomy in transplant candidates, when indicated. There are arguments for the different alternatives - before, concurrent or after transplant. Nephrectomy before transplantation avoids the extra morbidity and increased ischemia time associated with simultaneous performance of nephrectomy and transplant. On the other hand, native nephrectomy during transplantation maximizes their use of the remaining function while waiting for transplant and avoids an extra surgery. Not least because native kidneys volume decreases after transplantation.

Timing of nephrectomy

The decision whether to remove the native kidney before, concurrent or after transplant depends on the progressive nature of the disease and helps the hydroelectrolytic balance, especially of potassium and phosphorus. On the other hand, recent data suggest that nephrectomy is associated with a better control of hypertension.

Nevertheless, in the absence of symptoms or complications, nephrectomy is seldom indicated. When volume is the main concern, arterial embolization has been tried as a minimally invasive alternative to nephrectomy, achieving a volume reduction of 25–50%. However, results are poorer in very large kidneys, the ones that would benefit the most. The main complication of embolization is the need of nephrectomy. History of infected cysts or the presence of multiple calcual are, along with suspicion of neoplasia, contraindications for this approach.

Algorithm for native kidney nephrectomy after ESRD

Figure: Algorithm for native kidney nephrectomy in ESRD patients: if and when needed

Join us!

End-stage renal disease and kidney transplantation

Management of polycystic kidney disease


Editorial Note: Due to space constraints the reference list has been shortened. Interested readers can email at communications@eurouro.org to request for the full list.

Sunday 28 March 10:30-12:00: Thematic Session 7, End-stage renal disease and kidney transplantation: What the urologist needs to know
Dealing with complications after renal transplantation
Kidney transplant complications mean lower graft survival and longer hospitalisation

Table 1: SCs after KT. Gequinta Registry (Spanish Surgical Group of Surgical Complications after Kidney Transplantation (In European Textbook on kidney transplantation. PP 377-392. ESTU-EAU, 2017)

<table>
<thead>
<tr>
<th>Complication</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vascular thrombosis</td>
<td>3%</td>
</tr>
<tr>
<td>Arterial thrombosis</td>
<td>1%</td>
</tr>
<tr>
<td>Venous thrombosis</td>
<td>2%</td>
</tr>
<tr>
<td>TRAS</td>
<td>3.7%</td>
</tr>
<tr>
<td>Perirenal haematoma</td>
<td>4.8%</td>
</tr>
<tr>
<td>Active bleeding</td>
<td>1.2%</td>
</tr>
<tr>
<td>Ureteral stenosis</td>
<td>5.8%</td>
</tr>
<tr>
<td>Urinary fistula</td>
<td>5.6%</td>
</tr>
<tr>
<td>Symptomatic lymphocele</td>
<td>5.7%</td>
</tr>
<tr>
<td>Perirenal abscess</td>
<td>1.3%</td>
</tr>
<tr>
<td>WHAEs</td>
<td>15.6%</td>
</tr>
<tr>
<td>- Non-infectious</td>
<td>10.8%</td>
</tr>
<tr>
<td>- Infectious</td>
<td>4.8%</td>
</tr>
</tbody>
</table>

Complications

Vascular Complications

- Vascular thrombosis
  - 0.9-2.3% for arterial and 0.6-2% for venous thrombosis.
  - Risk factors for VC include atheromatosis of the donor or recipient arteries, due to the inclusion of older recipients in waiting list with significant vascular comorbidity (peripheral vascular disease, previous vascular surgeries) or the use of expanded criteria donor kidneys from donor with significant vascular comorbidity.

- Combination of both situations is really common in daily practice, and the necessity of vascular reconstruction during the KT procedure or the implantation of renal graft on a vascular by-pass is becoming frequent, introducing a really challenging situation for the surgical team.

- Multiple arteries of the graft, perioperative hypotension episodes or perirenal infections (hematoma, urinoma, lymphocele) as well as prolonged vascular anastomosis time relates to VC and graft loss.

- Doppler ultrasound (US) is mandatory in the immediate postoperative follow-up of KT. The diagnostic specificity and sensitivity of US for vascular thrombosis is close to 100%. Occlusion of the main renal artery is observed by the absence of arterial flow within the kidney, along with the absence of venous flow.

- The use of contrast-enhanced US allows one to image microvascular perfusion accurately, and detect local parenchymal infarction. In renal vein thrombosis, the two most pathognomonic findings are absence of venous colour signal and reverse diastolic flow within the renal artery.

- Graft renal artery stenosis ranges from 1-5%. Conventional angiography remains the gold standard for diagnosis and can provide image guidance to endovascular therapy. CT angiography with 3D reconstruction or magnetic resonance angiography have shown excellent correlation with conventional angiographic findings.

- In the acute VC patient, surgical exploration is indicated in cases of ultrasound absence of graft perfusion; surgical thrombectomy in cases of salvageable graft or allograft nephrectomy in cases of non-viable graft are the best options.

- The endovascular approach is considered the treatment of choice for haemodynamically significant renal artery stenosis; open surgical approach are reserved for cases of failed endovascular treatment.

- Ureteral Complications (UC)

  - Incidence of UC ranges from 2-10%. Risk factors are ischaemic injury, surgical technique, donor and recipient advanced ages, time on dialysis and vascular anastomosis time; also type of immunosuppression (mTOR inhibitors) and acute rejection have been related to UC.

- The systematic use of DJ stent has been reported as a beneficial factor to reduce UC. Endourological treatment is effective in small fistulas (not large, where open surgery should be the first option, specially in immediate post-op) and ureterosurgical stricture with variable results, worst in longer stenosis in comparison to shorter cases. Other alternatives as endoscopic sealing of fistulas with cyanoacrylate or endoureterotomy with holmium laser or cold knife in cases of recurrence after balloon dilatation are options to be considered before proceeding to open surgery.

- Lymphocele

  - Global incidence of lymphocele (both symptomatic and asymptomatic) is around 34%; but symptomatic cases represent between 9-13% and 16-37%. Peak incidence occur from two weeks to six months. Main cause of lymphocele relate to extensive dissection of lymphatic around the iliac vessels. Other causes are mTOR inhibitors use as a part of immunosuppressive therapy or delayed graft function.

- Diagnostic approach is made by clinical suspicion (lymphorrhea, lymphedema, obstructive urinopathy) and confirmed by ultrasonography and fine-needle percutaneous aspiration with biochemical confirmation.

- In relation to treatment, only symptomatic cases need intervention. Recommendations are to perform percutaneous drainage placement as the first treatment for large and symptomatic lymphocele, with or without sclerotherapy with different agents.

Conclusion

Complications of kidney transplant relate to a decrease in graft survival. Also hospitalisation period is significantly prolonged. Costs of procedure when complications occur are also higher. Early diagnosis and treatment are important to decrease the consequences.

Editorial Note: Due to space constraints, the reference list can be made available to interested readers upon request by sending an email to: communications@uroweb.org

Sunday 18 March 10.30-12.00: Thematic Session 3, End-stage renal disease and kidney transplantation: What the urologist needs to know
TOOKAD® (padeliporfin) 183 mg or 366 mg powder for solution for injection

Abbreviated-prescribing information — please consult the full summary of product characteristics before prescribing.

SYMPOSIUM

Date & Time: Sunday March 18 17:45 – 19:15
Location: Blue Area, Room 5 (Level 0)

Chairman: M. Wirth, Dresden (DE)

M. Wirth, Dresden (DE) Welcome 17:45 - 17:50

F. Montorsi, Milan (IT) Clinical Results (Phil. III) 17:50 - 18:10

A. Scherz, Rehovot (IS) Focal Therapy & Non thermal light 18:30 - 18:50

A.R. Azzouzi, Angers (FR) Procedure & Practical training 18:50 - 19:10

I.S. Gill, Los Angeles (US) Active surveillance & TOOKAD® 19:10 - 19:15

M. Wirth, Dresden (DE) Conclusion 19:10 - 19:15

Erectal metastasis is a common complication of advanced prostate cancer. Up to 2% of patients will develop metastatic disease in the prostate and about 25% will develop advanced disease by the time of diagnosis. In the near future, up to 30% of patients with prostate cancer will be diagnosed with non-regional metastatic disease at the time of diagnosis. In addition, up to 50% of patients will develop metastatic disease in the prostate post radical therapy. For these patients, the most effective treatment is palliative. In addition, many patients will experience a progressive increase in the size of their prostates, leading to a decrease in quality of life and an increase in hospitalization and medical costs. 

The first-line treatment for metastatic disease is hormone therapy, which is effective in 70% of patients, but leads to significant side effects such as castrate hypogonadism, osteoporosis, and psychological distress. 

In this context, TOOKAD® (Padeliporfin) is a new therapeutic option that can be used as an alternative to hormone therapy. 

TOOKAD® is a photosensitizer that can be activated by light at a wavelength of 753 nm. It is injected intravenously and after 2 hours, it is concentrated in the prostate gland. 

The treatment consists of three steps: 

1. The injection of TOOKAD® is followed by a 120-minute laser exposure to deliver light at a wavelength of 753 nm.
2. After the laser exposure, the prostate is illuminated for 22 minutes for photodynamic therapy.
3. The prostate is then illuminated for 22 minutes for photodynamic therapy.

This treatment is performed under general anesthesia, and the patient is monitored for 24 hours. The treatment is well tolerated, and the most common side effects are transient increases in PSA levels and urinary retention. 

TOOKAD® has been approved in Europe and is currently under evaluation in the United States. It is also being studied in clinical trials for the treatment of other cancers, such as breast and bladder cancer.
PROSTATE-RECTUM SPACING DURING RADIATION THERAPY

Preserve Your Prostate Cancer Patients’ Quality of Life with SpaceOAR Hydrogel.

- Significantly reduces long-term Proctitis, Hemorrhoidal Bleeding and Fecal Incontinence¹
- 2x more likely to maintain baseline sexual function²,³
- Significantly higher patient reported scores for urinary and bowel Quality of Life²,³
- Minimally invasive procedure

Visit us at Booth #H30
To learn how you can integrate SpaceOAR hydrogel into your urology practice, go to www.spaceoar.com/EAU

1. Data on file
2. Hamstra, DA et al. Sexual quality of life following prostate intensity modulated radiation therapy (IMRT) with a rectoprostatic spacer: Secondary analysis of a phase III trial. Practical Radiation Oncology, Volume 8, Issue 1, e7 - e15
3. Hamstra, DA et al. Absorbable Hydrogel Spacer Use in Prostate Radiotherapy: A Comprehensive Review of Phase 3 Clinical Trial Published Data. Urology, Published online: November 23, 2017

© Augmenix, Inc. All rights reserved. Augmenix, SpaceOAR and SpaceOAR logo are registered trademarks of Augmenix, Inc.

---

THE UNIVERSITY OF EDINBURGH
COLLEGE OF MEDICINE AND VETERINARY MEDICINE

Master of Surgery in Urology

The Degree Programme
Delivered by The University of Edinburgh in partnership with The Royal College of Surgeons of Edinburgh

» Two year part-time Masters programme taught entirely online
» Leads to an advanced qualification in Surgery
» Improves evidence-based knowledge and practice
» Facilitates structured preparation for Fellowship exams FRCS(Urol) and FEBU

All of our degrees are academically equivalent to on-campus postgraduate degrees.
To find out more about studying with Edinburgh Surgery Online email: chm.info@ed.ac.uk

Course Topics
- Paediatric Urology
- Transplant Nephrology
- Stone Disease
- Urethral reconstruction
- Male incontinence
- Andrology
- Female Urology
- Neurourology
- Bladder Cancer
- Renal Cancer
- Prostate Cancer
- Penile Cancer
- Testicular Cancer
- New technologies
- Minimal access developments

Student Testimonials
"I found the experience of this degree rewarding and informative, with the benefit of seeing the quality of my practice improve."
Class of 2015 graduate

"I've found the ChM Urology to be both challenging yet achievable, providing me with the tools to achieve lifelong learning at a very high level, all aided by a world-class faculty and super support team."
Current student

"I think without the ChM Urol program, I could have struggled with my fellowship training, maybe failed completely. The ChM Urol has been key to this fellowship success. It is one of the reasons why I am a qualified urologist today!"
Class of 2017 graduate

www.urochm.rcsed.ac.uk
Underactive bladder

Studies on the bladder's afferent pathway are needed to understand reversible stages of underactive bladder

Dr. Tiago Antunes-Lopes University of Porto S. João Faculty of Medicine University of Porto (PT)

In the last few years, detrusor underactivity (DU) has been increasingly recognized as a common cause of bothersome lower urinary tract symptoms (LUTS) affecting both sexes.

DU was defined by the International Continence Society (ICS) as “a contraction of reduced strength and/or duration, resulting in prolonged bladder emptying affecting as much as ≥66% of older men and ≥65% of older women undergoing evaluation for LUTS.” In contrast to detrusor overactivity (DO) or bladder outlet obstruction (BOO), DU is a condition that has been characterized and up till now no effective treatment is available.

Drawing an analogy to DD (urodynamic diagnosis) and overactive bladder (symptom complex), and with the aim to facilitate further clinical and epidemiological research, underactive bladder (UAB) was lately defined by the International Consultation on Incontinence – Research Society as “the perception of detrusor underactivity, characterized by symptoms of prolonged voiding, hesitancy, slow and/or intermittent stream, and/or sensation of incomplete emptying.” Hence, UAB is a symptom complex suggestive of DU, comprising a range of storage, voiding and post-micturition LUTS, overlapping with symptoms of overactive bladder and symptoms associated with BOO.

The coordination between both components of the lower urinary tract, the detrusor muscle and the urethral sphincter, is finely controlled by the nervous system, allowing normal storage and periodic elimination of urine. Bladder coordination is indeed an activation of sensory mechanisms that detect a sudden increase in intravesical pressure. The parasympathetic innervation is then activated, providing excitatory input to the detrusor. At the same time, the sympathetic drive to the bladder neck and urethral sphincter is interrupted. As a result, the urethral sphincter relaxes, allowing detrusor contraction, allowing micturition. Moreover, suprasphincteric zones (pons, periaqueductal grey, frontal cortex) participate to maintain the activation of bladder function, providing another level of complexity to micturition control. Therefore, disruption at any step in these neuromuscular pathways can lead to DU.

A multifactorial condition

DU is multifactorial. Antipodes from a result of a variety of pathological processes, essential for the generation of an efficient voiding contraction, that can be categorized as idiopathic, neurogenic, myogenic, or functional (Table 1).

Several contributing factors have been suggested in the pathophysiology of UAB, including myogenic failure, efferent and/or afferent dysfunctions, and central nervous system dysfunction (Figure 1). Myogenic factors affect detrusor myocytes or their surrounding matrix, while neurogenic causes may affect the efferent or the afferent limb of the micturition reflex, as well as the central neural integrative control mechanism.

Detrusor overactivity shown in models focused on an efferent nerve (motor nerve) or myogenic dysfunction, contemporary views highlight the importance of the neural control mechanism, particularly the afferent system. To develop novel effective therapies, a better understanding of the etiology and pathophysiological mechanisms of DU is required.

Etiological factors

1. Symptoms

- Frequently observed with aging, as urinary retention, hesitancy, and incontinence, have been attributed to UAB. Gilpin et al. conducted a cohort study of bladder dysfunction related morphological changes, especially decreased aural density of the human detrusor muscle. Moreover, women and children usually show an increase in collagen deposition in human aged detrusor, and Elbadawi et al. suggested that normal-dying bladder was associated with a “band pattern”, which is believed to precede de-differentiation of the detrusor, leading to impaired cellular processes and increased fibroticity.

- More recently, Mansfield et al. showed that the expression of M3 muscarinic receptors were decreased with aging, affecting cholinergic neurotransmission.

- These age-related changes were recently confirmed by Ito and colleagues. They demonstrated that aged rats (24 months) showed evidence of decreased bladder emptying ability and upregulation of nitric oxide synthase, suggesting an increase in collagen deposition in isolated detrusor strips. In addition, histomorphometric investigations of old rats showed greater void post-void residual volume and lower voiding efficiency. The authors concluded that these changes constituted key factors for UAB.

2. Diabetes mellitus

- One of the most common complications of diabetes mellitus is bladder dysfunction, referred as diabetic cystopathy (DCP). The severity of DCP is determined by the severity of diabetes itself and its duration, as well as associated intercurrent diseases. The urinary dysfunction has been described as impaired bladder sensation, reduced contractility and increased post-void residual.

- The pathophysiological mechanisms of reduced detrusor contractility are believed to have a concomitant myogenic and neurogenic basis. Hyperglycemia underlies autonomic neuropathy (axonal degeneration and segmental demyelination) through activation of the polyol pathway, the generation of free radicals, activation of protein kinase C and formation of advanced glycation end-products.

- Moreover, streptococcal-induced diabetic rats had decreased levels of nerve growth factor (NGF) in the dorsal root ganglia, associated with reduced post-void residual. This neuritis also led to bladder dysfunction due to myocyte impairment due to abnormalities in intercellular connections and excitability, intercellular signaling, receptor distribution and density.

- According to the DCP temporal theory, ostomy dysfunction is associated with bladder dysfunction in UAB. The decrease in bladder blood flow is followed by a decrease in the autonomic control of the bladder. Increased vascular resistance is associated with a decrease in blood flow, with a decrease in the contractility of the detrusor (Figure 2). Finally, in DU bladders, serosal application of ATP results in detrusor contractions, indicating the integrity of the detrusor muscle. Intravesical application of ATP after BOO increases isometric bladder contractions, denoting a low availability of urachial ATP.

- This indicates that ATP may have an important role in the pathophysiology of DU and it should be considered a potential diagnostic biomarker and a treatment target for DU. Jang et al. studied male patients with BOD and stated that this condition leads to urethral dysfunctions, suburothelial inflammation, cellular apoptosis and alterations of sensory proteins.

- Patients from the DUA subgroup had a higher frequency of (f)-adrenoceptors, which is associated with increased bladder sensation. Recently, Jiang and Kuo investigated urethral barrier defects, suburothelial inflammation, and sensory proteins in patients with DU. The bladder mucosa of patients with DU. These patients had lower expression of M3 and M5 muscarinic receptors, P1X2 receptors and KATp and NOS3 and increased levels of P2Y receptors, which are expected to activate receptors present in suburothelial sensory nerves and generate sensory inputs. Among them, ATP and purinergic (mainly P2X3) receptors play a crucial role to initiate micturition reflex. Cho et al. investigated the changes in the levels of ATP and NO in the urethra of men with detrusor underactivity and benign prostatic hyperplasia and concluded that ATP in the urethra was significantly decreased in these patients; however, there was no significant change in NO.

- There is increasing evidence that epithelial cells and smooth muscle cells have mechanosensitive systems, which allow them to change gene expression and protein synthesis in response to obstruction.

- Gilpin et al. investigated the regulatory role of miRNAs in BOO–induced lower urinary tract dysfunction. They performed a comprehensive analysis of miRNA and mRNA paired expression profiling in the bladder biopsies of human patients using microarray technology and specific and specific for undeterminedly defined states of the disease, allowing systematic examination of the expression of the human bladder function and the underlying activated biological processes (pathways and networks). The authors concluded that molecular changes in DU suggest an increasing involvement of miRNAs in the control of bladder function from the overactive to underactive/acurate states.

- There is increasing evidence that epithelial cells and smooth muscle cells have mechanosensitive systems, which allow them to change gene expression and protein synthesis in response to obstruction.

- Gilpin et al. investigated the regulatory role of miRNAs in BOO–induced lower urinary tract dysfunction. They performed a comprehensive analysis of miRNA and mRNA paired expression profiling in the bladder biopsies of human patients using microarray technology and specific and specific for undeterminedly defined states of the disease, allowing systematic examination of the expression of the human bladder function and the underlying activated biological processes (pathways and networks). The authors concluded that molecular changes in DU suggest an increasing involvement of miRNAs in the control of bladder function from the overactive to underactive/acurate states.

- There is increasing evidence that epithelial cells and smooth muscle cells have mechanosensitive systems, which allow them to change gene expression and protein synthesis in response to obstruction.

- Gilpin et al. investigated the regulatory role of miRNAs in BOO–induced lower urinary tract dysfunction. They performed a comprehensive analysis of miRNA and mRNA paired expression profiling in the bladder biopsies of human patients using microarray technology and specific and specific for undeterminedly defined states of the disease, allowing systematic examination of the expression of the human bladder function and the underlying activated biological processes (pathways and networks). The authors concluded that molecular changes in DU suggest an increasing involvement of miRNAs in the control of bladder function from the overactive to underactive/acurate states.
**Today’s European Urology Events**

---

**Surgery-in-Motion**

**March 18th**
10.00 - 12.00
Green Area, Room 15 (Level 0)

**Aims and objectives:**
Surgery-in-Motion School is a special educational video library. In this two hour video based course, different experts will share their specific technique on the key steps in nerve sparing RARP. They will also discuss why they do it their way. At the end of the course, special complex cases will be shown, and the presenters will explain how to manage these.

10:00 - 10:10 Welcome and introduction
Jim Catto, Sheffield (GB)

10:10 - 10:30 Bladder neck
Declan Murphy, Melbourne (AU)
Alexander Mottrie, Aalst (BE)
Peter Wiklund, Stockholm (SE)
Discussion

10:30 - 10:50 Lateral dissection
Markus Graefen, Hamburg (DE)
Declan Murphy, Melbourne (AU)
Peter Wiklund, Stockholm (SE)
Discussion

10:50 - 11:10 Apical dissection
Markus Graefen, Hamburg (DE)
Alexander Mottrie, Aalst (BE)
Declan Murphy, Melbourne (AU)
Discussion

11:10 - 11:30 Anastomosis
Markus Graefen, Hamburg (DE)
Declan Murphy, Melbourne (AU)
Peter Wiklund, Stockholm (SE)
Discussion

11:30 - 11:55 Special cases:
The use of ICG for peri-prostatic artery identification
Alexander Mottrie, Aalst (BE)

Ureteral orifices close to bladder neck management
Markus Graefen, Hamburg (DE)

Post TUR-P or HOLEP
Peter Wiklund, Stockholm (SE)

Very large prostate
Declan Murphy, Melbourne (AU)

Median lobe
Alexander Mottrie, Aalst (BE)

11:55 - 12:00 Closing remarks
Jim Catto, Sheffield (GB)

We would like to invite you to attend the Platinum Hour drinks reception to meet and greet the editors, authors and reviewers of the European Urology family of three: European Urology, European Urology Focus and European Urology Oncology. Please join us to toast to the family’s new sister journal European Urology Oncology.

This new journal complements the family by delivering high quality research while pursuing the goal of a multi-disciplinary approach. Urology, Medical Oncology, Radiation Therapy, Imaging, Pathology and Basic Research working together with the same final aim: to improve patient care. If you’ve got practice changing, groundbreaking research in urological oncology, you can directly submit your original article via this link: ees.elsevier.com/euonco.

We look forward to answer any questions about the new journal, or another member of the European Urology family, during the drinks reception at our booth!

---

europeanurology.com
eufocus.europeanurology.com
europeanurology.com/euoncology
Significant improvement of erectile function
Stabilisation in advancement of penis curvature
Significant improvement of pain
Non-invasive therapy

1 Chung et al. BJU international, 2015, 115, 46-49
2 Palmieri et al. European Urology, 2009, 56 (2), 363-370

We name you 5 of many advantages:
• Free access to the EAU Guidelines online translations
• Discounts on meetings and workshops
• Premium access to the largest urological knowledge base; UROsource
• Boost your career with educational programmes, scholarships and free accredited courses
• Not one, but three scientific journals for free

Celebrate 30 years with us at EAU 2018!
Booth No. C3-F29

Further information:

Treatment of Induratio Penis Plastica
Treatment of Chronic Pelvic Pain Syndrome

STORZ MEDICAL
The Shock Wave Company

DUOLITH® SD1 »ultra«
Shock wave treatment with DUOLITH® SD1 »ultra« for erectile dysfunction and urological pain therapy

- No reported side-effects
- No anaesthesia required

1 Chung et al. BJU international, 2015, 115, 46-49
2 Palmieri et al. European Urology, 2009, 56 (2), 363-370

STORZ MEDICAL AG · Lohstammpfstrasse 8 · 8274 Tägerwilen · Switzerland · www.storzmedical.com

Dive into the history of Annual EAU Congresses!

www.eaucongresshistory.org

We name you 5 of many advantages:

European Association of Urology
Nurses

Improve your management skills

With one of the following leadership courses:
• Leadership for Medical Professionals Course
• Nurses in a leadership role: Cultivating your leadership

When: Monday, 19 March
Fee: € 50 excl VAT

Sign up at the YUO booth (H69) on the EAU square at the Exhibition Hall. Limited seats available. First-come, first-served!

STORZ MEDICAL
The Shock Wave Company

Celebrate 30 years with us at EAU 2018!
Booth No. C3-F29

Further information:
The adoption of imaging to inform clinicians about the presence of suspicious lesions is a revolution in prostate biopsy. This shift has allowed the location of suspicious cancerous lesions to be determined, and the treatment algorithm has not been fully realized yet.

Level 1 evidence shows that MR-targeted biopsy detects more clinically significant cancers than extended random sampling. Further, this strategy is more efficient and effective for patients and healthcare systems. New needle sets are needed to target a given location of the prostate, and an image-based pathway is likely to have advantages from a cost-effectiveness perspective. However, can this be improved? There are many ways to further ameliorate the accuracy of targeted sampling, but the true revolution would be to make this strategy available to all patients.

MR-targeted biopsy is a complex procedure. This does not mean that the procedure is especially difficult, nor highly technically demanding. This means that the overall performance — measured for instance by the detection of clinically significant cancer per subsequent biopsy session — relies on a chain of interconnected steps, each one influencing the others.

The imaging phenotype, provided at present by multiparametric MRI, can be exploited with three different preliminary steps: ‘in bore’ targeted biopsy, cognitive MR-TRUS fusion with visual targeted biopsy, and software-based MR-TRUS fusion targeted biopsy. In-bore MR targeted biopsy — biopsy performed directly in the MR suite — is probably the most direct and intuitive way to guide biopsy, although its role is confined to a few centres in the world due to resources and cost constraints.

Cognitive MR-TRUS fusion targeted biopsy relies on a skilled and trained operator who is able to cognitively prepare the preoperative MR over the TRUS in order to guide the biopsy needles towards the target. A difficult task, which only a few expert hands seems comparable to more sophisticated MR targeted strategies. Software-based MR-TRUS fusion targeted biopsy has been progressively adopted by many centres, and represents a mid-way between the two. Not only software-based融合 allows the clinicians to fuse the two image sources — MR & TRUS — and to compensate the incongruity between the two with a margin of at least few millimetres. This will evolve towards the so-called Theme of Theme Section 8, in which we will be able to picture the latest advancement in computerised image fusion using modern platforms.

Interdependent steps
Why software-based MR-TRUS fusion-targeted biopsy has to be considered a complex procedure? It relies on interdependent steps, namely: imaging acquisition, imaging reporting, transfer of information between radiologist and urologist, real-time TRUS acquisition, software-based fusion, and finally clinician’s ability to sample a given target. The learning curve for each of these steps is unknown and needs to be determined, and as many opportunities as possible for training need to be offered in order to disseminate this complex procedure.

Uro-radiologists are actively facing these issues. The standardisation of the PI/RADS score version 2, and the proposal to ensure international standards by verification of outcomes through independent assessment of results are concrete examples of this process. We have to do the same with the development of multiple opportunities for training within national and international societies, the standardization and implementation over time of the technique, the availability of dedicated resources for self-assessment, and the possibility of objective comparison of own results against established benchmarks of quality. The European School of Urology course on prostate biopsy, offered at the time of this meeting, is one of such opportunities.

To disseminate the procedure across the board is the major challenge today, but it is very likely that in the next few years we will witness novel innovation. There are many ways to refine and optimise prostate biopsy. These changes are likely to necessitate a new generation of software-fusion devices which are likely to involve a versatile platform able to integrate different information generated by various sources (Figure 8). The amalgamation of data with concurrent registration over a cartography to depict spatial anatomy will allow personalised treatment and the new wave of tissue-preserving approaches.

Improving anatomical imaging
First, multiparametric MRI will be improved, especially for T2-weighted imaging. In order to overcome motion artefacts due to patients’ movement, peristalsis of bowel loop, or movements of the prostate itself, manufacturers are developing novel T2 sequences with the aim to substantially improve anatomical imaging. Also, higher field magnet strength z Tesla are being evaluated. This would open new avenues for prostate biomarkers which are out of reach with lower magnet strength, albeit the adoption of this technology in clinical practice is still hindered by some technical limitations.

Further, novel hyperpolarised MR allowing molecular imaging are likely to play a role and increase the diagnostic accuracy of present scans. Finally, computer-aided detection (CAD) will support the democratization of multiparametric MRI. CAD seems to have same diagnostic performance than expert uro-radiologists, and relies on quantitative measurable parameters.

Second, the source of the imaging phenotype itself might be implemented. 68 Gallium PSMA-PET/CT is becoming a recognised imaging tool for metastatic assessment of men with primary, and recurrent disease after treatment. There is early evidence showing that PET-TRUS fusion biopsy might be complementary to MR-TRUS targeted, and better in some cases. The specificity of the ligand for prostate cancer might represent an attractive alternative in selected cases.

Third, the ability of modern platforms to register spatial distribution, and to store the 3D reconstruction for subsequent resampling allows the operator to embrace tissue-preserving approaches with more confidence. This permits not only re-sampling areas of the prostate with high accuracy for pathologic assessment of volume and/or grade progression, but also permits more detailed evaluation investigating genetic and biological signature.

Fourth, the sampling route might definitely shift. The transrectal route has been traditionally preferred to the transperineal one as this approach can be performed in the outpatient clinic under local anaesthetic, and had limited cost and resources constraints. However, at present, it is evident that the transperineal approach has significant advantages, and the supposed disadvantages can be overcome. The sapsis rate after transperineal biopsy is close to 0%, this compares to 1-4% rate when performing transrectal biopsy, according to the number of previous biopsy sessions. In the era of re-sampling, and considering that every previous biopsy session increases the risk of subsequent sepsis, this is a big change. Further, the accuracy of targeted sampling through the perineum is likely to be greater than through the rectum, although no high-level evidence is available yet. While some areas of the prostate are easily accessible through the rectum, there are some which are difficult to sample, namely the apical region, the anterior portion of the prostate, and the base, especially in men with large prostate. Transperineal targeted biopsy have ideal accessibility to all areas of the prostate with few exceptions. Spatial location is therefore not a feature that hinders the accuracy and reliability of transperineal biopsy.

Finally, traditional limitations can be overcome. Transperineal biopsy can be performed in the outpatient clinic under local anaesthetic and achieve high detection rate of clinically significant prostate cancer.

There a number of ways to refine prostate biopsy. While MR-targeted biopsy are being disseminated across our profession through our societies, the technology is moving forward. Novel technical advancement will further ameliorate the accuracy of current targeted biopsy, but some will not. It is up to our scientific community to scrupulously evaluate these in order to reject or adopt them. The availability of novel sources of information that need to be integrated in the decision-making process with patients is a reality. Modern platforms are able to be significant by registering not only the preoperative MR over real-time TRUS, but also integrating all the available information within a 3D model. These innovations push our field towards the adoption of precision medicine.

Editorial Note: Due to space constraints, the reference list can be made available to interested readers upon request by sending an email to: communications@uroweb.org

Sunday 18 March
10.30-12.00: Thematic Session 8, Overview of fusion biopsy devices

Figure 2: Example of a modern platform integrating the information generated from various sources of energy with a 3D model. This allows targeted sampling as well as personalised tissue-preserving strategies

Abstracts Now Open!
Learn more and submit your abstract at www.WCE2018.com
ENDOUROLOGICAL SOCIETY
REGISTER NOW
Join us in the spectacular city of Paris, France, for the 36th World Congress of Endourology, the world’s foremost meeting dedicated to minimally invasive urologic surgery. Assembling today’s global leaders in endourology, WCE 2018 will provide unparalleled opportunities to expand your education, enhance your skills and exchange ideas.

EUT Congress News
Urological diseases are common: they often cause a lot of discomfort and some can be life-threatening. Plenty of urological information can be found online. Unfortunately, we all know the problem of internet-based patient information.

In many cases, the information may be driven by financial interests and may cause more confusion than help. Moreover, much of the available information is not scientifically proven, and it may mislead some patients who might be desperate to try everything.

There is also the industry trying to sell their products. This type of information must be perceived as biased and needs to be put in perspective. On the other hand, if patients find unbiased and scientifically proven materials, the information may be difficult to understand if you don't have a medical background.

The mission of the EAU is to raise the level of urological care. For many years we have mainly focussed on the urologist, but since 2006, the EAU decided to reach patients directly as well. So, the EAU Patient information Working Group (EAU PI) was created as a truly European collaboration for the benefit of patients and their families.

Our belief is, that well-informed patients are better equipped to talk about issues that worry them, and share more easily their concern about the way they experience their condition and treatments; encouraging a meaningful dialogue between the doctor and the patient, thus leading to better care.

The purpose of the EAU PI is to provide reliable, clear, unbiased and comprehensive information about urological diseases and their treatment, independently of the language patients speak or the country they come from. This enables patients and family to advance from a completely dependent individual, to an educated partner who is able to discuss treatment conditions, leading to improving the understanding of what happens before, during and after treatment.

For this, EAU PI has dedicated an online platform with patient information regarding most urological conditions. All materials offered on this platform take into account the latest existing scientific evidence from the EAU Guidelines, the experience of medical experts and nurse practitioners, together with the view of patients.

EAU PI have achieved collaborative partnerships with different patient groups, such as Europa Uro, Fighting Bladder Cancer UK, ECPC and the ICC. Together, they formed a taskforce for the development of a patient information session during this year’s annual congress in Copenhagen. Patient group partnerships let EAU PI engage in a dialogue with patient representatives regarding patient needs, which will help to prioritise and determine areas of interest.

HONcode certification
As an additional honor and certificate of excellence, the EAU PI online platform received the HONcode certification. The HONcode is the most widely accepted reference for online health and medical publishers. Currently the HONcode is used by over 3,900 certified websites, more than 10 million pages, covering 102 countries.

HON is a non-governmental organisation that has been granted consultative status with the Economic and Social Council of the United Nations (ECOSOC). The mission of the foundation is to guide the growing community of healthcare consumers and providers on the Internet to sound, reliable medical information and expertise. In this way, HON seeks to contribute to improved health care through patient empowerment and better-informed health professionals.

To date, EAU PI has issued leaflets for almost all urological topics, both benign urology and urological cancers. These leaflets have been translated to several languages. But is this enough? Are we clear enough?

We know, that educating patients on scheduled treatments is crucial to ensure compliance. Research has long shown that adequately prepared patients benefit in terms of adhering to necessary regimens, reduced anxiety, enhanced self-esteem, increased satisfaction with care and improved quality of life.

On the other hand, it is vitally important that patients understand what medical procedures they face, so that they can cope better with the procedure, and can give fully informed consent with regards treatment.

It is essential, therefore, to provide information that is clearly structured and easy to understand. An Australian study by Winter et al published in BJUI in 2016 shows that the use of portable video media improves patient’s knowledge and satisfaction acquired during the consent process for cystoscopy and insertion of a ureteric stent, compared to standard verbal communication.

Moreover, patients reported their preference towards receiving information using the portable video media. For this reason, in addition to the written leaflets, EAU PI has started to develop educative animated videos, where diverse urological treatments are explained in a very clear and comprehensive way.

One of the first animated videos introduced by EAU PI was about ureteroscopy (URS). Using this animated video, we conducted a pilot study to assess the level of understanding among patients who were about to undergo this surgical procedure. The animated video along with written information about the procedure was shown to patients scheduled for URS prior to any contact with the hospital staff.

Patients were presented an eleven-item questionnaire in order to evaluate patients’ rating followed by two questions testing the level of understanding of the provided information. For this pilot study, the information source and the questionnaire were translated into German, Turkish and Chinese, for multilingual evaluation.

A total of 120 questionnaires were evaluated: Germany (R=52), Turkey (R=33) and China (R=35). Of all participants, 66% were male and 49% were female. 99% of the patients were in the age group between 19 and 39 years, 44% between 40 and 59 years and 20% older than 59.

Satisfaction with the presented information was very high, reaching 90% favorable comments over all items, with less than 2% of patients that found the educational material unfavorable. 99% of the patients considered the information favorable in terms of preparing for the procedure.

Between nationalities, no significant differences in evaluation of the items could be identified, except the need for voice-over and subtitles for Chinese patients (82.4% preferred), as compared to only voice-over preferred in Turkey (90%) and Germany (73.5%).

Medical aspects like the need for anesthesia or secondary stent placement showed lower levels of understanding and may support the need for adjustment of the information. Both test questions have been answered correctly by 60% of the patients, suggesting a high level of comprehension; however, 5% of the patients did not give a correct answer, again, supporting the need for adjustment of details.

Animated videos
This approach to patient information, using a cartoon animation narrated in lay language, allows each individual patient as much time as needed to understand the proposed procedure. This pilot study confirms that animated videos raise the level of understanding and improve patient confidence prior to treatment in 45.6% of participants. However, it should not replace a face-to-face discussion with the physician.

As we observed, a small number of patients did not understand the information delivered to them, so that they may meet the physician already informed and prepared, thus benefitting both the physician and the patient.

So far, EAU PI has prepared animated videos for the drug treatment of overactive bladder, placement of JJ stents, ureteroscopy (URS), percutaneous nephrolithotomy (PCNL), shock-wave lithotripsy (SWL), cystoscopy, urodynamics, cystectomy, care of stoma bag and transurethral resection of bladder tumors (TURBT). More are on the way, so stay tuned.

The EAU Patient Information website showing the page with animated videos of various urological procedures such as ureteroscopy and cystoscopy, among others.

EAU PI: Are we clear enough?
A more animated website helps inform patients on various urology procedures

ENUCLEATION OF THE PROSTATE
using Hemera Pulsed Thulium laser with updated settings

Dr J.B Roche
Groupe Urologie Saint- Augustin - Bordeaux (Fr)

In this video, we will present a laser prostate enucleation using updated settings, along with a modified en bloc dissection. At last year’s ESUT session, we showed an original approach to enucleation using a pulsed Thulium laser.

For better performance, we changed settings to achieve a better bubble effect, thus achieving a clearer enucleation plane.

We will show how the thulium laser used in a pulsed mode can be combined with a minimally invasive endoscopic technique to treat large prostatic adenomas.

ENUCLEATION OF THE PROSTATE
using Hemera Pulsed Thulium laser with updated settings

Dr J.B Roche
Groupe Urologie Saint- Augustin - Bordeaux (Fr)

In this video, we will present a laser prostate enucleation using updated settings, along with a modified en bloc dissection. At last year’s ESUT session, we showed an original approach to enucleation using a pulsed Thulium laser.

For better performance, we changed settings to achieve a better bubble effect, thus achieving a clearer enucleation plane.

We will show how the thulium laser used in a pulsed mode can be combined with a minimally invasive endoscopic technique to treat large prostatic adenomas.

Reference
The quality and caliber of the courses organised by the European School of Urology (ESU) are its bedrock. To ensure the excellence these courses are known for, pre- and post-tests were created.

Do I think these tests should be standardised? Absolutely. I am a firm believer in this way of education. Read on to understand why.

What are pre- and post-tests?

Pre- and post-tests are tools to gauge the participants’ knowledge. How much do they know about the topics before they take the ESU courses? How much did they learn afterwards? Comprised of multiple-choice questions, the results of these tests will also determine which of the course topics need priority and emphasis.

Through these tests, the faculty can also evaluate if their delivery and teaching methods are effective, and which areas need fine-tuning. These tests are also good indicators of the quality of the course materials.

Pre- and post-tests were also created to satisfy the regulatory bodies of the Continuing Medical Education (CME) in several European countries and the Union Européenne des Médecins Spécialistes (UEMS). In some countries, it is even mandatory to organise pre- and post-tests into the programme and their presentations during the courses.

During the Annual EAU Congress here in Copenhagen, the pre- and post-tests will accompany 20 selected courses. If proven successful, these tests will continue in future congresses and be more prominent with stand-alone ESU Courses scheduled throughout the year. Educational activities are increasing and industry, one of the main providers and promoters, want to see that attendees are really improving their knowledge and it is worthwhile, from the teaching point of view, to invest.

Goal of the pre-test

The pre-tests are designed to prompt the participants to prepare before attending the courses. One of the aims is for participants to answer questions via a digital platform two to three weeks before a course. The faculty will have ample time to adapt those answers and incorporate them into the programme and their presentations during the courses.

After participants take the pre-test, their results are used by the faculty as the basis to calibrate the courses and to improve them. And since most courses cover a variety of topics in a compact timeframe, topics will be streamlined by focusing on those that are not as familiar to participants and those that need more emphasis.

Post-test relevance

After the completion of each course, participants will be asked to answer the same questions from the pre-test two to four weeks later. They can even do this at home. Their answers will provide significant insights that can assist the faculty. This feedback can also be used to improve the ESU courses in the following year.

Benefits for participants

The pre-test will give participants an overview of specific topics that are important per course. The post-test will provide feedback to participants regarding their performance. Since the post-test is implemented weeks following the course, a higher score compared to the pre-test score indicates an increase in knowledge. A higher score also means the participants were able to retain their newly-acquired knowledge.

How the tests help the faculty

Through the pre-test, the faculty will have a better understanding and overview of the participants’ current level of knowledge (or lack thereof). Their collective test results will give the faculty an indication which course topics require additional focus and progression, and which topics to skip.

The post-course test will also provide feedback on the faculty’s quality of teaching, their methods and delivery. The test may prompt them to revise presentations for the following year, encourage them to retain what works and/or change their teaching approach.

Improved through the years

In the initial stages of the tests, questions were asked at the beginning of a course and the same questions were asked at the end of that course. The purpose was to see if the percentage of correctly answered questions would be higher after following a course. It was an immediate way to measure the impact of a course on the knowledge of the participants.

Last year, three courses were selected for a new way of testing wherein the faculty were asked to make the multiple-choice questions themselves based on the content of their courses. To reiterate, if the pre- and post-tests are proven successful the aim is to include these tests in all courses during Annual EAU Congresses and, eventually, all stand-alone ESU courses. Although this has actually been done in the recent past, the wider aim is for consistent implementation in order to support both faculty and participants.
Can I still use mesh for POP repair?  

Mesh controversy prompts the need for better communication and consensus on quality standards

Sunday, 18 March 2018

Dr. Tufan Tarcan
Professor of Urology
Marmara University School of Medicine
Istanbul (TR)

1. Synthetic meshes for treatment of SUI (may also be further sub-classified to MUSS and mini-slings);
2. Trans-abdominal synthetic meshes for the treatment of POP; and
3. Trans-vaginal synthetic meshes for the treatment of POP.

According to EAU/EUGA consensus, whilst the risk associated with the transabdominal insertion of mesh for POP is considered more acceptable, its use should also be restricted to specialist practice. On the other hand, the use of MUS for surgical treatment of SUI in both male and female patients is associated with good efficacy and acceptable morbidity.\(^7\)

Recently, the Therapeutic Goods Administration (TGA) in Australia has decided to remove the use of mesh products in the treatment of POP and single incision mini-slings to treat SUI from the Australian Register of Therapeutic Goods (ARTG). This decision was based on their review which revealed that “the benefits do not outweigh the risks these products pose to patients”. The TGA has further noted that mini-slings are different devices compared with MUS, and therefore MUS were not removed from the ARTG.\(^8\)

However, this distinction between meshes used for POP repair and MUS has not always been considered by the national regulatory organizations, and may even be more misunderstood by the public. For example, a “Sling the Mesh” campaign group now has more than 3,000 members and strongly advocates the prohibition of all kind of meshes used in pelvic surgery. The TGA decision in Australia, New Zealand has banned in January 2018 the use of all surgical mesh products whose sole use is the treatment of POP via transvaginal implantation and one product, a single incision mini-sling for the treatment of SUI.\(^5\) Although, not officially released yet, there has been news on the media about a draft guideline by NICE in the UK that will recommend that mesh should be banned as a routine treatment for POP and meshes for implant procedures should only be used for research purposes.\(^6\)

The recommendations of regulatory organizations on transvaginal meshes for POP repair are actually in parallel to the EAU/EUGA consensus which already stated that synthetic meshes for treating POP should be used only in complex cases, as previously stated in speciality referral centers or as a part of research trial.\(^8\) Therefore, one can comment that more or less an overall consensus has been reached on vaginal meshes in POP repair. It is strongly recommended that urogynecologists and uro-gynecologists should follow the instructions of EAU/EUGA consensus until they are updated or changed with the new evidence.\(^7\) However, the situation is becoming more complicated and blurry for transabdominal mesh-augmented POP repairs and even for MUS. Although, synthetic slings are recommended to be safe in the surgical treatment of SUI in both male and female patients, this conclusion draws little attention from the media and patient organizations.\(^2\)

The 2017 US Food and Drug Administration (FDA) updated notification about the use of mesh in the treatment of POP was a milestone in POP surgery, but also created a hypersensitivity not only for mesh-augmented POP repairs but also for MUS.\(^2\) A recent study has investigated the news in the media about surgical meshes following this notification and found that only 49% of articles that first reported the announcement accurately specified that it applies to mesh for POP, not incontinence.\(^8\) This misinformation has certainly affected the perception of the patients about surgical meshes and increased the level of anxiety on any kind of synthetic mesh indication. For example, a recent study has reported that patients in New Zealand have now developed a fear of mesh abdominal wall hernia repair due to inadequate media reporting.\(^7\)

Impact of mesh controversy

The mesh controversy is not over, but in contrary it is growing and affecting the practice of urologists and uro-gynecologists who treat POP and SUI. An effective communication is needed among medical associations, patient organizations and legal authorities to reach a consensus and improve the quality of medical help for our patients. The 2017 EAU/EUGA consensus statement presents the rules for a good clinical practice for the use of mesh in pelvic surgery. The use of synthetic mesh in the treatment of POP should be restricted to expert individuals working in specialized departments and to complicated or secondary cases, preferably as a part of prospective research. It should also be clearly emphasized that MUS have proven their long-term efficacy and safety and should not be sacrificed by an overreaction to synthetic slings. On the other hand, the efforts to find a better material for pelvic support must continue and be supported by government funds to find a permanent solution for this public health problem.

References

Sunday 18 March
10:30-12:00. Thematic Session 5: Avoiding, managing and responding to pelvic floor surgical complications

EUT Congress News
Introducing the newest member of our family of journals, European Urology Oncology.

We’re bringing together multiple disciplines — including urology, medical oncology and radiation oncology — to achieve one goal: to advance research in urological oncology. Join our community of authors and reviewers collaborating for the benefit of patients in every corner of the world.

If you’ve got practice changing, groundbreaking research in urological oncology we hope to hear from you.

Submit your paper today: ees.elsevier.com/euonco

europeanurology.com/euoncology

---

The Editorial Team

Alberto Briganti M.D., Ph.D.
Editor in Chief
Associate Professor of Urology, Vita-Salute University San Raffaele, Milan, Italy

Laurence Albiges M.D., Ph.D.
Associate Editor
Medical Oncologist, Head of the Genitourinary Unit at Gustave Roussy Institute, Villejuif, France

Gianluca Giannarini M.D.
Associate Editor
Urologist, Academic Medical Centre Santa Maria della Misericordia, Udine, Italy

Ashish M. Kamat M.D., M.B.B.S.
Associate Editor
Professor of Urologic Oncology & Cancer Research, The University of Texas, MD Anderson Cancer Center, Houston, US

Paul Nguyen M.D.
Associate Editor
Associate Professor of Radiation Oncology, Harvard Medical School, Dana Farber Cancer Institute, Boston, US

---

European Urology Oncology

---

Power. Flexibility. Usability.

---

Richard Wolf at EAU18
Hall C, Booth E 45

Developed to impress

- Multifunctional
  One laser for two procedures: Lithotripsy & Enucleation

- Powerful
  Power: 70 watts
  Energy: 5.0 joules
  Frequency: 60 hertz

- Unique Power Laser Fiber
to maximize power output

- Intuitive
  Laser fibers can be identified within the aseptic package

---

70 W Holmium:YAG Laser System for Lithotripsy & Enucleation

---

europeanurosurgery.com/euoncology

---

Visit our website: megapulse70plus.richard-wolf.com

---

Find us on Social Media
richard-wolf.com
The EAU Section of Urologists in Office (ESUO) held its inaugural meeting last year during the 5th Annual European Association of Urology Congress (EAU17) in London. Here in Copenhagen for EAU18, the ESUO Section Meeting has “All about prostate biopsy in an office and outpatient setting” as its theme.

The ESUO’s second meeting once again demonstrated the growing need for an office urology perspective, particularly in the office management of the ever-proliferate prostate cancer. ESUO addresses the core issues that impact the work and interests of urologists who provide comprehensive out-patient care in their own office environment. As opposed to a hospital’s out-patient department, office urologists single-handedly manage the full breadth of urological conditions on a daily basis, while collaborating closely with clinics on the one hand, and general practitioners on the other. ESUO aims to provide support to office urologists, particularly with regards to scientific, clinical and professional information related to their specialty.

All about prostate biopsy in an office urology and outpatient setting

The ESUO Section Meeting focused on practical office topics of biopsy and re-biopsy indications, the growing prostate cancer biomarker field, patient biopsy preparation, biopsy procedure, management of biopsy complications, the roles of TRUS and MRI biopsy guidance, as well as TRUS-MRI fusion biopsy.

It is impossible to overstate the relevance of these topics. Prostate biopsy is one of the most commonly performed office procedures in urology. Of the estimated 1.1 million men globally who are diagnosed with prostate cancer each year, about 25% are Europeans.

The last decades have seen a dramatic increase in prostate cancer incidence due to widespread PSA testing, increased male life expectancy, and an increasing number of men undergoing negative biopsy. Prostate biopsy that is triggered solely by prostate-specific antigen (PSA) and digital rectal exam (DRE), carries the inherent risk of false-negative findings and leads to over-diagnosis of clinically indolent prostate cancer.

PSA has a positive predictive value for prostate cancer detection in the range of 25-44%, while its use to trigger prostate biopsy leads to negative biopsy in 65-70% of men presenting with a PSA in the range of 4-10ng/ml. Moreover, we have witnessed a shift away from reliance to diagnoses of more advanced diagnostic methods that improve the specificity to the discovery of the aggressive, high-grade prostate cancers.

During this period, the reputation of PSA was transformed from an initial “great” biomarker to “good” due to low-specificity, to “bad” as a trigger for over-diagnosis and over-treatment, to supposedly “harmful,” prompting the controversial US Preventive Services Task Force (USPSTF) recommendation against PSA screening in 2012. Five years later the USPSTF “scraped the congealed egg from its face with a dull knife” (quoting Prof. Benjamin Davies) and revised its position.

The current 2017 USPSTF guidelines recommend individualized screening of men aged 55-69, while conceding that screening does offer a small potential benefit of reducing the chance of dying from prostate cancer. The EAU Guidelines state: “Do not subject men to PSA testing without counselling them on the potential risks and benefits” (Level of Evidence 3, Recommendation Grade B), as well as “offer an individualized risk-adapted strategy for early detection to a well-informed man with a good performance to a life-expectancy of at least to 15 years” (Level of Evidence 3, Recommendation Grade B). The topic of prostate cancer screening (particularly with PSA and DRE as triggers for prostate biopsy) remains one of the most controversial topics in urology.

Cruical implications

The dramatic implications of the low specificity of PSA for prostate cancer has led to an explosion of research into the development and validation of tools to facilitate patient risk stratification and, particularly, to better guide prostate biopsy decision. The aim is, frankly, to identify those men who truly harbor clinically significant disease, while leaving at peace those with disease that will never impact their life-expectancy, keeping away the biopsy needle.

With that said, it is crucial to remember that the vast majority of actual PSA testing occurs by order of the general practitioners in most countries. This is the elephant in the room when urologists discuss PSA screening.

Novel tools that may aid the urologist include molecular and genetic biomarkers, which augment the specificity of prostate biopsy for clinically significant disease. Likewise, multiparametric prostate magnetic resonance imaging (mpMRI) has allowed for the non-invasive image-guided risk identification of clinically significant prostate cancer, as well as targeting.

Multiparametric prostate MRI, alongside biomarkers, has an EAU Guidelines designated role in the post-negative biopsy setting, while the National Comprehensive Cancer Network (NCCN) guidelines have go further – providing a recommendation for biomarker and mpMRI use in the pre-biopsy setting. Early use of biomarkers and mpMRI is inevitably the direction we are moving in.

During the ESUO meeting it was a privilege to discuss the dynamic topic of molecular and genetic biomarkers in the primary and secondary biopsy decision-making setting. At the dawn of the PSA-era, we are in the age of a growing need for liquid-biopsy biomarkers and risk stratification tools, for the non-invasive risk assessment of prostate-bearing men. By this time, we as urologists really need to know and use the available tools to avoid the pitfalls of PSA testing. At the same time, with so many options to choose from – high-quality clinical validation is key, although often scarce.

What’s new and relevant in PCA biomarkers?

The EAU Guidelines recommendations have been well-defined and are readily available.

Blood-based biomarkers such as the 4K Score Test and prostate health index (PHI) have been recognized as the best studied. 4K Score has been shown to predict biopsy outcome more accurately than PSA and age alone, and with the addition of clinical information in the algorithm to have a solid diagnostic performance (AUC 0.82) in predicting clinically significant prostate cancer (Gleason Grade 4 and 5) above prostate biopsy.

The past year has seen the publication of a large meta-analysis which has shown evidence of 4K Score superiority over PHI in its own clinical study. Studies comprising of a total of 11,134 men had shown a 4K Score with or without DRE. Another multi-center prospective trial was also concluded demonstrating validity in a population with the addition of clinical information in the algorithm to have a solid diagnostic performance (AUC 0.82) in predicting clinically significant prostate cancer (Gleason Grade 4 and 5) above prostate biopsy.

Prostate Cancer Gene 3 (PCA3) is the other established prostate cancer biomarker. However, results of studies such as the Stockholm 3 model and STHLM3 tests such as the STHLM3 model and MPMS have availability limited in Europe and the USA, respectively. Their validation is also limited (as of this writing).

Interestingly, STORM is an example of a still evolving prostate cancer biomarker, the algorithm was recently updated by taking intact PSA out of the formula and including HOXB13 instead – contributing to an improvement of AUC from 0.74 to 0.75. At the same time, it continues to be studied within an exceptionally homogenous Northern European population of men.

Unfortunately, promising tests such as the STORM Model (Stockholm 3 model) and MPMS have availability limited in Europe and the USA, respectively. Their validation is also limited (as of this writing).
Since the availability of ESWL and PCNL , the role of open surgery for renal stone has diminished. Nevertheless, large complex complete stag horn stone C5 ( Roccis) remains a challenge for the non-invasive and minimally invasive procedures because of the requirements of additional or auxiliary procedures for stone clearance which lead to higher costs for the patients.

If PCNL alone is chosen for these stones, multiple access is unavoidable and that can cause more bleeding, necessitating blood transfusion. Complete complex stag horn stones are more commonly encountered in Asian countries for various reasons. Cost effectiveness is a priority and majority of the hospitals cannot afford multiple treatment modalities for treatment of stones although tertiary hospitals can. We have tried laparoscopic surgery on large renal stones. We found out that single large stone, one or two stones in a single system or in the pelvis are suitable for laparoscopic surgery, but complex complete stag horn stones demand longer operation time hampering renal function.

Thus open surgery, anatrophic nephrolithotomy, is more commonly done for these cases. According to the literature, even in high-volume stone centers in developed countries, open surgery has to be done for these selected cases. Therefore, modern urological surgeons should be adept in the art of open stone surgery.

Preoperative antibiotics as dictated by urine C&S need to be given at the time of induction. Procedure is usually done under general anesthesia and patient placed in the lateral kidney position. Fingers are used to widen the area between costal margin and iliac crest.

Incision is usually supra 12 ( Figure 1 ) and in obese patients, through 12th rib incision may be necessary for better exposure. Usually, incision can be extended laterally about 1 to 2 cm from the tip of 12th rib, but care must be taken not to open pleura that can be done by reflecting the diaphragm with the finger inferiorly. Adequate exposure is essential to facilitate further steps. Gerota fascia is opened up and lower pole of the kidney is mobilised.

In conclusion, open surgery anatrophic nephrolithotomy is a safe and effective treatment option for large complete complex stag horn stone, provided morbidity associated with large incision can be accepted.

References

1. Stone Free Rate(SFR) is 94.6%. SFR of initial four years is less than the latter part of the study. Due to the concern

EDAP TMS
Booth# G66

Live Demos
by the Experts

Meet us at
11:00 AM & 2:00 PM
Booth# G66
Developing a urology nursing educational curriculum
Challenge of curriculum development requires collective will and action

Jerome Marley RN, MS;
Member EAUN
Scientific Congress Office
Lecturer in Nursing
Ulster University
Belfast J.marley@ulster.ac.uk

Around 475 BC, the philosopher Heraclitus wrote - “The only thing that is constant is change”. Our experience as urology nurses would surely support this view. Each day we wrestle with the seemingly ever-increasing demands of healthcare, set against the context of governments’ inability to fund such care to the extent it requires. And it could be argued that pressures on healthcare systems and professionals would not get better anytime soon.

In 2015, the United Nations published the DESA Report [Department of Economics and Social Affairs] which indicated that the current world population of 7.3 billion is expected to reach 8.5 billion by 2050 (12 years from now) and 9.7 billion in 2065 (33 years from now) and 11.2 billion in 2099 (82 years from now). Set alongside these predictions, the UN also suggest that Europe will see a significant ageing of it’s population in the next several decades with an estimated 34% of the population projected to be over 60 years old by 2050. Of course, these are headline statistics, the accuracy of which needs further investigation.

However, if what is predicted is close to being true, then we will need to boost our creativity and prepare for the challenges ahead. The care offered by urology nurses will become even more vital in the years ahead and now is the time for us to consider how nurses will become even more vital in the years ahead. What do we mean by a curriculum?

Broadly speaking, our understanding of a ‘curriculum’ is that it is similar to a roadmap that highlights the commonly agreed educational and practice landmarks that are important in the road ahead. Such a map could be used by individual countries to guide local education that enhances the role of urology nurses and the specific needs of the country itself. To assist us in this task, here in Copenhagen we will start by considering four key questions:

1. If we think of a curriculum as a ‘map’ that highlights key content for urology nursing, do we need such a map, and if so, what should the content of the map include and why?

2. Across Europe we are not an all-graduate profession, we have considerable diversity in our educational preparation and practice, and no country has explicit learning outcomes or requirements for prescribed urology nurse education. So, at what level do we require our curriculum to be delivered?

3. If we need to collaborate with others in writing a urological nursing curriculum, and if so, who should our collaborators be?

4. If we succeed in writing a urological nursing curriculum, how should it be used?

Along with others, the EAUN also believes that now is the time for us to work to create a curriculum to ensure that urology nursing is increasingly fit for purpose, practice and award in the 21st century. We need you to help us do that. During EAUN 2018, a ‘world café’ event will consider the fundamental issues mentioned above and your views will be vitally important. Really do we have the opportunity to participate so radically in a project that can fundamentally effect our collective future - but here in Copenhagen we will do just that.

If the only constant really is change, then it seems inevitable that more and more demands will be made of us in the years ahead, and rightly so. Either we will be up to the task or we won’t. Urology nurses collectively have the experience, desire and ability to influence the future of urology healthcare across Europe, in an ever more positive, demonstrable and patient-centred way. It is this belief that drives our desire to develop a curriculum that will provide clear and agreed direction and recognition for urology nurse education to the benefit of all nurses in Europe, no matter where we practise. These are exciting times and we look forward to hear your views on what our tomorrow should be.

Reference

Sunday 18 March
16.15 – 17.30: 9th International EAUN Meeting Speciality Session 3, Creating OUR Urology Nursing Curriculum – at the “no fairy-tale café” - Green Area, Room 11 (Level 1)
THE AIS CHANNEL: PHYSICIAN EDUCATION ANYWHERE, ANYTIME.

Boston Scientific is the first Urology company to partner with the Advances In Surgery (AIS) Channel, the new online platform with live interaction for surgical education. AIS programming shares the latest surgical techniques from leading surgeons with professionals in the scientific community. Content is complimentary, available on any Internet-enabled device, with the goal of bringing accessible surgical education to everyone.

Visit Boston Scientific booth #F15 at EAU to experience the first AIS Channel Urology transmissions:

Penile Prosthesis Implantation
Monday 19 March 10:00 | Pre-recorded case by Dr Ignacio Moncada (Madrid)

GreenLight™ Enucleation
Sunday 18 March, 10:00 and 15:00 | Pre-recorded case live moderated by Dr Fernando Gómez-Sancha (Madrid)