

American Urological Association 2010 Annual Scientific Meeting Conference Review

Making Education Easy

29 May – 3 June 2010, San Francisco, CA, USA

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Welcome to our review of the American Urological Association's (AUA) 2010 Annual Scientific Meeting, held in San Francisco, CA, from 29 May through 3 June.

The AUA Annual Meeting is the leading urological meeting for urologists, the medical and surgical specialty concentrating on care of the male reproductive system and both the male and female urinary tracts.

At this year's AUA Annual Meeting, approximately 17,000 attendees from all over the world attended, around 1,600 abstracts on groundbreaking research and the latest advances in urological medicine were discussed, and approximately 350 pharmaceutical, device, and equipment exhibitors showcased the latest innovations in research, technology, and urological care. The following study abstracts and plenary sessions were selected and reviewed by Mr Ian Mundy, Urologist at Auckland City Hospital, Urology Manukau SuperClinic™, and Southern Cross Hospital Brightside.

We hope you find them interesting and helpful in your daily clinical practice.

Kind Regards,

Dr Chris Tofield

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Postoperative imaging is unnecessary after anastomotic urethroplasty

Authors: Terlecki R et al

Summary: The necessity and clinical impact of routine postoperative imaging after anastomotic urethroplasty were explored in this retrospective review of postoperative imaging data from 156 patients who underwent urethral reconstruction during 2007 through 2009. Patients underwent postoperative voiding cystourethrography (VCUG) at a mean of 24 days after surgery. Of the 110 anterior urethroplasties, 59 (54%) consisted of excision and primary anastomosis (EPA) via a two-layer technique, 28 patients (25%) underwent an augmented anastomotic (AA) procedure, and 23 (21%) underwent pure ventral onlays (flap or graft). All 46 posterior urethroplasties (PU) were performed with scar excision and primary anastomosis. Only 4 of the 156 patients (2.6%) had extravasation on postoperative VCUG (2 PU, 1 AA, 1 ventral onlay) and were successfully managed with catheter replacement and subsequent removal at a mean of 8 days afterward. None of the 59 men having EPA procedures demonstrated extravasation on VCUG.

Comment: The mean duration of catheterisation in this study seems rather long, in excess of 3 weeks. Most patients do not like catheters, and given that most anastomotic urethroplasties will be watertight at 2 weeks, I suspect that most patients would prefer to put up with the bother and expense of a urethrogram at 2 weeks with the opportunity of getting rid of their catheters sooner.

Abstract Session: Trauma/Reconstruction: Trauma & Reconstructive Surgery I. Journal of Urology. 2010;183(4): Supplement, Page e14.

<http://download.journals.elsevierhealth.com/pdfs/journals/0022-5347/PIIS0022534710003344.pdf>

Independent commentary was organised by Mr Ian Mundy, Urologist at Auckland City Hospital, Urology Manukau SuperClinic™, Southern Cross Hospital Brightside.

Research Review publications are intended for New Zealand health professionals

Complications of 'social' lithotomy

Authors: Andrich D et al

Summary: The incidence of complications from low 'social' lithotomy was recorded prospectively from patients undergoing perineal surgery for comparison with the reported complication rate of extended lithotomy. Outcomes are reported for 552 patients positioned in low 'social' lithotomy for urethroplasty (n=378), bulbar artificial urinary sphincter (n=136) and other perineal procedures (n=38). The lower legs were placed into lower leg boot-support (Yellowfins™, Anaids) and intermittent pneumatic compression stockings were applied with hip abduction of around 150 degrees between the two thighs and hip flexion of around 45 degrees. The median time in lithotomy was 2:05 hours. Complications developed in two patients (0.4%), consisting of lateral peroneal nerve neuropraxia in both, which settled completely in 1 patient after 6 months. The foot drop of the other patient did not resolve completely after 3 years of follow-up. Both patients were tall (2.05m and 1.85m), had a BMI >30 and their procedure lasted between 3–5 hours. The study authors note that this complication rate is significantly less than the reported complication rate of 15.8% for extended lithotomy.

Comment: Prolonged time in the lithotomy position and obesity are the two key risk factors for neurovascular lower extremity complications, irrespective of whether the low social lithotomy or exaggerated lithotomy is used. I cannot really see much advantage in the extended lithotomy position favoured by North American Urologists.

Abstract Session: Trauma/Reconstruction: Trauma & Reconstructive Surgery I. Journal of Urology. 2010;183(4): Supplement, Page e16.

<http://tinyurl.com/24kufqr>

Urethroplasty for radiotherapy-induced bulbomembranous strictures: a multi-institutional experience

Authors: Meeks J et al

Summary: Outcomes are reported for 30 men (mean age 69 years) who underwent urethroplasty for refractory proximal urethral obstruction, 70% of whom had external beam radiation for prostate cancer, 50% received brachytherapy and 27% underwent both modalities. Mean time from radiation exposure to stricture development was 112 months. Stricture location was bulbar in 40% and posterior/membranous in 60%. Mean stricture length was 2.9 cm. Excision with primary anastomosis was used in 87% of patients, with two patients requiring a flap and two a graft. Two men had concomitant penile urethral strictures that were repaired with buccal mucosa grafts during the same operation. Hospitalisation was ≤23 hours in 70% of patients. Successful urethral reconstruction was achieved in 24 men (80%). The mean time to recurrence was 5.1 months. Two men required subsequent balloon dilation of stricture recurrence. There were no cases of urinary diversion. Ten percent of men developed transient postoperative incontinence, 40% had persistent incontinence and 13% received artificial urinary sphincters. Rates of erectile dysfunction did not differ significantly before and after urethroplasty (47% vs 50%).

Comment: With the already widespread use of brachytherapy, brachytherapy plus external beam radiotherapy and now increasing use of high-dose rate brachytherapy to treat carcinoma of the prostate, we can expect to see more and more of these radiotherapy-induced urethral strictures, which are very difficult to manage because of poor vascularity and poor wound healing.

The stricture recurrence rate of only 20% is surprisingly good in this group of patients, although one might expect to see a few more failures with longer follow-up.

Given that less invasive approaches such as self-dilatation, stent placement or permanent suprapubic catheter are certainly not without their problems, based on this study, I would be more enthusiastic about undertaking urethroplasty for radiation-induced strictures.

Four patients required an artificial urinary sphincter. It was not stated whether the cuff was placed around the bladder neck or bulbar urethra. It would be very interesting to know this.

Abstract Session: Trauma/Reconstruction: Trauma & Reconstructive Surgery I. Journal of Urology. 2010;183(4): Supplement, Page e17.

<http://tinyurl.com/296bdns>

Urethral rest promotes identification of resectable stricture segments during anterior urethral reconstruction

Authors: Terlecki R et al

Summary: These researchers reviewed data from 135 patients who underwent anterior urethroplasty between 2007 and 2009 at a single surgical centre. Twenty-eight of these patients (21%) were placed on a period of urethral rest for a median duration of 3 months (not less than 2 months for all 28 patients) prior to reconstructive surgery, 15 of whom had suprapubic catheter placement. Urethral rest promoted identification of severely fibrotic stricture segments, which enabled focal or complete excision in 75% (excision and primary anastomosis – 12/28, 43%; augmented anastomotic – 9/28, 32%); the remaining 7 patients (25%) underwent straightforward graft or flap ventral onlay. Median stricture length was 3 cm and median follow-up was 486 days. Four (14%) experienced recurrence (1 EPA, 3 AA). Recurrent strictures were less likely to have been managed with a suprapubic catheter preoperatively (40% vs 57%).

Comment: In this paper, the data presented did not quite support the conclusions, but nevertheless the message is a valid one. Strictures which have been recently dilated appear less severe than they actually are. If a patient is performing self-dilatation to keep a stricture open, it is better to get them to stop this several months prior to undertaking a urethroplasty or indeed performing a urethrogram, so that the full extent of the stricture will be declared.

Abstract Session: Trauma/Reconstruction: Trauma & Reconstructive Surgery II. Journal of Urology. 2010;183(4): Supplement, Pages e24–e25.

<http://tinyurl.com/2djsyk9>

Management of recurrent bladder neck contractures with urethrotomy and mitomycin C

Authors: Vanni A et al

Summary: Data were retrospectively reviewed from 16 patients (mean age 66 years) who had recurrent bladder neck contractures treated with cold knife urethrotomy combined with intralesional injection of 0.3 mg–0.6 mg of mitomycin C. Successful treatment was defined as a bladder neck patent to a 17 Fr flexible cystoscope. Fifteen patients had previous radical retropubic prostatectomy, 2 with adjuvant radiation therapy, while 1 patient had prior trans-urethral resection of the prostate. Six patients (37%) had 1 prior bladder neck incision, while 10 (63%) had >2 previous bladder neck incisions. Preoperatively, 3 patients presented with indwelling foley catheters while 5 patients required self-dilatation. At a mean follow-up of 9.4 months, 12 patients (75%) achieved a patent bladder neck after 1 procedure, while 3 (18%) achieved a patent bladder neck after 2 procedures. Seven of 8 patients presenting with prior indwelling urethral catheter or requiring self-dilatation attained a patent bladder neck without need for intermittent dilation.

Comment: In this interesting study from the Lahey Clinic, the antiproliferative properties of mitomycin C are used. Early results appear promising. If the technique proves to be reproducible and durable, this will be a useful way of managing this difficult problem, because when open surgery is undertaken via a perineal approach, severe incontinence is usually the rule, requiring placement of an artificial urinary sphincter.

Abstract Session: Trauma/Reconstruction: Trauma & Reconstructive Surgery III. Journal of Urology. 2010;183(4): Supplement, Page e426.

<http://tinyurl.com/267nvpu>

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Outcome of vessel-sparing excision and primary anastomosis for bulbar urethral strictures

Authors: Tisdale BE et al

Summary: These researchers sought to determine long-term outcomes for a cohort of 24 patients (mean age 42 years) who underwent vessel-sparing excision and primary anastomosis urethroplasty (VS EPA) for proximal bulbar urethral strictures between 2005–2009. Stricture aetiology was idiopathic in 14 (58%), perineal trauma in 4 (17%), pelvic fracture distraction injury in 4 (17%), instrumentation in 1 (4%) and congenital in 1 (4%). Mean follow-up was 48 weeks (range 12 to 237 weeks). Mean stricture length was 2.25cm. Nineteen patients (79%) had previous treatment procedures, with 13 (54%) having had dilations and 13 (54%) having urethrotomy. Fourteen (58%) had ≥ 2 previous treatments before referral to the centre. VS EPA was highly successful, with no further interventions needed in any patient. One patient is being monitored for a stable 18F annularity. One patient that previously underwent transurethral prostatectomy had stress incontinence and underwent male sling. No significant perioperative complications occurred.

Comment: See below.

Abstract Session: Trauma/Reconstruction: Trauma & Reconstructive Surgery III. Journal of Urology. 2010;183(4): Supplement, Pages e425-e426.

<http://download.journals.elsevierhealth.com/pdfs/journals/0022-5347/PIIS0022534710025462.pdf>

Bulbar artery sparing during reconstruction of pelvic fracture urethral distraction defects

Authors: Gomez R et al

Summary: These researchers describe a technique designed to preserve bulbar arterial blood supply to the bulb during pelvic fracture urethral distraction defects (PFUDD) reconstruction. Outcomes are reported for 7 patients aged 16–69 years with PFUDD who were reconstructed with sparing of bulbar arterial blood flow. Distraction lengths measured 2 to 2.5 cm. In all cases it was possible to preserve one artery and perform a tension-free, wide mucosa-to-mucosa, end-to-end anastomosis. At a mean follow-up of 10.2 months, all patients were voiding normally.

Comment: Described by Jordan in 2007, the vessel-sparing technique also differs from a standard anastomotic repair, in that the urethral stumps are spatulated on the same side.

The technique is useful in patients with post-TUR sphincteric strictures who are likely to need an artificial urinary sphincter following a urethroplasty, and as Gomez et al. have shown, the technique can also be used in some pelvic fracture urethral injuries, providing the distraction length is not too long. I have also used this technique in a patient with previous hypospadias surgery who required an anastomotic repair for a proximal bulbar urethral stricture.

Abstract Session: Trauma/Reconstruction: Trauma & Reconstructive Surgery III. Journal of Urology. 2010;183(4): Supplement, Pages e474-e475.

<http://download.journals.elsevierhealth.com/pdfs/journals/0022-5347/PIIS0022534710010050.pdf>

Perineal urethrostomy for anterior urethral stricture disease: clinical outcome and quality of life assessment

Authors: Barbagli G et al

Summary: Data were retrospectively analysed for 173 patients who underwent (from June 1978 to June 2007) perineal urethrostomy for anterior urethral stricture diseases as part of a plan for a staged urethroplasty repair for a complex urethral stricture. Stricture aetiology was unknown in 50.3% of the cases, lichen sclerosus in 17.3%, catheter in 13.3%, instrumentation in 8.7%, failed hypospadias repair in 4.6%, trauma in 4.1% and infection in 1.7%. Stricture length was 1 to <2 cm in 1.2% of cases, 2 to <3 cm in 3.5%, 3 to <4 cm in 12.1%, 4 to <5 cm in 13.8%, 5 to <6 cm in 7.5%, >6 cm in 4.1% and panurethral in 57.8%. Of 173 patients, 91 (52.6%) underwent prior urethroplasty. Median follow-up was 62 months. Of 173 cases, 121 (70%) were successful and 52 (30%) were failures, requiring revision of the perineostomy. Of 173 patients, 135 (78%) were satisfied with the results obtained with surgery, 33 (19.1%) were very satisfied, 127 (73.4%) with a median age of 57 years refused to do the second stage of urethroplasty and 46 (26.6%) with a median age of 47.5 years are currently on a waiting list for the second stage of urethroplasty.

Comment: For the elderly gentleman with a panurethral stricture, treatment of which is labour intensive, perineal urethrostomy is a good option. It is quick and easy to do and despite the need to sit to void, patient satisfaction is high.

Indeed, nearly three-quarters of patients in this study elected to keep the perineal urethrostomy rather than go on to have the second stage completed. What is a little surprising is the relatively high number that needed revision (30%). The key to success with a perineal urethrostomy, as with all types of urethral surgery, is aggressive and wide spatulation into bleeding tissue.

Abstract Session: Trauma/Reconstruction: Trauma & Reconstructive Surgery IV. Journal of Urology. 2010;183(4): Supplement, Page e473.

<http://tinyurl.com/23nopzr>

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Is prostate cancer an infectious disease?

Authors: Klein EA

Summary/Comment: Increasingly, epidemiological evidence indicates that prostate cancer may be an infectious disease. Worldwide, about 20% of all cancers are caused by infections – mostly by viruses – so it is not unreasonable to speculate that a common cancer such as prostate cancer could also be caused by an infection. This body of research was discussed by Professor Klein, who also talked about his team's discovery of a novel retrovirus called XMRV (xenotropic murine leukaemia virus-related virus), which was initially isolated from prostate cancer tissue in men who have a genetic predisposition to prostate cancer.

XMRV is only the third retrovirus shown to cause an authentic infection in humans – the other two are HIV and HTLV, which causes T-cell leukaemia and lymphoma. XMRV is associated with prostate cancer and chronic fatigue syndrome in humans – all individuals are at risk, regardless of RNaseL/HPC1 genotype, variants of which have been found to be associated with an increased risk for infections in animals and prostate cancer in humans. In fact, Professor Klein and his team hypothesise that the XMRV virus probably infects everyone, but persists in those who are deficient in their antiviral defences.

XMRV is responsible for both acute and chronic infections in primates; the prostate epithelium is an early target, while the stroma is a late target. Evidence indicates that XMRV may be transmitted by blood transfusion; patients with chronic fatigue syndrome are banned from donating blood in Canada, the UK, Australia and New Zealand.

Professor Klein and colleagues speculate that the XMRV virus is able to integrate its genetic material into the chromosomes of the host and turn on cancer-causing genes in the host. These researchers have discovered that XMRV growth is fuelled by androgen and an androgen response element (ARE) has been found in the XMRV promoter region. They hypothesise that the XMRV virus may make genes that are normally androgen-indifferent become sensitive to androgen; a potentially oncogenic mechanism that is compelling in view of the fact that the prostate is bathed in androgen.

A causal link between the XMRV virus and any human disease remains to be established. If any such link is proven, then many important clinical implications arise in regard to new screening tests, its prognostic value (research suggests that the virus is associated with higher grade cancers), and the possibility of new pharmacological therapies and preventative vaccines.

Plenary Session: State-of-the-Art Lecture.

<http://webcasts.prous.com/AUA2010/html/1-en/template.aspx?section=7&p=7,11872>

Multiparametric 3T endorectal prostate MRI

Authors: Richstone L

Summary/Comment: Dr Richstone discussed recent advances in magnetic resonance imaging (MRI) techniques that have led to multiparametric 3T MRI, a modality that is expected to help urologists overcome many of the clinical dilemmas surrounding the diagnosis, staging and management of prostate cancer. When used individually, currently available MRI techniques are associated with the following limitations:

- T2 weighted imaging
 - poor specificity
- MR spectroscopic imaging
 - labour intensive analysis
- Diffusion Weighted Imaging (DWI)
 - poor spatial resolution
- Dynamic Contrast Enhanced (DCE) MRI
 - lack of a standardised protocol

Multiparametric MRI combines several or all of the above techniques in one study, thereby allowing clinicians to compensate for or overcome limitations of any one technique when used individually. Specific advantages of multiparametric MRI include:

- performed in a reasonable timeframe
- high resolution of imaging
- clinical study data have demonstrated that this modality provides improved detection and localisation, volume assessment, and staging accuracy of prostate cancer.

Dr Richstone outlined possible future applications for multiparametric MRI:

- this modality may help to identify patients harbouring active disease
- help to provide for non-invasive follow-up instead of annual biopsy
- may help to increase patient and physician acceptance of surveillance
- may aid in choice of focal therapies and help to identify appropriate patients
- help with treatment planning
- provide non-invasive monitoring.

We may also see tailored radiation therapy, whereby radiotherapy dose can be boosted to dominant tumour lesions, with a lower dose and toxicity to normal tissue, such as the rectum. Multiparametric MRI may even have a role in screening, with a negative multiparametric MRI obviating the need for initial biopsy and associated morbidity. In the future, this modality may be integrated into targeted diagnostics and treatment.

In conclusion, multiparametric MRI may prove particularly useful in patients with negative prior biopsies but rising PSA levels, and it may aid in treatment selection and tailoring. Finally, this modality may prove to be an accurate means of detecting local recurrence.

Plenary Session: State-of-the-Art Lecture.

<http://webcasts.prous.com/AUA2010/html/1-en/template.aspx?section=7&p=7,11872>

Androgen-deprivation therapy in prostate cancer and cardiovascular risk

Authors: Sagalowsky AI

Summary/Comment: Professor Sagalowsky discussed a recently released Science Advisory on the use of androgen-deprivation therapy (ADT) in prostate cancer, issued by the American Heart Association, American Cancer Society, and American Urological Association.

ADT is a widely used treatment for prostate cancer. However, accumulating clinical evidence attests to an association between ADT and an increased risk of cardiovascular (CV) events, including myocardial infarction and CV mortality, particularly in patients with a history of cardiac disease. The therapy causes metabolic changes including weight gain, insulin insensitivity, increases in glucose levels and alteration in lipid profiles. The AHA/ACS/AUA Science Advisory has reviewed and summarised the metabolic effects of ADT, evaluated the data regarding a possible relation between ADT and CV events in patients with prostate cancer, and has made suggestions as to the evaluation and management of patients, both with and without known cardiac disease, in whom ADT is being initiated:

- Urologists should discuss the metabolic and possible CV effects of ADT as part of the decision making process on whether or not to begin therapy.
- The primary physician should be made aware of when a patient begins ADT.
 - obtain baseline BP, lipid profile, glucose level
- Current data *do not* allow more definitive recommendations for:
 - frequency of monitoring, or for further cardiac evaluation in patients *without* prior history of cardiac disease.
- Heart-healthy adjustments in lifestyle *are* recommended for patients on ADT:
 - exercise, weight control, smoking cessation, BP control, lipid level control, dietary modifications
- The degree to which any of these may overcome associated CV risks of ADT is currently unknown.
- Currently, *no changes* are indicated in the known beneficial uses of ADT in cancer of the prostate:
 - overt metastatic disease
 - palliative primary chemotherapy in elderly patients
 - as part of primary therapy with radiation treatment in patients with localised high-risk disease
 - in cases of PSA relapse after primary therapy with either surgery or radiation.
- Patients currently taking GnRH agonists *should not stop therapy without consulting their physician.*
- However, greater caution should be considered before use for small PSA relapse and in patients with known cardiac disease.
- ADT may be associated with an increased risk of CV events, especially in patients with prior cardiac disease (myocardial infarction, congestive heart failure, arrhythmia)
- Further prospective studies are needed to better define the degree of CV risk, and to determine whether or not it is causal or an indirect association.

Plenary Session: AHA/ACS/AUA Science Advisory.

<http://tinyurl.com/23wv5f4>