

Vesica



Sydney Urodynamic Centres newsletter for medical practitioners

IUGA 2007 update

by Hans Peter Dietz

The IUGA meeting in Cancun, Mexico, was less well attended than last year's conference in Athens. Nevertheless, Australian colleagues were strongly represented both in the audience and on the podium. The meeting was very interesting from a scientific point of view, and the location on the Mexican 'Mayan Riviera' didn't hurt either. Rather surprisingly, industry-backed research was less prevalent than last year which affected mainly those sessions dealing with the pharmacological treatment of stress and urge incontinence.

Diagnostics

Ultrasound continues the subject of most contributions covering the diagnostic workup of women with incontinence and prolapse. The author presented data showing that major trauma to the pelvic floor muscle ('levator avulsion') is associated with a 70% increase in the risk of significant (Grade 2 and higher) pelvic organ prolapse. Other imaging studies demonstrated in vivo quantification of levator biomechanics, a new method of determining urethral mobility and support, the utility of measuring detrusor wall thickness by ultrasound, and normal values for hiatal distensibility ('ballooning') and pelvic organ descent. Jenny Kruger from Auckland presented the first-ever comparison of 3D ultrasound and MR imaging of the levator muscle and hiatus and showed that ultrasound may be preferable to MR not just for reasons of cost and accessibility, but also because it is more likely to produce accurate measurements during manoeuvres, e.g. on Valsalva. Anneke Steensma from Rotterdam, formerly of Sydney, presented two interesting studies comparing translabial ultrasound with defecation proctography, showing that ultrasound is equally able to diagnose rectocele and rectal intussusception or rectal prolapse. This implies that it may be possible to avoid defecation proctography, (which is not well tolerated and expensive), in many women with obstructed defecation.

There were few contributions covering urodynamic testing, but an interesting paper authored by Philip Toosz- Hobson from the UK showed that urodynamics increased compliance with future treatment, suggesting that women are more likely to expect a treatment effect after obtaining the result of this test. A Urodynamics paper from Peter Sand's unit in Illinois, on the other hand, demonstrated one of the main downsides of this diagnostic modality, that is, operator dependence. A prevalence of 70% for detrusor overactivity (DO) is highly unusual in a non- neuropathic population. Not surprisingly, they found no statistically significant association between DO and symptoms such as urgency, urge incontinence and frequency- demonstrating that in certain hands urodynamics may be quite useless as a diagnostic test!

Treatment of the overactive bladder

As regards anticholinergics in general, it was shown again that many patients do not persist with taking anticholinergics: On contacting 199 women who had presented with overactive bladder symptoms on average 6 years prior, 94% were still symptomatic, but only 28% were using antimuscarinics.

This year there were only a few industry- sponsored papers on the use of anticholinergics, most showing that Solifenacin may well be superior to Tolterodine. One particularly brilliant presentation demonstrated that the worse your symptoms, the more drug you are likely to require to treat symptoms of the irritable bladder! On the other end of the usefulness scale, Jenny King from Westmead presented her ongoing randomised controlled trial of Botox in detrusor overactivity. Despite low numbers, the active treatment resulted in a significant (2/3) reduction in leakage episodes, and the effect persisted for over 6 months. This is very promising data; unfortunately, Botox is not yet available on PBS.

Krcmar et al. from Prague showed that inflammatory changes

in the bladder wall of women with detrusor overactivity are common, which goes well with our everyday observations on office cystoscopy. This finding supports the importance of lifestyle modification and avoidance of bladder irritants (such as coffee, alcohol etc), and the importance of avoiding urinary tract infections in women with symptoms of the overactive bladder. In this context it was interesting to see the results of an RCT from Taiwan that demonstrated a synergistic effect between local oestrogen treatment and anticholinergics.

As regards Duloxetine for stress incontinence, a paper from King's College London confirmed that most women will not take the drug for longer periods of time. Only 9% of women were still on Duloxetine when followed up after one year. Not surprisingly, the manufacturer seems to have given up on the aggressive marketing campaign we saw last year.

Surgical treatment of stress incontinence

Mickey Karram from Cincinnati presented data on 72 patients after TVT-secur, recruited in a multicentre study including some of the most prominent names in this field. It seems that a lot of very experienced urogynaecologists and urologists feel the need to try out this new device. It's a pity really since any real understanding of the mechanism behind the success of the suburethral tapes would make one very cautious. Not surprisingly, success rates are poor even in the short term: Karram showed 25% positive stress test at 5 weeks, while short-term subjective cure rates were reported as 78% by Albrich from Germany, 74% by Assassa from the UK 74%, and 69% by Saltz from the US. Overall it is difficult to see how anyone would want to try this new procedure outside the context of a randomised controlled trial. Based on this data one would probably need less than 100 patients in each arm to prove the inferiority of the TVT-secur versus the TVT or Monarc which both consistently achieve subjective cure rates between 85 and 95%.

A meta-analysis presented data from a total of 11 RCTs comparing the TVT with the inside-out form of transobturator tape placement, showing that success rates are similar. There were less bladder injuries and less voiding dysfunction with the inside-out transobturator tapes, but more vaginal erosions and groin pain. Groin pain seems to be a problem peculiar to the inside-out technique, and this may be due to nerve injury involving the posterior branch of the obturator nerve or the clitoral nerve. The outside-in approach exemplified by the Monarc procedure may be preferable on this count since the surgeon can choose the location of the external wound. And while recurrent stress leakage may be more common after

Monarc than after TVT-O, subjective outcomes do not differ as shown in a RCT from Australia reported by Lore Schierlitz from Melbourne. The TVT-O may cause more thigh pain (mean VAS score 4.9 vs. 2.6), which can persist for weeks (mean 17.3 vs. 7 days) as shown in an RCT from Slovenia, but subjective cure rates are in the order of 85-95% for both methods.

As regards bladder and urethral injuries, an observational series from Sydney, presented by A/Prof Chris Benness, showed a prevalence of such injuries of 5% in 500 TVTs and 0.6% in 475 TVT-Os. The authors caution that, while much less likely, lower urinary tract injuries may still occur with transobturator tapes, and suggest that a cystoscopy be performed after all such procedures.

Prolapse surgery

A very interesting new concept was presented in the form of a video by Peter Rosenblatt from Cambridge, Massachusetts. He uses the transobturator route to place a sling around the anal canal to accentuate the anorectal angle and reduce faecal incontinence. There may be promise in this method for the treatment of female pelvic organ prolapse, as any such technique would tend to reduce the size and distensibility of the levator hiatus. What's more, such a sling may effectively compensate for past levator trauma. In some women this is very likely to be a decisive factor as regards longterm surgical success.

Not surprisingly, the newer mesh repair techniques were well represented at IUGA: Apogee and Perigee systems as well as the anterior and posterior Prolift were shown to be effective and safe in a multitude of papers, but erosion rates ranged from 1 to 10%. Most seem to occur in the midline and at the cranial end of the scar; and erosion seems more common after hysterectomy, indicating that reduced vascularity is one of the key issues. A study from Indiana showed that it is difficult to impossible to eradicate bacteria from the vaginal even in the very short term, which implies that vaginal mesh implantation is necessarily contaminated. The authors concluded that, given the very low rate of mesh infection, mesh extrusion is unlikely to be due to bacterial contamination.

Cure rates however do seem to be consistently higher than with conventional surgery although properly dimensioned RCTs are still lacking. The author feels that the main issue is patient selection, and one of the main research tasks for the next few years will be to identify those women whose prolapse is highly likely to recur without mesh augmentation.

SURGERY FOR URINARY STRESS INCONTINENCE – IS THE OPTIMUM SLING AVAILABLE IN 2007?

by Christopher Benness

Urinary stress incontinence is a common problem, affecting the quality of life of over 10% of Australian women. Although many can have their symptoms significantly improved by conservative management, surgical treatment is often required if this is unsuccessful. Over 150 operations have now been described for treating urinary stress incontinence. The Colposuspension procedure was accepted as the best operation for most women in the 1980's and 1990's, performed by either open or laparoscopic techniques. However, since the mid-urethral slings were described by Ulmsten in 1996, they have radically changed the surgical management of Urodynamic stress incontinence. These minimally invasive sub-urethral slings have become the accepted new 'gold standard' procedure, with over one million having been inserted world-wide. When performed as a primary procedure, cure rates in the order of 90% are expected.

The mid-urethral slings have changed considerably over the past 10 years, both in sling material and insertion technique. The original mesh used in the slings was associated with an unacceptably high rate of infection and rejection. These problems are now rare with the use of macroporous (Amid type 1), monofilament polypropylene material. Polypropylene does seem to be the best material available at present for use in this type of surgery, and is also widely used by general surgeons in hernia repairs. Further changes in other characteristics of the mesh such as mesh stiffness or mesh coating may also decrease the current low rate of erosions. Recent evidence (de Tayrac et al) suggests that collagen coating of polypropylene mesh may further decrease the risk of erosion.



Fig 2: An example of macroporous polypropylene mesh in current use

The ideal mesh material for use in sub-urethral slings would be chemically and physically inert, non-carcinogenic, and mechanically strong. It should not induce an allergic reaction, excessive inflammatory response, or be physically modified by surrounding tissues. It should be easy to handle and also affordable. Although this ideal mesh does not yet exist, most of the required characteristics have been achieved, to the benefit of

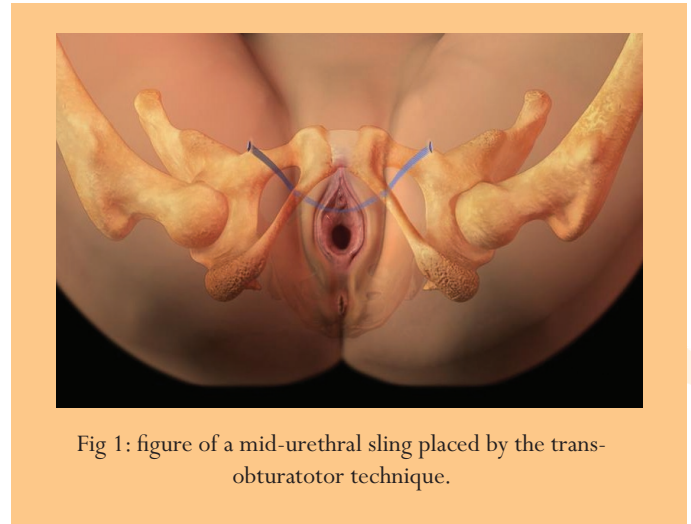


Fig 1: figure of a mid-urethral sling placed by the trans-obturator technique.

both patient and surgeon.

Mid-urethral slings can be inserted by a variety of techniques – the most relevant options being the original retro-pubic insertion (eg TVT or Sparc procedures), as opposed to the more recent trans-obturator approach (eg TVT-O or Monarc procedures). Current evidence suggests that the trans-obturator approach is safer, due to avoidance of the peritoneal cavity, and has a lower prevalence of post-op voiding dysfunction. Several companies are releasing even less invasive slings with no exit point required in either the groin or supra-pubic area. Efficacy data for these is awaited with interest.

In conclusion, the current polypropylene mid-urethral slings are effective and associated with low complication rates. However, further advances are expected in sling material, insertion technique and hopefully cost.

References:

- Ulmsten et al. An ambulatory surgical procedure under local anaesthetic for treatment of female urinary incontinence. *Int Urogyn J.* 1996. 7, 81-6
- De Tayrac, Alves, Therin. Collagen-coated vs noncoated low-weight polypropylene meshes in a sheep model for vaginal surgery. *Int Urogyn J.* 2007. 18:513-520
- Al-Tayyem, Benness, Korda, Farnsworth, Burton. TVT Vs TVT-O: A study comparing early complications. *Int Urogyn J.* 2007. Vol 18. Suppl 1. 37

Who are 'Sydney Urodynamic Centres'?

Sydney Urodynamic Centres has been providing the women of New South Wales and their doctors with a comprehensive urodynamic service for the past 20 years. They are able to scientifically assess female urinary incontinence and lower urinary tract dysfunction, provide an accurate diagnosis to the referring doctor and advise on clinical management.

The service is run by three urogynaecologists, trained and accredited in this sub-specialty by the Royal Australian and New Zealand College of Obstetricians and Gynaecologist (RANZCOG). These partners are assisted by a group of highly trained nurses who are adept at making the experience more pleasant for the women. There are seven centres around Sydney where studies can be performed in order to facilitate easy access to the service for most women.

These locations are:

SYDNEY

Sydney Urodynamic Centre
Level 3, 139 Macquarie Street, Sydney

CHATSWOOD

North Shore Urodynamic Centre
Suite 70, Chatswood Village
47 Neridah Street, Chatswood

CAMPERDOWN

Camperdown Urodynamic Centre
Suite 404, RPAH Medical Centre
100 Carillon Avenue, Newtown

CONCORD

Concord Urodynamic Centre
Level 2, Concord Hospital Medical Centre
209 Hospital Road, Concord West

BANKSTOWN

Bankstown Urodynamic Centre
Suite 2, Level 1, 56 Kitchener Parade, Bankstown

LIVERPOOL

Liverpool Urodynamic Centre
Suite 20, 2nd Floor, 17 Moore Street, Liverpool

PENRITH

Penrith Urodynamic Centre
Nepean Private Specialist Centre
Suite 1, 1A Barber Avenue, Penrith

For all appointments call (02) 9790 6969

Associate Professor

Hans Peter Dietz

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Associate Professor Dietz graduated from Heidelberg University, Germany, in 1988. After first emigrating to New Zealand, he arrived in Australia in 1997 and completed his FRANZCOG training in 1998. Between 1999 and 2002, Associate Professor Dietz undertook urogynaecology subspecialty training in Sydney, in addition to presenting a PhD thesis at the University of NSW. His major research interests include the interaction between pelvic floor biomechanics and childbirth, pelvic floor imaging, as well as the effects of anti-incontinence surgery on anatomy and voiding function. Today, he is employed as Associate Professor of Obstetrics and Gynaecology at the Nepean Campus of the University of Sydney, as well as a specialist in urogynaecology at the Sydney Urodynamic Centres.



Associate Professor

Christopher Benness

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Following graduation from Sydney University, Associate Professor Benness did his speciality and sub-specialty training in both Sydney and London. An accredited sub-specialist in urogynaecology with the RANZCOG, he is a trainer and examiner in this field. He is a senior specialist in gynaecology at the Royal Prince Alfred Hospital, where he is also Head of the Department of Urogynaecology and a past Chairman of the Medical Board. He is the current Chairman of the NSW State Committee of RANZCOG. He is active in both teaching and research, and is a Clinical Associate Professor at the University of Sydney. His main research interests are improving surgical procedures for stress incontinence and prolapse.



Dr Andrew Korda

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Following graduation from the University of Sydney, Dr Korda did his speciality training at the Royal Prince Alfred Hospital in Sydney, with further training in Oxford and New York. He is an accredited sub-specialist in urogynaecology, pelvic floor disorders, and reconstructive pelvic surgery. Dr Korda is also a senior specialist in gynaecology at the Royal Prince Alfred Hospital, where he is Chairman of the Pelvic Floor Unit. He is a clinical lecturer in gynaecology at the University of Sydney, and is involved in both teaching and research. Dr Korda was Chief Examiner in Urogynaecology and past Chairman of the Urogynaecology Sub-specialty Committee of the RANZCOG. He is also trustee of the Australian Bladder Foundation.



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