

Vesica



Sydney Urodynamic Centres newsletter for medical practitioners

Urethral Syndrome

By Doctor Andrew Korda

The female urethral syndrome

The female urethral syndrome is a condition characterised by lack of objective findings but with subjective complaints of retropubic pressure, dyspareunia, diurnal urinary frequency, dysuria and urethral irritation. Sometimes sterile pyuria of unknown aetiology is also present.

The pathogenesis of urethral syndrome is not known and a specific secondary cause can be identified only in a minority of women.

There is no evidence of abnormal detrusor or urethral activity or any disease of the urinary tract.

It is a condition of younger women, but can occur in any age group. Stressful events and psychological symptoms have been found to exacerbate the irritative symptoms in women.

The urethral bacteriological flora, like that of the vagina, is altered by age, local changes in pH, the use of anti-microbial drugs and reduced cellular glycogen.

The micro-organisms isolated from women with urethritis show the same virulence factors as the uro-pathogens causing acute cystitis. E.coli, Chlamydia trachomatis, Neisseria gonorrhoea, ureaplasma urealyticum, Trichomonas vaginitis, Gardnerella vaginitis, S. saprophyticus, Candida albicans and non-albicans have all been found to be pathogenic of the urethral syndrome.



Figure 1: Appearance of urethral syndrome on urethroscopy

Inflammatory reactions of the urethral wall have also been known to occur by repeated introductions of a catheter into the urethra.

Urethritis

Urethritis is a common cause of chronic pelvic pain in women and a careful history, with emphasis on urinary symptoms, may be the key to directing the investigations.

A thorough sexual history of the patient, including evaluation of sexual partners, is mandatory and clinical evidence of infections, both locally and systematically, should be sought. This must be backed up by microbiological tests that document positive cultures.

The diagnosis may be made on the basis of the history, the clinical finding of a urethra that is tender to palpation, the presence of pus cells and culture of the same uro-pathogens as in cystitis but at a much lower bacterial count.

Approximately 90% of women with low count bacteruria with have pyuria that suggests urethritis. It has been suggested that a differential in the urethrovesical urinary white cell count may distinguish urethritis from cystitis. The first 50ml of voided urine probably contain the cells of the urethra.

Urethral swabs for culture and sensitivity may also be helpful. Swabs should be obtained at least one hour after the patient has urinated to avoid contamination of bladder urine.

Diagnostic tools

Urethroscopy is a useful diagnostic tool and as it is performed during urodynamic testing, can be diagnostic.

Ultrasound has been used to investigate the urethrae of women who have frequency and urgency symptoms, but is of somewhat limited value. A urethral diverticulum is conveniently excluded by translabial or transvaginal ultrasound.

High resolution magnetic resonance imaging (MRI) with phased array pelvic and endorectal coils has dramatically enhanced the ability to visualise abnormalities of the female urethra, including urethral diverticulum, urethral trauma, fistula formation and peri-urethral abscesses.

... continued from page 1

Endo-vaginal MRI can be used to clearly demonstrate the anatomy of the urethra and also has a role in the evaluation of complex urethral and peri-urethral abnormalities.

Assessment and treatment

Women presenting with symptoms suggestive of urethral syndrome are best assessed and managed using a multi-disciplinary approach.

Options should include local therapy, pain relief - possibly with the expertise of a pain management team - and psychological support.

Invasive and irreversible therapeutic and surgical procedures should be reserved as final options.

Single dose anti-microbial regimens offer the advantage of reduced cost, good tolerability, minimal alteration of normal bacterial flora and the potential for good patient compliance. Clinical cure rates for non-gonococcal urethritis are in excess of 85% while eradication of Chlamydia occurs in almost 100%. Treatment of gonococcal urethritis is usually by single intramuscular dose of Ceftriaxone.

How bad does pelvic organ prolapse have to be to cause symptoms?

By Associate Professor Hans Peter Dietz

Pelvic organ prolapse

Pelvic organ support in asymptomatic women varies markedly, with a significant minority of asymptomatic nulliparae showing first degree pelvic organ 'prolapse'. This has been demonstrated on imaging¹ and on clinical assessment.²

In parous women, symptoms of prolapse are common, but very variable for a given degree of pelvic organ descent.³

Currently, no data exists that would help us decide whether a certain degree of prolapse is relevant or not, or whether a given degree of prolapse is sufficient to explain symptoms.

This is an important issue in view of the fact that prolapse is generally considered a relative indication for surgical treatment. On clinical assessment alone, the association between symptoms of prolapse and vaginal wall descent is poor.^{4,5}

Recent studies

We recently performed a retrospective study reviewing the case notes of 735 women who had been seen for symptoms of lower urinary tract dysfunction and prolapse at Sydney Urodynamic Centres. The assessment included an interview, clinical examination, multichannel

urodynamics and imaging. 2D and 3D/ 4D capable ultrasound systems (Philips ATL HDI 1000 and Medison SA 8000) were used to determine pelvic organ descent on maximal Valsalva.

In order to identify the association between descent and symptoms of prolapse (feeling of a vaginal lump or bulge, or a dragging sensation), we excluded 74 women in whom there was prolapse of several compartments, without one compartment being clearly dominant over the others (>10mm difference between descent of compartments).

Findings

The 114 women with symptomatic single compartment prolapse included 56 cystoceles and 48 rectoceles. The further the bladder or the rectum descended, the more likely were symptoms of prolapse in those women (cystocele, -23.8mm vs. -1.3mm, $P < 0.001$; rectocele, -21.4mm vs. -1.5mm, $P < 0.001$).

When the data was analysed with the help of receiver operator curves (ROC, see Figures 2 and 3), a compromise between avoiding false negatives and optimising true positives suggested a cut-off of -10, i.e., 10mm below the symphysis pubis, for cystocele, and -15mm for rectocele.

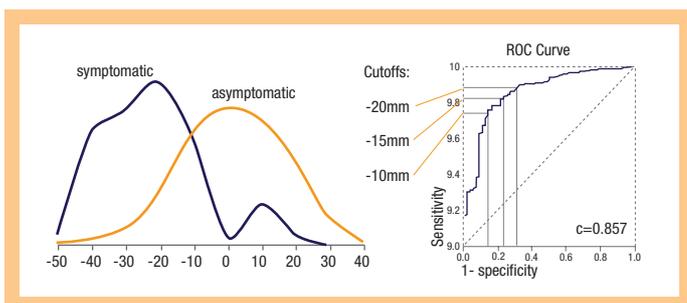


Figure 2: Histograms for bladder descent in mm (left) in asymptomatic (orange) and symptomatic women (purple) and receiver operator curve for bladder descent as a test for symptomatic prolapse (right). Lines define proposed cut-offs.

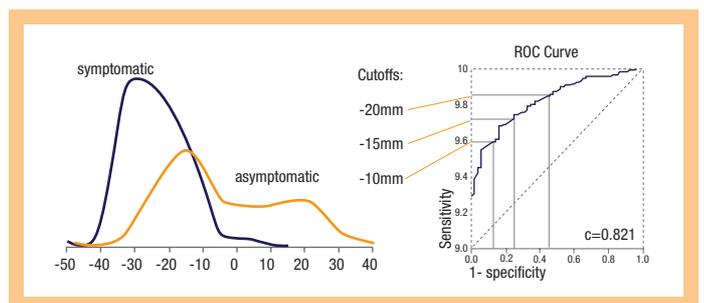


Figure 3: Histograms for rectal descent in mm (left) in asymptomatic (orange) and symptomatic women (purple) and receiver operator curve for rectal descent as a test for symptomatic prolapse (right). Lines define proposed cut-offs.

ROC characteristics were similar for both anterior and posterior compartment, although the relationship between descent and symptoms was stronger for the anterior compartment ($c=0.857$ vs. $c=0.821$).

There currently are no studies in the world literature that would allow us to define what degree of pelvic organ descent could be regarded as within the range of 'normal' and what is 'pathological', or significant. From this study it appears that pelvic organ descent is unlikely to be symptomatic if bladder or rectal ampulla remain above the inferior margin of the symphysis pubis.

A cut-off of 10mm below the symphysis pubis seems to be at the midpoint of the receiver operator curve for the anterior compartment, while a cut-off of 15mm below the symphysis pubis may be more appropriate for the posterior compartment. However, our study also clearly demonstrates that many women with larger cysto- or rectoceles were asymptomatic. The role of potential confounders, such as hormone therapy and pelvic floor resting tone and activation, will require further investigation.

As isolated uterine prolapse is rather uncommon, our study was not sufficiently powered to assess this condition. However, from own experience it seems that the uterus does not have to descend as far as the bladder or rectal ampulla to cause symptoms.

Conclusion

In a retrospective study we used prolapse quantification by translabial ultrasound and symptoms of prolapse to define cut-offs for the diagnosis 'significant prolapse'. Descent of the bladder to ≥ 10 mm below the symphysis pubis, and descent of the rectum to ≥ 15 mm below the symphysis pubis are strongly associated with symptoms and are proposed as definitions on the basis of receiver operator curve characteristics.

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Trauma and urinary incontinence

On searching the scientific literature, no cases of urinary incontinence have been reported after motor vehicle accidents and trauma. However, there is a single case report of a nulliparous woman experiencing complete uterine prolapse after a road traffic accident. A sudden increase in intraabdominal pressure from the position of the seat belt is postulated as a cause.¹

It is however, widely believed that women who participate in high impact activities, whether at work or play, will have more complications with prolapse and associated symptoms than their sedentary counterparts.

Urinary incontinence during high-impact activities – particularly sports – is common, with up to 25% of young physically fit women reporting some urinary incontinence while participating in their sport.²

However, when elite athletes are followed over time, the incidence of incontinence developing later in life is similar to that in age matched controls.³

Pelvic floor support defects and urinary incontinence in six nulliparous infantry trainees were attributed to airborne training for the military in the form of repeated parachute drops.⁴

By Dr Andrew Korda

Heavy lifting at work also appears to be related to prolapse and herniated lumbar disc disease.⁵ In this study, a 60% increased risk of operations for prolapse in these women over the general population was noted and it was felt this was secondary to their work related duties.

Although there does not appear to be an increased risk for the athlete for subsequent development of pelvic floor dysfunction, it does appear that heavy lifting at work may play a role in its development. In addition, extreme insults to the pelvic support (e.g. those that occur with repetitive parachute jumps) probably do have long-term sequelae.

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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
Basement, 135 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 the Obstetrics and Gynaecology Unit 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 specialty 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 Chairman of the Medical Board. 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. Married to a GP, he has three young sons.



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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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