

| Start | End | Topic | Speakers |
|-------|-----|--|-----------------|
| | | Recurrent UTI in Neurogenic Lower Urinary Tract Disorders | Anne P Cameron |
| | | Questions | All |
| | | Functional Outlet Obstruction in Women 1 - Primary Bladder Neck obstruction, Fowler's and Dysfunctional Voiding | Howard Goldman |
| | | Functional Outlet Obstruction in the Younger Adult 2 - Voiding Dysfunction associated with Pelvic floor Overactivity and Pelvic Pain Syndrome Using a Biopsychosocial Approach | Judith Thompson |
| | | Questions | All |
| | | Management of Intractable Urinary Incontinence in Women - Topics include investigations, indications for surgery and patient selection ; Surgical Options including bulking agents, native tissue repairs, artificial urinary sphincter, and urinary diversion | Vik Khullar |
| | | Questions | All |
| | | Evaluation and Management of the Long Term Covid Bladder | Vik Khullar |

Aims of Workshop

This workshop titled "HEARTSINKERS" explores the management of 3 complex, yet commonly seen conditions:

- (1) Recurrent UTI in neurogenic bladder patients
- (2) Functional outlet obstruction in Women (including pelvic floor overactivity and pelvic pain as causes)
- (3) Intractable female urinary incontinence (excluding fistula)
- (4) Covid and the bladder

With an international multidisciplinary faculty (urology, urogynaecology, physiotherapy), the diagnosis, utility of investigations, and treatment options of each will be discussed. Real cases will also be used. Delegates will gain a better understanding through the most updated evidence-based data delivered by an experienced faculty. Ample time is given for Q and A during the workshop.

Learning

Understand the most updated evidence in the management options of recurrent UTI in neurogenic bladder patients, including discussion on preventative strategies

Target Audience

Urology, Urogynaecology and Female & Functional Urology, Conservative Management

Advanced/Basic

Advanced

Suggested Learning before Workshop Attendance

1. Mueller E, Wolf A, Brubaker L. Female urinary microbiota. *Curr Opin Urol.* 2017 May;27(3):282-286. (Gives a good overview on this subject and how it relates to recurrent UTI, by experts in this field)
 2. Jia-Fong Jhang and Hann-Chorng Kuo. Recent advances in recurrent urinary tract infection from pathogenesis and biomarkers to prevention. *Tzu Chi Med J.* 2017 Jul-Sep; 29(3): 131–137 (Gives a good summary of the issues at hand, written by reputable authors)
 3. Nitti V. Primary Bladder Neck Obstruction in Men and Women. *Rev Urol.* 2005; 7(Suppl 8): S12–S17. (One of the best reviews of this topic good for prior background reading)
 4. De Groat W, Griffiths D, Yoshimura N. Neural Control of the Lower Urinary Tract. *Compr Physiol.* 2015 Jan; 5(1): 327–396. (A nice review of the neural control of storage and voiding, for those who desire more details in this area of physiology)
 5. Jalesh N Panicker, Mahreen Pakzad, Clare J Fowler. Fowler's syndrome: a primary disorder of urethral sphincter relaxation. *The Obstetrician and Gynaecologist.* Volume 20, Issue 2, April 2018, p 95-100
 6. Helen E. O'Connell, Hau Choong Aw, Weranja Ranasinghe et al. Overactive pelvic floor muscles (OPFM): improving diagnostic accuracy with clinical examination and functional studies. *Transl Androl Urol.* 2017 Jul; 6(Suppl 2): S64–S67. (This explores the diagnosis of this condition and review of conservative management options)
- Pontifex A, Savin C, Park C, Filipe Nunes A, Chalmers JK, Neumann PB, Ng L, Thompson J. How might we screen for psychological factors in individuals with pelvic pain? An e-Delphi study. *Physical Therapy* (in press)

Heartsinkers – Tips in Managing a Number of Complex but Common Clinical Conditions

Anne Cameron, Howard Goldman, Judith Thompson and Vik Khullar

Recurrent UTI in NLUTD

Anne P. Cameron MD

Recurrent UTIs in patients with NLUTD are notoriously difficult to treat and are unfortunately very common with those people with indwelling catheters having a mean of 10 annually (1). These have significant health consequences as well as impair quality of life.

The etiology of these recurrent UTIs can be a correctable disorder of the urinary tract such as calculi, poor bladder compliance or vesicoureteric reflux. However when investigations reveal no specific cause then it is helpful to understand the pathophysiology of these infections to best develop a treatment plan(2).

Initial treatment for recurrent UTIs in NLUTD patients include hydration, sensible catheterization and hygiene, avoidance of the treatment of asymptomatic bacteriuria. Most non antibiotic oral agents used in the non NLUTD population are not effective in the catheterized population, but select individuals will benefit from daily oral prophylaxis or bladder instillations.

1. Esclarín De Ruz a, García Leoni E, Herruzo Cabrera R. Epidemiology and risk factors for urinary tract infection in patients with spinal cord injury. J Urol [Internet]. 2000 Oct [cited 2014 Jul 2];164(4):1285–9. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/10992382>
2. Cox L, Cameron AP. Prevention of Urinary Tract Infection for Patients with Neurogenic Bladder. Curr Bladder Dysfunct Rep. 2014;9(4).

Functional Female Bladder Outlet Obstruction

Howard B Goldman MD

BOO in woman can be caused by anatomic or functional etiologies. Anatomic causes include prolapse, a diverticula, a stone or tumor of the urethra, a sling that is too tight, etc.

Functional BOO is typically from either primary bladder neck obstruction, Fowler's syndrome or dysfunctional voiding.

With PBNO there are high voiding pressures, slow flow and a closed bladder neck.

With Fowlers syndrome there may be some subtle EMG sphincteric abnormalities, low detrusor pressures and an open bladder neck.

With dysfunctional voiding, which is usually a learned behavior, there is loss of synergy between the pelvic floor/external sphincter and the detrusor. Dr Thompson will review this in detail.

I will demonstrate how to identify these entities and review standard treatment options.

Voiding Dysfunction associated with Pelvic floor Overactivity and Pelvic Pain Syndrome Using a Biopsychosocial Approach

Dr Judith Thompson

The definition of dysfunctional voiding (DV) is “an intermittent and/or fluctuating flow rate due to involuntary intermittent contractions of the periurethral striated or levator muscles during voiding in neurologically normal women.”¹ It is often associated with irritative bladder symptoms and urethral, bladder or pelvic pain syndromes¹.

Dysfunctional voiding may be a learned behavioral disturbance that occurs in response to urgency or pelvic discomfort. Several theories have been proposed; DV may develop as a result of an adverse event such as inflammation, infection, trauma, or irritation during childhood or early adult life, it may result from voluntary holding of urine for long periods of time, as well as an overactive guarding response, where the external sphincter is reacting to an involuntary detrusor contraction or sensory urgency and then the response is generalized to a voluntary void².

Difficulty relaxing the pelvic floor muscles has been observed in women and men with dysfunctional voiding 3,4,5. Patients with overactive pelvic floor muscles have a higher incidence of pelvic pain, higher post-void residual volume, higher maximal urethral closure pressure (MUCP) and a higher incidence of recurrent urinary tract infection⁶. Pelvic floor muscle training aimed at improving pelvic floor relaxation in women with DV, recurrent UTI's and pelvic pain has been shown to have significant improvement in clinical symptoms, and quality of life⁷. A persistent lack of pelvic muscle relaxation and/or heightened muscular activity may lead to involuntary muscle contraction, ischemic changes, and up-regulation of the nociceptive system. Dysregulation of sensory and pain processing in the periphery and central nervous system consequently leads to hyperalgesia and allodynia which are hallmark features of women who have overactive pelvic floor muscles ⁶. It is proposed that the central nervous system should be assessed and targeted as part of a comprehensive approach to these complex problems⁸. Subjects with urological chronic pelvic pain (UCPPS) often have more widespread pain symptoms with up to 75% reporting pain beyond the pelvis ⁹. The multidisciplinary approach to the study of chronic pelvic pain (MAPP) Network studies of structural and functional brain changes in UCPPS have also revealed similarities to other chronic pain syndromes and confirmed that the pain experienced by some patients is more complex than simply neuropathy localized to the pelvis ⁹.

The MAPP research network recommends a biopsychosocial approach to improve treatment outcomes in men and women with urological chronic pelvic pain (UCPPS) as subjects report higher levels of current and lifetime stress, poorer illness coping, increased self-report of cognitive deficits ¹⁰. Women with dysfunctional voiding have also been shown to experience a greater degree of depression and anxiety compared to asymptomatic controls¹¹.

In the case of complex “heartsink” cases, an individualised patient-centred approach to care is recommended ¹⁰. The Central Sensitivity Index¹² and the newly developed Pelvic Pain Psychological Screening Questionnaire (3PSQ) ¹³ will be used to present a biopsychosocial approach to the management of clients with dysfunctional voiding and persistent pelvic pain.

1. An International Urogynecological Association (IUGA)/International Continence Society (ICS) Joint Report on the Terminology for Female Pelvic Floor Dysfunction. Haylen B, Ridder D, Freeman R, et al. *Neurourol Urodyn*. 2010;29:4–20.
2. Bladder Outlet Obstruction in Women: Functional Causes. Ashley B. King & Howard B. Goldman. *Curr Urol Rep* (2014) 15:436
3. Dysfunctional voiding in women: which muscles are responsible? Deindl FM et al. *Br J Urol*. 1998;82:814–819.
4. Learned voiding dysfunction (non-neurogenic, neurogenic bladder) among adults. Groutz A et al. *Neurourol Urodyn*. 2001;20:259–268.
5. Videourodynamic analysis of the urethral sphincter overactivity and the poor relaxing pelvic floor muscles in women with voiding dysfunction. Peng CH et al. *Neurourology and Urodynamics*. 2017;36:2169–2175.
6. Overactive pelvic floor muscles (OPFM): improving diagnostic accuracy with clinical examination and functional studies. Aw HC et al. *Transl Androl Urol*. 2017;6(Suppl 2):S64-S67
7. Therapeutic efficacy of biofeedback pelvic floor muscle exercise in women with dysfunctional voiding. Chiang CH et al. *Scientific Reports* .2021; 11:13757
8. The Puzzle of Pelvic Pain- Part 1, Hilton S, Vandyken C., *Journal of Women's Health Physical Therapy* 2011; 35(3):103–113.
9. Characterisation of whole body pain in urological chronic pelvic pain syndrome at baseline: a MAPP research network study. Lai HH et al; MAPP Research Network. *J Urol*. 2017; Sep;198(3):622-631.
10. Widespread psychosocial difficulties in men and women with urologic chronic pelvic pain syndromes: case-control findings from the multidisciplinary approach to the study of chronic pelvic pain research network. Naliboff BD et al. *Urology* 2015; 85, 1319–1327.

11. Psychological Profile of Female Patients with Dysfunctional Voiding. Fan YH et al. Urology 2008;71: 625–629.
12. The Central Sensitization Inventory (CSI): Neblett R. et al: J Pain. 2013; 14(5): 438–445.
13. How might we screen for psychological factors in people with pelvic pain? An e-Delphi Study. Pontifex A, et al. Phys Ther. 2021; Apr 4;101(4).

Intractable Incontinence

Vik Khullar MD

Intractable incontinence is difficult problem to treat involving accurate and valid investigations such as urodynamics, urethral pressure profilometry and imaging in the case of fistulae. The results of the investigations then can guide the choice of the best treatment for the incontinence as well as enabling the patient to be counselled about the possible outcomes. the range of treatments can be physical therapy, medical, invasive surgical and non-surgical. These will be discussed in relation to real life cases.

Covid and the Bladder

Vik Khullar MD

Covid is known to cause inflammatory problems in the bladder including increases in cytokines and producing a painful bladder symptom complex but also the changes in the bladder lead to recurrent bladder infections which are difficult to treat especially with a patient suffering long Covid. The findings and treatments for these patients will be discussed to suggest the best management.