

## Urogynecology digest

Presented by J. Oliver Daly

### **Female stress urinary incontinence: how does obesity affect treatment outcomes?**

*Osborn DJ, Strain M, Gomelsky A, Rothschild J, Dmochowski R (2013) Obesity and female stress urinary incontinence. Urology 82:759–763*

A review of the epidemiology, pathophysiology, and treatment options for stress urinary incontinence was performed to present the impact of obesity on stress urinary incontinence and the effectiveness of treatments. The authors identified studies reporting a 20–70 % increase in the prevalence of SUI with every 5-unit increase in BMI and a significant increase in severity. In patients seeking bariatric surgery the prevalence of SUI, urgency UI and mixed UI was 60 %, 53 % and 42 % respectively. The role of obesity as a mechanism may be related to increased intra-abdominal and detrusor pressures of up to 12 cm H<sub>2</sub>O compared with non-obese patients. For every unit increase in BMI and 2-cm increase in abdominal circumference there was a reported 0.4 cmH<sub>2</sub>O increase in intra-abdominal pressure. Both surgically induced weight loss and an intervention programme have been shown to reduce detrusor pressures and bladder–urethra pressure transmission.

With regard to treatments, the Center for Disease Control and Prevention recommends calorie reduction and increased physical activity as first-line measures for SUI. This is supported by one RCT showing a 58 % vs 33 % reduction in SUI episodes with an 8 % weight loss compared with controls. The results are even more pronounced in those undergoing bariatric surgery with >50 % weight loss, resulting in improvements in all distress scores and an 18-kg weight loss curing urinary incontinence in 71 % of patients. However, the authors suggest that other conservative measures, such as pelvic floor muscle training, may not be as effective given that obese patients have more severe SUI and appear to have a reduced ability to contract their pelvic floor. Regarding surgical treatments, there is no conclusive evidence of a detrimental impact of obesity on the outcomes or complications of peri-urethral bulking and bladder neck suspension procedures. Level 1 evidence demonstrates equivalent SUI outcomes

following pubovaginal slings in obese and non-obese patients. The use of mid-urethral synthetic slings, resulted in slightly reduced success rates (81 vs 85 %), especially in patients with BMI >35 kg/m<sup>2</sup>. However, obesity may actually be protective against some complications such as voiding dysfunction with pubovaginal slings and bladder injury in mid-urethral slings with rates of 1.2 vs 6.6 % in the obese and non-obese groups respectively. This review demonstrates the importance of maximising weight loss, but provides reassurance that surgical outcomes are still favourable for obese patients.

### **Pelvic floor dysfunction: what's heredity got to do with it?**

*Andrada Hamer M, Persson J (2013) Familial predisposition to pelvic floor dysfunction: prolapse and incontinence surgery among family members and its relationship with age or parity in a Swedish population. Eur J Obstet Gynecol Reprod Biol 170:559–562*

Genetic factors appear to be a significant contributor to the prevalence of pelvic organ prolapse and stress urinary incontinence, particularly in younger women with a 30 % familial incidence. This population-based study combined data from Swedish national health-linked and multi-generational databases to investigate the relationship of heredity, age and parity to pelvic floor dysfunction requiring surgical treatment. The index proband underwent surgery for stress urinary incontinence (SUI) and pelvic organ prolapse (POP) between 1987 and 2002, from which mothers and sisters were identified and information on similar surgical procedures, age at intervention and final parity was obtained. The prevalence of procedures in the proband were compared against the expected number of women at risk in the general population and relative risks calculated with further analyses performed, adjusting for age and parity.

The proband consisted of women undergoing 85,000 procedures over the 15 years. The relative risk of surgery for either SUI or POP was 4.69 in the sisters of probands and lower for mothers at 2.18. For those women under 50, the relative risk increased at 5.69 and 2.43 respectively, with a weaker effect as

age at first surgery increased. In all but nulligravidas, increased parity also weakened the hereditary effect. These relationships were preserved for all pelvic floor compartments. The authors posit that the weakening effect of increasing age and parity indicate that these factors are independent of heredity. However, they suggest that there might be a degree of “social heredity” given that probands, mothers and sisters had a similar parity, which could be a confounder, and no doubt there are other such social familial traits. Another such confounder may be increased awareness of pelvic floor symptoms in such families and increased seeking of treatment. Given the relatively homogeneous Northern European population studied, these results may not be generalisable to all.

This study confirms the contribution of hereditary factors to the development of significant pelvic floor dysfunction, i.e. requiring surgical treatment. It may provide a basis for identifying higher risk families in whom genetic analyses could be performed for specific genes involved in pelvic floor dysfunction and enable targeted use of practices thought to reduce the risk of pelvic floor dysfunction.

#### **Recurrence following vaginal pelvic organ prolapse surgery: how important is primary vault support?**

*Eilber KS et al (2013) Outcomes of vaginal prolapse surgery among female Medicare beneficiaries: the role of apical support. Obstet Gynecol 122:981–987*

The importance of level 1 support in the treatment of pelvic organ prolapse (POP) has been well documented in the literature for over 20 years. This fact is not reflected in practice, with a significant proportion of prolapse procedures being performed without a concomitant vault support procedure. This retrospective cohort study analysed a random 5 % sample of United States Medicare recipients aged 65 years and over undergoing a POP operation in 1999. ICD-9-CM codes were used to identify patients undergoing anterior, posterior or combined vaginal procedures with or without an apical

support procedure. The subsequent 10 years of Medicare data were used to calculate the cumulative rates of women undergoing further POP procedures.

The cohort consisted of 21,245 women, of whom 15.3 % underwent POP procedures, 85 % of which were performed transvaginally. The mean age was 72 at the time of index surgery, with a mean follow-up of 9 years. Those undergoing isolated anterior repairs had significantly increased reoperation rates of 20.2 % vs 11.6 %, without and with concomitant apical support respectively. The subsequent POP surgery rate was also significantly increased, 14.7 % vs 10.2 % respectively, for combined anterior/posterior repairs. Overall reoperation rates among those who underwent posterior repair as a primary procedure were no different except for two subgroups; an increased rate of repeat posterior repairs, 4.5 % vs 0.4 % was observed in the no-concomitant apical procedure group and conversely, there was an increased rate of anterior with apical reoperations, 2.1 % vs 0 %, in those who did initially undergo a concomitant apical procedure alongside a posterior repair.

This study provides insight into the rate of recurrent prolapse in older women who are more likely to be Medicare recipients and provides further evidence of the importance of concomitant vault support procedures. Unsurprisingly, anterior recurrences were greatest in those not receiving primary apical support. Of interest, concomitant apical support with posterior compartment procedures appeared to significantly reduce the rate of repeat posterior procedures, but increase the rate of anterior with apical support procedures. This is understandable given the effect of sacrospinous fixation on the vaginal axis. The study is somewhat limited because it only analysed statistical data, providing no insight into the individual clinical details of the cohort. The results are also dependent on the accuracy and veracity of the procedural coding system as well as the assumptions made by the author during the analysis. This study demonstrates the importance of preoperative counselling and consenting of patients for concomitant vault support procedures, enabling surgeons to support all levels of POP during primary reconstructive procedures.

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