Surgical management of stress urinary incontinence

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Abstract

Women are seeking treatment for stress urinary incontinence more readily due to increasing awareness of minimally invasive surgical solutions and greater expectations of pelvic floor health with advancing age. Concerns have been raised regarding the safety of tape procedures and clinicians need to be aware of the recent guidance published on this by the MHRA. Surgery for stress urinary incontinence should only be undertaken in women following a comprehensive assessment and when conservative treatments have failed after a multidisciplinary team discussion. The current evidence favours a retro-pubic mid-urethral tape procedure using the bottom-up approach, or colposuspension. Pubo-vaginal slings using autologous rectus sheath fascia have a good success rate, but also have significantly higher incidence of operative morbidity and voiding problems. Urethral bulking agents are a safe alternative, especially in those women where more invasive surgery is not desired. It is important to counsel that they have a lower success rate and repeat injections are often needed.

Keywords incontinence procedure; stress urinary incontinence

Introduction

The International Continence Society defines stress urinary incontinence (SUI) as any involuntary leakage of urine on exertion or effort, or on sneezing or coughing. A recent postal survey of all women over the age of 21 years from a single UK GP practice reported that 40% of women suffered from urinary incontinence with 8.5% reporting that it caused significant problems. Stress urinary incontinence was the most common type. Obesity and parity are significant risk factors for SUI.

Many women suffer in silence in the belief that it is a condition of old age for which nothing can be done. As women are becoming more aware of the improvements in the treatment choices for urinary incontinence there is a rise in the number of women seeking treatment for SUI. However media reports and patient advocacy groups have raised concerns regarding the use of synthetic material to treat stress urinary incontinence leading to the suspension of synthetic mid-urethral tapes in Scotland in 2014. Hence gynaecologists need to be aware of all currently available conservative and surgical options for treating SUI and up to date guidelines to be able to counsel women appropriately and obtain informed consent for surgery.

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Initial assessment

The NICE guideline CG171 *Urinary Incontinence: The Management of Urinary Incontinence in Women*, published in 2013 recommends that a history is taken to categorise urinary incontinence into stress, mixed incontinence or urge incontinence and that treatment is started accordingly. Initial assessment should aim to identify relevant predisposing and precipitating factors and other diagnoses that may require referral for additional investigation and treatment (Box 1). Desire for future childbearing should be elicited as this may influence the choice of treatment. A bladder diary should form an integral part of preoperative assessment as it can give valuable information on fluid intake (type and amount) and frequency and volume of voids.

Management of stress urinary incontinence

Conservative management in terms of supervised pelvic floor muscle training by a trained pelvic floor physiotherapist should be offered prior to surgery. Other conservative measures in terms

Assessment of women with urinary incontinence

History

- Age
- Parity
- Severity of incontinence, pad usage
- Overactive bladder symptoms
- Voiding
- Fluid intake — type and amount
- Prolapse
- Bowel symptoms, constipation and faecal incontinence
- Sexual function, coital incontinence
- Previous surgery
- Medical health including current medications
- Neurological symptoms
- Future childbearing wishes
- Social history and lifestyle
- Concerns, expectations and wishes for treatment

Examination

- BMI
- Blood pressure
- Urinalysis
- Cardiovascular, respiratory status
- Abdominal masses, scars
- Vulval skin — excoriation, oedema, atrophy, lichen sclerosis
- Prolapse
- Pelvic floor muscle function
- Pelvic masses
- Neurological — tone, power, anal reflex

Box 1

of lifestyle modifications such as fluid management, weight loss and smoking cessation should also be emphasised. Treatments such as duloxetine and continence devices may be considered but are not recommended routinely as first line treatment (Figure 1).

Surgery for stress urinary incontinence

When conservative management has failed a discussion regarding surgery should take place. NICE guidelines recommend that urodynamics are not performed in the small group of women in whom a history of pure stress incontinence is elicited with normal assessment. However two professional bodies, British Society of Urogynaecology (BSUG) and British Association of Urological Surgeons (BAUS) recommend urodynamics for all women prior to surgery for SUI. A systematic review of women undergoing surgery for stress urinary incontinence or stress predominant incontinence reported that urodynamics did not improve outcome.

NICE recommends that women considering surgery are informed about the risks and benefits of surgery and non-surgical options and that surgery is only offered after a multi-disciplinary team review. The procedures that NICE recommends are retropubic mid-urethral sling, open colposuspension or an autologous rectus fascial sling. These procedures are discussed below. Women should be offered written information on all the options for surgery and given time to fully consider their choices.

Kelly plication anterior repair, Marshall–Marchetti–Krantz (MMK) and needle suspensions procedures are no longer recommended.

Mid-urethral tapes

Mid-urethral tapes are the most commonly performed procedure for stress urinary incontinence. Women have reported serious and debilitating problems following these procedures and the MHRA, at the request of the Chief Medical Officer of England, have published a summary on the benefits and risks of vaginal mesh implants. The MHRA reports that at 10 years following surgery significant long-term benefits are achieved in the majority of women and that the overall benefit outweighs the relatively low rate of complications. The three most common type of tapes performed are retropubic, transobturator and mini-slings. A tape manufactured from type 1 polypropylene is recommended.

Retropubic tapes

Bottom-up approach: the original tension free vaginal tape (Gynecare, TVT) procedure was described by Ulmsten in 1996. The tape measures 40 cm long by 11 mm wide. There are many other similar tapes on the market. The TVT has now virtually replaced the Burch colposuspension as the operation of choice for a primary procedure for SUI in view of being minimally invasive procedure with low intra and post-operative morbidity, quicker recovery and equivalent long term success rates.

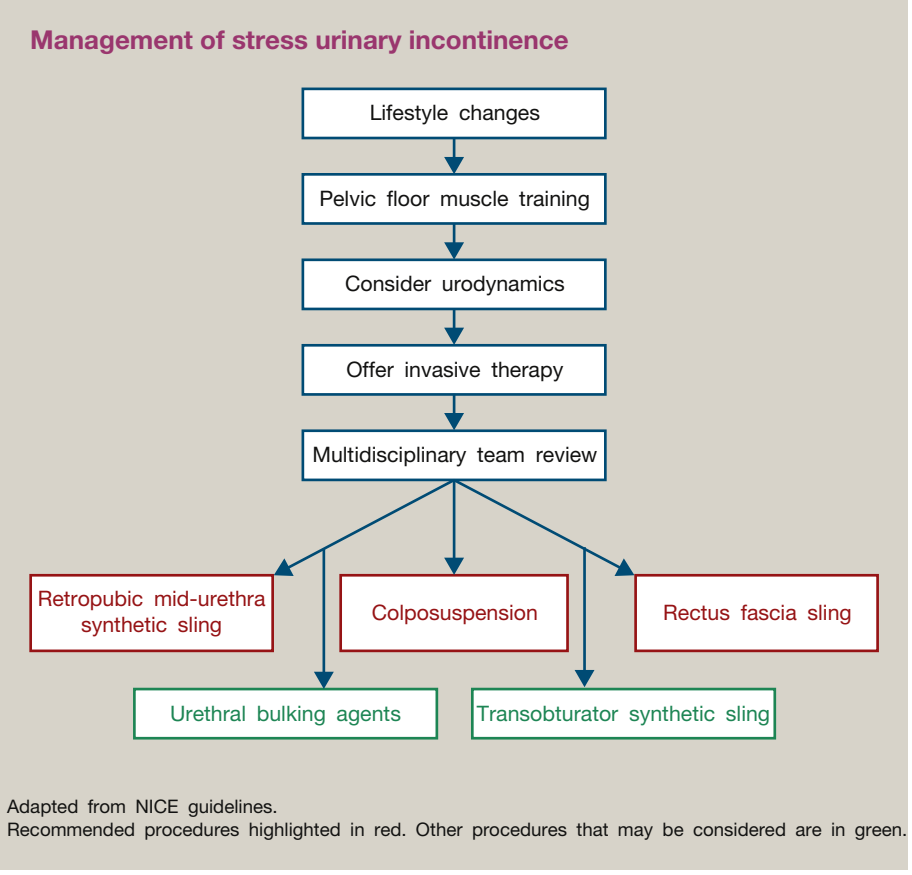

Figure 1 The management of stress incontinence.