



Review

New surgical approaches for urinary incontinence in women

Vladimir Revicky^{a,*}, Douglas G. Tincello^b^a Leicester General Hospital, Gwendolen Road, Leicester LE5 4PW, UK^b Department of Cancer Studies & Molecular Medicine, University of Leicester Royal Infirmary Leicester LE2 7LX, UK

ARTICLE INFO

Article history:

Received 15 December 2013

Accepted 22 December 2013

Keywords:

Urinary incontinence

Tension-free vaginal tape

TVT

ABSTRACT

Urinary incontinence (UI) is highly prevalent and common complaint. A large proportion of women with UI can be correctly diagnosed by their symptoms alone. First line of treatment should follow conservative route in a form of pelvic floor muscle training for stress UI and bladder training for the urgency UI. If conservative management is ineffective, medical and surgical treatment is the next considered. For the treatment of over-active bladder and urgency UI, intra-vesical injections of botulinum toxin A, utilising a flexible or rigid cystoscope has become an established treatment. An alternative to the use of onabotulinum toxin A is sacral nerve stimulation (SNS).

Vaginal tapes/slings procedures have become treatment of choice for stress UI. Different approaches of introduction of vaginal tape can be used, including retropubic 'bottom-up' (TVT), and transobturator 'inside-out' (TVT-O), or 'outside-in' (TOT). TVT and TVT-O/TOT seem comparable although there are differences in complications (bladder injury with TVT vs. leg pain with TVT-O/TOT). Recently single incision approaches have been introduced whereby the vaginal tape is inserted via a single vaginal incision. Based on current evidence, single incision slings are not recommended.

Individual clinicians should decide which to use based on expertise and experience, nevertheless, bladder injuries are probably less of an issue than leg pain.

© 2014 Elsevier Ireland Ltd. All rights reserved.

Contents

| | |
|---|-----|
| 1. Introduction..... | 239 |
| 2. Management..... | 240 |
| 3. Treatment..... | 240 |
| 3.1. Conservative management..... | 240 |
| 3.2. Medical management..... | 240 |
| 3.3. Surgical management of urge incontinence..... | 240 |
| 3.4. Surgical procedures for stress urinary incontinence..... | 240 |
| 4. Conclusion..... | 241 |
| 5. Further research..... | 241 |
| Contributors..... | 241 |
| Competing interest..... | 241 |
| Funding..... | 241 |
| Provenance and peer review..... | 241 |
| References..... | 241 |

1. Introduction

The International Continence Society defines urinary incontinence (UI) as the complaint of any involuntary leakage of urine

[1]. UI may occur as a result of a number of abnormalities of function of the lower urinary tract. Involuntary urine leakage on effort or exertion or on sneezing or coughing is defined as stress urinary incontinence (SUI) while involuntary urine leakage accompanied or immediately preceded by urgency, which is a sudden compelling desire to urinate that is difficult to defer is referred to as urge UI (UUI) [1]. Mixed UI is involuntary urine leakage associated with both urgency and exertion, effort, sneezing or coughing [1]. Some patients complain of urinary frequency, urgency and

* Corresponding author. Tel.: +44 116 258 6881.

E-mail addresses: vladimir.revicky@uhl-tr.nhs.uk, revicky@yahoo.com (V. Revicky).

nocturia without leaking. This is termed overactive bladder (OAB) and is often, but not always associated with underlying detrusor overactivity (DO). Urinary incontinence is highly prevalent and common complaint. Some reports estimated that UI may be affecting up to 25% of women [2]. Almost half of these women have SUI, 11% have urge UI and 36% have mixed UI [2]. UI can be very distressing and socially disruptive, women with UI, 60% avoid going away from home, 50% feel odd or different from others, 45% avoid public transport and 50% report avoiding sexual activity through fear of incontinence [3]. There are limited data regarding cost of treating UI, but, data from the Leicestershire MRC Incontinence Study estimated the annual cost to the NHS at £536 m [4].

2. Management

A large proportion of women with UI can be correctly diagnosed by their symptoms alone [5]. With addition of gynaecological examination, dip-stick test of urine and the use of a bladder diary, these women can be triaged straight away for conservative management of SUI or UUI.

Bladder diaries provide evidence of filling and voiding over a number of days and can provide information about urinary frequency, urgency and nocturia, bladder capacity and total urine output. They also record UI episodes and fluid intake.

Urodynamic testing has been done routinely for all patients before treatment, but in the last five years this practice has been increasingly questioned. Invasive urinary testing or urodynamic testing is a measurement of intra-vesical pressure using multichannel cystometry. This involves the measurement of both bladder and intra-abdominal pressures by catheters inserted into the bladder and the rectum or vagina. The aim is to replicate the woman's symptoms by filling the bladder and observing pressures changes or leakage caused by provocation tests. Recently published trials were trying to answer the question of the value of the urodynamic testing prior surgical intervention, however, it is still unclear if urodynamic testing affects the outcome of the treatment of UI [6–9].

3. Treatment

3.1. Conservative management

Pelvic floor muscle training is effective in reducing stress UI symptoms, with subjective cure rate from 16 to 56% [10]. A Cochrane systematic review demonstrated that women were about 17 times more likely to report cure than controls (RR 16.8, 95% CI 2.4–119.0) [10].

A further Cochrane review of published studies demonstrated the effectiveness of bladder training in reducing urgency or mixed UI symptoms (RR 17, 95% CI 1.13–256) [11,12].

Percutaneous posterior tibial nerve stimulation (PTNS) delivers neurostimulation to the S2–S4 roots of the sacral nerve plexus via the posterior tibial nerve, and can be offered as a treatment for UUI or OAB symptoms. Two randomised trials showed a clinical effectiveness of PTNS [13,14]. However, the evidence was not adequate to compare PTNS with medical therapy and further, PTNS was unlikely to be a cost-effective alternative to medical treatment [7].

3.2. Medical management

If conservative treatment is ineffective, medical and surgical treatments are considered. Antimuscarinic drugs are used to treat OAB. They block muscarinic receptors in the bladder, which reduces bladder muscle contractions and affects bladder sensation, reducing urinary urgency and the related symptoms of urgency incontinence, frequency and nocturia.

Available preparations include oxybutynin, tolterodine, trospium, propiverine and solifenacin. Recent recommendation on the use of these drugs has been published by the UK National Institute of Clinical Excellence [7].

3.3. Surgical management of urge incontinence

For the treatment of OAB and UUI (whether confirmed by urodynamic testing or not), intra-vesical injections of onabotulinum toxin A (onaBoNTA) utilising a flexible or rigid cystoscope have become an established second-line treatment in the last five years. There are several preparation of onaBoNTA available, although the vast majority of published research is with the preparation onabotulinum toxin A, marketed by Allergan as BOTOX®. Several randomised trials have been published, including three large studies. Tincello et al. recruited 240 women with proven detrusor overactivity [15]. 122 women received 200 U of onaBoNTA and 118 received placebo, and showed 2.5-fold decrease in urgency episodes and 4-fold decrease of leakage episodes at six months in comparison to placebo. There was a 3-fold increased risk of urinary infection and 4-fold increase in the incidence of voiding difficulties (16%) after treatment. Three more recent studies examined the efficacy of lower doses of onaBoNTA to treat OAB (i.e. without urodynamic confirmation [16–18]). Denys et al. [16] treated 99 patients to receive placebo, or 50, 100, or 150 U of BOTOX and followed them up for 6 months. At three months, 50% or more improvement in urgency and urge incontinence was seen in 65% and 55% of patients after 100 or 150 U. Continence was achieved in 55% and 50% at three months. Only three patients had high residual volumes, and there was a dose response in residual volume with 100 and 150 U. 50 U was not different from placebo in all outcomes. Nitti et al. [17] randomised 550 patients with OAB and at least three incontinence episodes per day to receive 100 U or placebo.

At 12 weeks, the active group showed significantly fewer incontinence episodes and 23% patients become continent. Urinary retention occurred in 5%. Chapple et al. [18] randomised 548 patients refractory to oral medication to receive 100 U or placebo and reported essentially identical data. onaBoNTA has recently been granted a licence for the treatment of OAB in most European countries and the USA.

An alternative to the use of onaBoNTA is a sacral nerve stimulation (SNS). The principle of neurostimulation is that electrical stimulation of the sacral reflex pathway will inhibit the reflex behaviour of the bladder and reduce detrusor overactivity. Sacral nerve root stimulators have been developed to provide chronic stimulation directly to the S3 nerve roots. SNS is an invasive two-stage procedure, with significant cost and a need to change the pulse generator every 7 years. With use of SNS, 52% of patients were dry at 18 months and a further 24% reported at least 50% reduction in leakage episodes [19].

3.4. Surgical procedures for stress urinary incontinence

There are many procedures described for the treatment of stress urinary incontinence. All continence procedures aim to provide a tension-free support to the mid-urethra or bladder-neck, to prevent downward displacement during coughing or straining. Mid-urethral tapes are inserted via a small sub-urethral vaginal incision and small incisions in the supra-pubic or groin area, depending on the type of tape used. The retropubic tension-free vaginal tape (TVT) was first introduced into clinical practice in 1996 by Ulmsten et al. [20]. Prior to this, the majority of continence procedures had been performed by an abdominal route, using the Burch colposuspension.

However, the effectiveness of retropubic mid-urethral tape procedures is similar to the effectiveness of open colposuspension [21].

Download English Version:

<https://daneshyari.com/en/article/10743461>

Download Persian Version:

<https://daneshyari.com/article/10743461>

[Daneshyari.com](https://daneshyari.com)