

Beyond the Abstract - Male stress urinary incontinence: The place of alternatives to an artificial urinary sphincter, by Philippe Grise, MD



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BERKELEY, CA (UroToday.com) - The number of patients suffering from postprostatectomy incontinence is increasing despite improvements in surgical techniques. Quality of life is strongly affected, even in minor or moderate leakage. Pathophysiology of male stress urinary incontinence is mainly a sphincter deficiency, but a deficit in urethral support and an excess of mobility of the bulbar and membranous urethra may also be involved. After a first line treatment with pelvic floor exercises, the persistence of incontinence requires the assessment of the absence of an associated overactive bladder or an anastomosis stricture.

For severe stress urinary incontinence (SUI) due to major sphincter deficiency, the artificial sphincter remains the gold standard technique with 80 % continence rate despite a high cost and a risk of erosion or infection. These factors and the need to press the pump for each micturition make many patients reluctant to have this type of surgery for moderate incontinence.

In order to minimize surgical morbidity and cost, for mild or moderate incontinence, minimally invasive options were proposed, i.e. sling procedures and balloon or bulking agents.

The results of urethral bulking agents on continence are disappointing. Adjustable balloon is a minimally-invasive procedure based on a mechanism of lateral compression of the proximal urethra. The rate of dry patients was only 30%, but patients with none and one pad a day were reported in 60 %. Moreover, the high rate of pre and post-surgery complications (more than 50% in series) and several inflations of the balloons were of concern.

Slings are the more commonly proposed treatment for mild and moderate male stress incontinence. The concept of minimally invasive surgery with perineal bolsters acting as a sling on the bulbar urethra was described more than 10 years ago. The initial success rate was excellent for continence with no significant outlet obstruction, but outcome was complicated with bolster removal due to pain, infection or erosion. However the efficacy was demonstrated with a 42% cure rate. Other slings were proposed but there was a concern regarding the

retropubic route due to a risk of a bladder puncture or erosion.

The concept of a large perineal sling made of silicone applied on the bulbar urethra and a bone anchor fixation was proposed with the InVance™ male sling. Many cases of infection of the silicone biomaterial and a 16% rate of patients suffering from perineal pain led to this sling being progressively abandoned despite good results with 65% of patients pad-free at two-year follow-up.

The transobturator route was first used for female incontinence, then applied to male patients and reported in 2006 by Grise. Two types of polypropylene transobturator male slings are proposed, depending of the location on the urethra: bulbar or membranous site. The AdVance™ male sling system is located proximally on the membranous urethra in order to modify the mobility and to act as a hammock-like support of the posterior sphincter complex, and a tension is applied on the sling. A proximal dissection close to the sphincter is a potential risk for increasing the patient's deficiency; moreover the membranous urethra is thin and fragile which exposes it to urethral erosion. The sling is made of a large central part and 1 arm on each side.

The TOMS male sling (Figure 1) is located more distally, on the bulbar and post-bulbar urethra, which is covered with the bulbospongiosum muscle. The sling is made of a large central part with 2 arms on each side. The transobturator puncture was preferentially an outside-inside with Hemet needle but an inside-outside puncture may be performed with a helical needle.

Clinical results of four arms male sling TOMS

A prospective multicenter study was conducted on 96 male patients suffering from mild or moderate post prostatectomy incontinence and after a failure of physiotherapy and minimally one year post-surgery; radiated patients were excluded. The study received Ethical Committee approval.

Pre- and post-surgery assessments included previous medical history, physical examination, clinical study questionnaire for urological symptoms and number of pads per day, and urodynamics (uroflowmetry, post void residual urine). The patients completed the ICIQ-SF and the SF36 questionnaires, and a visual analog pain scale (VAS) before and after surgery. The number of patients studied at follow-up visits was at 1, 3 and 6 months respectively 93, 80, 54. The surgeon considered the surgery easy to perform in all the cases. The median operative time for the procedure was 30 minutes (25 - 45). No pre-surgery complication was reported, no significant intra-operative bleeding (>200ml) occurred or nerve, bowel or vascular injury.

On the VAS, the median pain value the day after surgery was 2, then decreased significantly to 1.2 at one month and remained at 0.4 for all further visits. After urethral catheter removal, residual volume was less than 50 ml for all the patients. Maximal flow rate median value was 23 ml/sec before surgery and 17.5 at 1 month then 19 at 3 and 6 months, the change was significant between pre-surgery and 1 month post-surgery but not at 3 and 6 month follow-up period. Overall median pad use decreased significantly from 2 pads per day (2 - 3) before surgery and at one month to 1 pad for all the visits thereafter. At 1, 3, and 6 months, the number of pad-free patients was respectively 60%, 51%, 51%. The continence rate, using 0 to 1 pad per

day, was respectively 74%, 82%, and 83%.

The SF36 score of continence, measured on a scale ranging from 0 to 500, improved highly significantly ($p < 0.001$) from a median score of 117 before the TOMS sling to 350 at 1 month, 338 at 3 months, and 308 at 6 months follow-up. The ICIQ incontinence median score decreased highly significantly ($p < 0.001$) from 14 before the TOMS sling to 5 at 1 and 3 months, and to 6 at 6 months follow-up.

In male stress urinary incontinence, there is a place for alternatives to an artificial urinary sphincter in mild or moderate incontinence. The artificial sphincter remains the gold standard for severe stress urinary incontinence, and male sling may be now proposed in mild or moderate incontinence in non-radiated patients. More than 50% of patients were completely continent and more than 70% of the patients were improved in their continence and their quality of life. TOMS bulbar sling is a safe procedure.



Figure 1. The sling is inserted by a perineal incision. The central part is on the bulbar urethra, and laterally the two arms are on each side.

References:

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I had the artificial urinary sphincter implant, and it works great! I had severe urinary incontinence from radiation treatment.