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MALE STRESS URINARY INCONTINENCE AFTER RADICAL PROSTATECTOMY: ONE PROBLEM, THREE SOLUTIONS

Hypothesis / aims of study

Male stress urinary incontinence (SUI) is a potential complication of radical prostatectomy (RP). Artificial urinary sphincter (AUS) remains the gold standard in the management of severe incontinence (1). Nevertheless, other minimally invasive approaches have been described. The use of male sling has been advocated in patients with mild degrees of stress incontinence.

At present, three treatment options are available: artificial urinary sphincter(1), compression devices(2) and anatomy realignment by sling(3). Despite the rapid introduction of novel techniques, randomized trials are lacking due to the low incidence, the overlapping among these techniques and the lack of consensus regarding clear individual indications.

The **aim of our study** was to compare the effectiveness of three types of surgery, performed by the same surgeon, according to a clear indication and prospectively evaluated.

Study design, materials and methods

All consecutive patients with incontinence beyond one year from RP were considered for the study. Informed consent form was obtained.

Continence was evaluated with a 24-Hour Pad test (24h-PT) (two measurements) and the Spanish validated version of the International Consultation on Incontinence Questionnaire-Short Form (ICIQ-UI SF). Pre-operative conventional urodynamic study assessment and cystoscopy was performed in all cases.

TYPES OF SURGERY:

Compressive sling: InVance ®, perineal bone-anchored male sling (American Medical Systems, Minnetonka, MN, USA). Three titanium screws loaded with polypropylene suture were placed in each descending pubic ramus. Polypropylene mesh was placed over the bulbospongiosus urethra and tied to the bone anchors.

Realignment sling: Advance®/AdVance XP® (American Medical Systems, Minnetonka, MN, USA). Briefly, the fibrous portion of the central tendon was incised. A helical rounded tip needle was introduced along the lateral edge of the pubic ramus. The edge of the proximal flap of the sling should be located at the origin of the central tendon previously marked. By compensating for the post-prostatectomy laxity of the posterior supporting structures, the AdVance/AdVanceXP® sling essentially realigns the anatomy of the urethral sphincter complex towards the normal, pre-prostatectomy configuration.

Artificial urinary sphincter: AMS-800 ® (American Medical Systems, Minnetonka, MN, USA). Surgical technique consisted of a perineal incision for cuff placement around the bulbous urethra (preserving the bulbospongiosus muscle) and a transverse abdominal incision for pressure regulating balloon (61 to 70 cm H₂O pressure).

INDICATIONS: Except in isolated cases, patients with a 24h-PT>400g were considered for AUS, while a 24h-PT<400g 24h was an indication for sling. Patients without sphincter contraction in the "repositioning test" (sphincter closes autonomous and concentric during mid perineal elevation) or previous radiotherapy were excluded for AdVance/AdVance XP®. We indicate InVance® when 24h-PT <200g.

Follow-up was carried out 3-monthly for the first year and 6-monthly thereafter. Cure was defined as no pad use. Improvement was defined as a 24-Hour PT reduction ≥50%. Below this point were defined as failures.

Results

From December 2003 to March 2013, 177 consecutive patients with a median age 66 years (range=48-80), were included. The minimum follow-up was one year (median 41.76 months, range 12-120).

Preoperative status:			
	Median 24h-PT (grams)	Anastomotic stricture treated	Salvage Radiotherapy treated
InVance®	47 (9-540)	6 (16.6%)	5 (13.8%)
AdVance®	63 (11-837)	7 (11.4%)	2 (3.2%)
AMS-800®	78 (100-2509)	28 (35.0%)	17 (21.25%)

Continence results:					
	First Implant	n	Cured	Improved	Failure
inVance ®	21-2-2006	36	77.7%	13.8%	8.3%
AdVance®	18-2-2008	61	78.6%	11.4%	9.8%
AMS-800®	26-04-2004	80	71.2%	20.0%	8.7%

Forty one patients lost their continence during follow-up: 12 (33.3%) patients with InVance ® (urge urinary incontinence, mobilization of the screws, radiotherapy-induced cystitis), 4 (6.6%) with Advance ® (urge urinary incontinence, inadequate compression) and 25(26.3%) with AMS-800 ® (mechanical failure, urethral atrophy).

Interpretation of results

Stress urinary incontinence after RP is a multi-factorial problem. At present, several effective surgical options are available but, they have different mechanism of action and it is very important to make a correct indication. Although, this is not a randomized trial, prospectively collected data shows that, with the correct indication, the results obtained with the different techniques are similar.

Concluding message

In our experience, 24h-PT test is useful to indicate a type of treatment, but must also take into account other factors such as previous radiotherapy or sphincter contraction in the "repositioning test".

References

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Disclosures

Funding: NONE **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** It is a prospective study of three surgical treatments of urinary incontinence after radical prostatectomy. This is not a randomized study. We used three techniques described and accepted in the literature, with an indication for these cases. We compare the results and follow-up prospectively with standard clinical criteria **Helsinki:** Yes **Informed Consent:** Yes