

CONTINENCE AND COMPLICATIONS RATES AFTER MALE SLINGS AS PRIMARY SURGERY FOR POST-PROSTATECTOMY INCONTINENCE: A SYSTEMATIC REVIEW

Hypothesis / aims of study

Radical prostatectomy (RP) is the most common treatment option for prostate cancer. Urinary incontinence (UI) is a common and costly complication in men after RP, often adversely affecting their quality of life. Despite improvements in surgical techniques and a better understanding of pelvic anatomy, the reported stress urinary incontinence (SUI) rates are between 5% and 48%. Conservative treatment of the urinary leakage represents the first line management of UI after RP, but the value of the various conservative approaches to treat postprostatectomy UI after RP remains uncertain. When conservative treatments are unsuccessful after a reasonable period of time, invasive therapies should be considered. According to the last International Consultation on Incontinence Recommendations, for SUI due to sphincter incompetence the recommended option is the artificial urinary sphincter (AUS) (Grade B); other options, such as a male sling, may be considered (Grade C). These low grades of recommendation can be explained by the fact that, although there are several options for surgical treatment of UI after prostatectomy, surprisingly only one randomised clinical trial was identified in the literature, comparing AUS implantation and injectable treatment with Macroplastique. For other surgical procedures such as male slings, Pro-ACT system, other bulking agents and stem-cell therapy, only non-randomised studies were identified, making impossible to answer questions about treatment comparison in terms of efficacy, safety, complications and long term results. The aim of this review was to analyze continence and complications rates after male slings as first line surgical treatment, in order to improve patient counseling for the management of SUI postprostatectomy.

Study design, materials and methods

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) checklist was used to help guide this report [8]. We conducted a PubMed database search through January 2012 for relevant prospective cohort studies and case series that met the following inclusion criteria: English language; adults with SUI postprostatectomy who underwent male slings as first surgical option for continence recovery; studies carried out on ≥ 20 patients with a mean follow-up of ≥1 year; because the majority of papers dealing with outcome and complications came from a few centres, only the most recent publication(s) from each centre were included to avoid the same patients being presented several times. Multiple free-text searches were performed. In addition, other significant studies cited in the reference lists of the selected papers were considered. Few studies presented their original data in a format amenable to meta-analysis. A single weight-adjusted mean or proportion for each variable or outcome was computed for each of the nonrandomized studies. To derive pooled estimates of proportions for the outcomes explored, random effects models were used. Pooling was conducted using Comprehensive Meta Analysis Version 2.2.046 (Englewood, NJ). Given that this review assessed measures of prevalence, publication bias was not evaluated.

Results

From screening 160 records, 49 full-text articles were retrieved with only 5 articles included in the systematic review (figure 1). The 5 included articles involved 356 participants living in 8 countries with a median follow-up after sling implant of 15 months (interquartile range, 12-21) and sling surgeries conducted between 2002 and 2009. Patients' mean age at time of surgery was 68.06 (standard deviation, 1.37) years. Study characteristics and quality are summarized in Table 1. No controlled trial was available for analysis. The majority of papers dealing with outcome and complications came from a few centres.

Figure 1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) flow diagram.

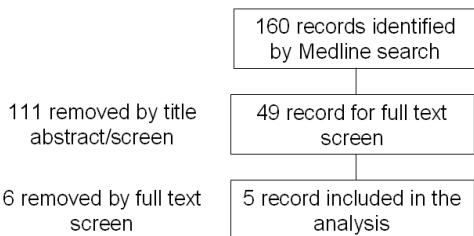
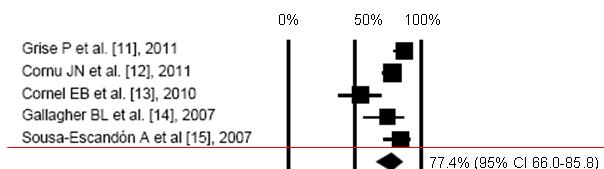


Table 1. Characteristics of included observational studies

Source	publication year	Journal	Nation	Patient number	Time period of surgery	RP rate (%)	Patient mean age (years)	sling type	mean follow-up (months)	risk of bias
Grise P et al. [11], 2011	2011	Urology	France	103	2007-2009	94.8	69.4	I-STOP TOMS	12	high
Cornu JN et al. [12], 2011	2011	BJU Int	France	136	2007-2009	92	67.4	AdVance	21	high
Cornel EB et al. [13], 2010	2010	J Urol	The Netherlands	35	2007-2008	80	68.5	AdVance	12	high
Gallagher BL et al. [14], 2007	2007	Urology	USA	31	2002-2005	94	66	InVAncE	15	high
Sousa-Escandón A et al [15], 2007	2007	Eur Urol	Spain, Italy, Greece, Germany, Portugal	51	2002-2005	84.3	69	Remeex	32	high

At a median follow-up of 15 months the pooled cure rates for all kinds of slings was 77.4% (95% CI 66.0-85.8); in the AdVance group the pooled cure rates was 72.5 (95% CI 65.0-68.8); in the InVAncE group it was 74.2% (95% CI 56.3-86.5) while in the Remeex group it was 84.3% (95% CI 71.6-92). Figure 2 pooled the continence rates achieved after the analysed sling procedures.

Figure 2. Pooled analysis of reported overall cure rates.



Interpretation of results

The male slings approved for use currently include a variety of types: bone anchored slings, adjustable slings, and transobturator slings. This review tried to systematically assessed the outcomes of male slings used as the first line treatment, after conservative therapy failure, for the treatment of post-prostatectomy SUI. Only a few number of the observational studies published in the literature addressed review selection criteria. The pooled overall cure rates is high but there are no data concerning reliable pre- and postoperative prognostic factors affecting treatment failure and complications rates, thus it is not possible to have suitable criteria for a better patient selection. The statistically pooled results obtained should be interpreted with caution because of several limitations due to several study selection limitations: observational study design, few number of analysed studies, heterogeneity, lack of outcome definition and standardisation, between-study variability, high risk of bias.

Concluding message

In order to better select patients for male slings in the management of post-prostatectomy SUI as first line treatment, it is mandatory to carried out both well designed randomized clinical trials and longitudinal cohort studies, using standardised protocols and outcome measures.

Disclosures

Funding: no source of funding nor grant **Clinical Trial:** No **Subjects:** HUMAN **Ethics not Req'd:** It is a systematic literature review **Helsinki:** Yes **Informed Consent:** No