598

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OUTCOMES OF SURGICAL REVISION OF SYNTHETIC SLINGS FOR POSTOPERATIVE PAIN AND/OR SLING EXTRUSION.

Hypothesis / aims of study

Synthetic slings (SS) are now the most common treatment for female stress urinary incontinence (SUI). Surgical revision of the SS may be necessary to treat postoperative pain and/or extrusion of the SS material. The aim of this study was to identify the types of SS implicated in this complication and evaluate the subsequent functional outcomes such as recurrent SUI following revision surgery.

Study design, materials and methods

We conducted a retrospective review of all women who underwent revision of a SS at our unit between 2000 and 2010 inclusive, for the indication of pain and/or extrusion of the sling material. The extent of surgical revision was at the surgeon's discretion, but in all cases consisted of at least partial excision of SS material.

Results

Forty five women underwent revision for pain/sling extrusion during the study period. Twenty seven (60%) of these women had their initial SS placed at another institution. The mean interval between SS insertion and its surgical revision was 28.2 months ranging from 2 weeks to 17 years.

Surgical revision, in all cases, consisted of at least partial excision of the sling material. Twenty three women had their SS partly excised and 22 had a complete removal of the SS material.

Table 1 shows each SS which required revision, categorised by sling type and whether infection was detected at removal. Eleven slings were classified as infected on removal, 10 of these, were multifilament slings.

Thirty nine women (39/45) had their SS revised for detectable extrusion of the sling material. One patient from this cohort, with an infected InFast® sling, required multiple further operations to remove remnants of SS material.

Six women (6/45) had their SS revised for the indication of pain, without any detectable extrusion. Three of these slings were found to be infected on removal, IVS® (2) and Lynx® (1). The other three were transobturator slings; Monarc® (2) and TVT-O® (1). Subsequent to revision, pain resolved in all patients.

Of the 45 women, 9/45 (20%), underwent a concomitant procedure to prevent recurrent SUI at the time of their revision procedure. Thirty six (80%) had no concomitant procedure at the time of SS revision. None of the concomitant group, but 11(36%) of the non concomitant group, subsequently required further surgery for recurrent SUI (0% [0/9] vs. 31% [11/36]; p = 0.056).

Table 1 SS types revised for pain/extrusion.

TABLE 1

SS Type	**Number (%)**	**Infection Present No. (%)**
Advantage	2 (4%)	-
InFast	2 (4%)	2 (18%)
IVS	16 (36%)	8 (73%)
Lynx	1 (2%)	1 (9%)
Monarc	7 (16%)	-
Prolene	1 (2%)	-
SPARC	2 (4%)	-
TVT	9 (20%)	-
TVT-O	5 (11%)	-
TOTAL	**45 (100%)**	**11 (24%)**

Advantage ® (Boston Scientific, Natick, MA, USA)
Lynx ® (Boston Scientific, Natick, MA, USA)
Monarc ® (American Medical Systems, Minnetonka, MN USA)
InFast ® (American Medical Systems, Minnetonka, MN, USA)
Prolene ® (Ethicon, Somerville, NJ, USA)
Sparc ® (American Medical Systems, Minnetonka, MN, USA)

TVT-O ® (Gynecare, Somerville, NJ, USA)
IVS ® (Tyco Healthcare, Mansfield, MA, USA)
TVT ® (Gynecare, Somerville, NJ, USA)

Interpretation of results

In our study we found certain SS types such as, multifilament slings, to be more strongly associated with infection. In only one case was a monofilament polypropylene sling found to be associated with infection. Our results demonstrate that extrusion of the SS can occur many years distant from the initial placement. In this study, 6 patients had revision of their SS for the indication of pain/extrusion in excess of 5 years post placement. Four of these cases were for obvious extrusion and the other two for infection. This highlights the need for vigilance with regard to long term complications. Thirty one per cent of patients who had revision of their SS without a concomitant procedure to prevent recurrent SUI went on to require further continence surgery.

Concluding message

SS procedures for SUI may result in complications many years distant from the initial placement. If SS revision comprises excision of sling material, then a concomitant procedure to prevent recurrent SUI should be considered, provided infection is not suspected. Synthetic slings of a multifilament type are more strongly associated with infection and are not recommended.

Specify source of funding or grant	**No outside funding was received for the production of this manuscript.** **Prof. Peter Dwyer, Anna Rosamilia and Joseph Lee are investigators of an ongoing randomised controlled trial of a midurethral sling, for which they have received a research grant from American Medical Systems.**
Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**Mercy Health Research Ethics Committee**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**