

7. Partially absorbable tension-free sling (T-Sling/Uromesh 2) in non-invasive treatment of mild and severe anterior wall prolapse with stress urinary incontinence. Medium term follow up

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Introduction

Tension-free vaginal tape and pubovaginal slings allow either the use of median-urethral tension-free vaginal tape mechanism -to cover the continence control zone- in the proximal and mid urethra [9], or a bladder neck suspension, but current procedures concerning slings in the treatment of anterior vaginal wall prolapse and urethral hypermobility seem to should have both effects on the bladder neck and the urethra [9]. The interposition of a sub-vesical transversal synthetic tension-free sling by the vaginal route seems to be an excellent procedure in the definitive surgical treatment of mild and severe anterior vaginal wall prolapse [4,5,6,7,8,13], but long term tolerance of synthetic meshes are still in discovering. Shrinkage of the mesh causing bladder outlet obstruction with de novo instability symptoms, erosion with extrusion are the most common complications in the long term follow up. Effectiveness and tolerance of a new partially absorbable tension-free sling (T-Sling) deliverable by pubovaginal (PV) or by transobturator (TO) access in the vaginal treatment of cystocele associated with type II stress urinary incontinence was assessed in a 3-year retrospective study.

Methods and materials

The diagnosis, methods, definitions and units are conformed to the standards proposed by the International Continence Society [1]. The original Herniamesh T-Sling TS05 is a mesh composed of two different materials. The two lateral aspects of the mesh are composed of a 1.1 cm-wide monofilament non-absorbable Polypropylene (PP) mesh with a 1-cm center absorbable monofilament of Polydioxanone (PDO). The modified Uromesh 2 sling is dorsally shaped in its center to fit all the surgical space from the proximal urethra, the

bladder neck and the posterior portion of the bladder. All patients have been treated under spinal anesthesia and received prophylactic subcutaneous heparin and intravenous antibiotics on call to the operating room. 22 patients with grade II and III anterior wall prolapse according to Baden Walker classification, had been treated by vaginal route with anterior cystocele repair and interposition of the Uromesh 2 half reabsorbable tension-free sling positioned in 18 patients underneath the proximal urethra and the bladder neck through TO Delorme approach [11,33] or through Stamey modified PV approach [15] in 4 patients. In 18 (81.8%) of them preoperatively an anterior prolapse with stress urinary incontinence secondary to urethral hypermobility was confirmed in grade II – 7 (31.8%) patients and grade II b – 11 (50%) in patients based on physical examination and urodynamics, being Q-tip test larger than 40 degree, and Mc Guire test positive at 400 ml 4 (18.1%) patients without preoperative stress urinary incontinence had grade III median prolapse of the anterior bladder wall symptomatic for low urinary tract syndrome. To assess the correct sling tension a provoked Valsalva cough test at bladder capacity of 300 ml, has been performed determining the “minimal” assessment of tension to maintain continence avoiding bladder outlet obstruction. Cure was defined as subjective patient’s satisfaction with negative objective evaluation, failure as subjective patient’s unsatisfaction and poor objective results. Improvement was defined as not having achieved the results of cure [11].

Results

Cure was reached in 21 (95.5%) of the patients, improvement was found in one patient (4.5%). Maximal flow rate was preoperatively 22 ml/sec (\pm 8ml/sec) postoperatively was 12 ml/sec (\pm 2 ml/sec) ($p < 0.05$). Average hospital stay was 4 days. Harmful complications have been divided into perioperative, early and late postoperative. There were no major complications after both types of procedure. One patient overcorrected complained, complete urinary retention was treated conservatively with suprapubic catheter and resumed after 60 days, when the central, absorbable part of the sling placed under the urethra dissolved. Cutaneous mild infection occurred in 3 patients (13.6%) easily managed by parenteral wide spectrum antibiotics for one week. No patients complained from pain the seven day postoperative visit. No recurrence of cystocele or urinary stress incontinence was observed in up-to-date follow up ranging from 6 to 45 months, mean 29.2 months. There was no urethral erosion, de novo detrusor instability or late obstructive voiding symptoms. NMR imaging after 90 days from operation showed no fibrosis and introital ultrasound showed the lateral Polypropylene wings of the sling detached from themselves with no synthetic material underneath the proximal urethra.

Discussion

In these series vaginal implantation of the new PP, partially absorbable Uromesh 2 has been shown to be an effective procedure alternative to open surgery procedures in treatment of the cystocele associated with urethral hypermobility. Concomitant subjective or objective stress urinary incontinence has been successfully treated with similar rate described with retropubic conventional approaches [10,14]. T-Sling/Uromesh 2 procedure when delivered via transobturator approach showed no major perioperative complications. Early postoperative complications were limited to one case of pubovaginal sling complaining transient urinary retention treated conservatively. Late postoperative complications showed no incidence either of de novo detrusor instability or anatomical defects described when Burch colposuspension was performed [10]. We believe that the central PDO absorbable portion allowed to avoid urinary obstruction preventing from the onset of de novo detrusor instability symptoms, as well as mesh erosion. Lateral nonabsorbable PP parts prevented from any recurrence of anatomical defect and stress urinary incontinence.

Long-term follow-up is important because of a time-dependent decline in cure rate [2,12]. In this 3-year follow up no recurrence of prolapse or urinary incontinence has been shown as well as no incidence of de novo detrusor instability or erosion while 30% of patients treated by Burch retropubic colpourethropy relapse with recurrent stress urinary incontinence [3,5]. T-Sling either implanted pubovaginally or by transobturator access has been showed easily reproducible, minimally invasive resulting in a short hospital stay and technically simple, efficient with low morbidity either at short term results or at medium follow-up.

Conclusions

Partially absorbable tension-free sling (T-Sling/Uromesh 2) implantation is an effective and non-invasive treatment of mild and severe anterior wall prolapse with stress urinary incontinence.

References

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