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TAPE LOOSENING OR EXCISION FOLLOWING MID-URETHRAL TAPE SURGERY FOR THE TREATMENT OF STRESS URINARY INCONTINENCE: A CASE SERIES

Hypothesis / aims of study
Stress urinary incontinence (SUI) is a debilitating condition, with the ability to seriously affect the quality of life of those affected. When conservative management fails, mid-urethral sling surgery is an effective treatment method for the management of SUI, with success rates of over 80%. However, there remains a small minority who require further surgery due to tape complications, such as borderline voiding dysfunction or tape exposure. The literature is limited in the optimal treatment of these patients. The aim of this study was to document a case series of all patients in our tertiary referral centre, who required tape revision surgery.

Study design, materials and methods
We performed a retrospective cohort study of the incidence, risk factors, urodynamic evaluation and medical course of all patients who required tape loosening or excision surgery after the placement of a mid-urethral tape for the treatment of SUI in the periods 2006 to 2016. We present the results of a case series of 30 women who underwent tape revision surgery.

Results
Of the 30 patients analyzed, 28 had retropubic mid-urethral tape (TVT) procedure, while two patients had a transobtruator tape (TOT) procedure. Mean age was 61 years. 77.2% had a BMI> 25. 86.4% had tried pelvic floor muscle training prior to initial surgical management. 46.6% of patients had other chronic pain syndromes including fibromyalgia, migraine, Irritable Bowel Syndrome and osteoarthritis. 53.5% presented with mixed urinary incontinence. Urodynamic assessment confirmed urodynamic stress incontinence (USI) in all but one patient, for whom sensory urgency was the main diagnosis. In addition to USI, 33.3% of patients had detrusor overactivity on urodynamics, and 13.3% had intrinsic sphincter deficiency.
Following the primary surgery, 17 patients had borderline voiding dysfunction (BVD) requiring tape loosening, and 13 had tape erosion, requiring tape excision surgery. The mean time from the primary surgery to tape loosening for those patients with BVD was 4 weeks: average, STD = 4.1, +/- 5.5 weeks. For tape erosion, mean time for tape excision was 3 and half years: average, STD = 41.5 months, +/- 37.6 months.
3 months after tape loosening for BVD, 88.2% of patients experienced symptom improvement with normal voiding. 100% of patients were dry, with no recurrence of SUI post tape loosening. 2 patients had ongoing voiding difficulty post tape loosening. One required suprapubic catheter insertion and the other resolved after 3 months of intermittent self-catheterization (ISC). 3 women reported unresolved pelvic floor/ buttock pain.
Following tape excision for tape exposure, all patients had an uncomplicated post op recovery. 3 months post op, one patient reported SUI, for which she required urethral bulking agents and another required ISC for concomitant urinary retention.

Interpretation of results
Compared to the general population not requiring surgery for tape complications, these patients presenting with BVD had a higher BMI and a higher incidence of concomitant pain conditions prior to surgical management of SUI. There were significantly more patients with detrusor overactivity in this group than in the general population. BVD presents early post operatively, while tape exposure is typically a delayed presentation.
Tape loosening produced resolution of BVD symptoms without recurrence of SUI. Tape excision allows return to daily functioning and improved quality of life. SUI, though present in one patient, is not significant following revision surgery for either BVD or tape exposure.

Concluding message
Our case series suggests that mixed urinary incontinence, with a urodynamic finding of detrusor overactivity represents a significant risk factor for borderline voiding dysfunction. Improved patient selection and counseling of the risks is important in this group. Tape loosening may offer a safe and effective option for management of borderline voiding dysfunction following mid-urethral tape insertion for SUI. Excision of the vaginal portion of the mid-urethral tape is a feasible option for patients with tape exposure and offers significant improvement in quality of life, while not predisposing to recurrence of SUI.

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