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TENSION-FREE VAGINAL TAPE - WHAT IF IT'S TOO TIGHT?

AIMS OF STUDY: Tensioning is crucial to the success of the Tension-free Vaginal tape (TVT) procedure for the treatment of genuine stress incontinence (GSI): too loose and the GSI persists; too tight and voiding difficulty can ensue. There is no current recommended treatment for the latter, albeit infrequent complication. This study aims (a) to determine a management protocol for severe voiding difficulty (residual urine volumes [residuals] over 200mls) persisting one week following a TVT and (b) at what time interval following the performance of a TVT, the tape can be removed and replaced for reason of severe voiding difficulty or any other reason.

METHODS: A series of 105 TVT's were performed in women with urodynamically proven GSI. The recommended criteria for successful 'trial of voiding' post-operatively and discharge from hospital involved the ability of the patient to achieve 2 residuals under 100mls for voids over 200mls. Four patients (3.8%) were unsuccessful (patient numbers 8, 55, 84 and 97 in the series of 105), all having average residuals greater than 200mls. Patient number 8 had no other diagnoses present whilst the other three patients all had preoperative voiding difficulty. Patients number 55 and 97 had mild detrusor instability whilst patients number 84 and 97 had intercurrent prolapse which was repaired at the time of the TVT procedure.

Patients number 8, 84 and 97 underwent removal of the tape at respectively 2, 17 and 7 days postoperatively for reasons of significant symptoms of voiding difficulty. The TVT procedure was re-performed at the same session with a new tape and hopefully more optimal tension. Patient number 55 was managed expectantly initially as symptoms of voiding difficulty were minimal. With a failure of resolution of the severe voiding difficulty by three months postoperatively, a posterior division of the TVT tape and any surrounding fibrosis (release) was performed through a small vaginal incision over the tape. Resolution of the voiding difficulty in each case was assessed by the change in the voided volumes and residuals following treatment.

RESULTS: Table 1 lists the four cases of severe voiding difficulty in the series of 105 TVT cases, the surgical treatment of the voiding difficulty used and the voided volumes and residuals before and after that treatment.

TABLE 1:

Patient No	Treatment	Preop Ave. Void. Vol.	Preop Ave. Residual	Postop Ave. Void.Vol	Postop Ave. Residual
8	Day 2 TVT Remove/Replace	50	300	250	20
55	Day 92 TVT Incision(Release)	100	350	250	150
84	Day 17 TVT Remove/Replace	150	250	300	85
97	Day 7 TVT Remove/Replace	100	250	250	20

Early removal/replacement of the TVT appears the more effective treatment of severe voiding difficulty. All four women remained cured of the GSI after both treatments. Interim voiding cystometry in patients number 55 and 84 prior to surgical management of the voiding difficulty showed maximum detrusor voiding pressures of 30 and 37 cm H20 respectively, less than the levels than might be normally expected if bladder outflow obstruction was the mechanism of the voiding difficulty.

Removal of the TVT tape in patients number 8 and 97 at postoperative day 2 and 7 respectively was performed without difficulty. The removal of the tape in patient number 84 at postoperative day 17 days was very difficult.

CONCLUSIONS: Severe voiding difficulty, with careful attention to intraoperative tensioning, is an infrequent complication of the TVT but one that may occur in the learning curve or where high risk cases (e.g preoperative voiding difficulty) are undertaken. Voiding cystometry studies do not clearly confirm bladder outflow obstruction as the mechanism of the voiding difficulty.

Early diagnosis (persistent residuals over 200mls at 7 days postoperatively) and early removal and replacement of the TVT at more optimal tension appears the more effective management. This should occur within a maximum14 days postoperatively. Later than this, the tape becomes too difficult to remove. Significant subjective and objective relief of the voiding difficulty is also possible by a medium-term incision (release) of the TVT posterior to the urethra.