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CORRECTION OF STRESS INCONTINENCE WITH A POLYTETRAFLUOROETHYLENE PATCH SLING.

Aims of study.

Recently, the pubovaginal sling procedure has been regarded as first line treatment for urethral hypermobility as well as intrinsic sphincter deficiency because of its durability. However, several problems remain unsolved. First, how tight should the urethra be suspended by a sling to achieve a high success rate and to avoid associated urinary urgency affecting the quality of life of patients. Secondly, can a pubovaginal sling be safely constructed in elderly women. To clarify these questions, we analyzed surgical outcomes in the patients undergoing the pubovaginal procedure

Methods.

From 1989 to 1998, we treated 84 females for stress urinary incontinence with the pubovaginal sling procedure. Of the 84 patients 57 had type 2 stress urinary incontinence and 37 had type 3 stress urinary incontinence. All patients underwent the pubovaginal sling procedure using a polytetrafluoroethylene patch such as is generally used for vascular graft[1]. Two small incisions are made in the anterior vaginal wall 20 mm lateral from the central line at the urethrovesical junction. Dissection is continued from the right to the left side of the vaginal wall to make a tunnel under the vaginal wall. The plane of dissection is made between the anterior vaginal wall and dorsal part of the periurethral fascia. The rectangular patch used in our procedure is 15 x 30. It is oversewn by No. 2 nylon suture along both 15 mm edges. The sling is placed in the dissected layer in the anterior vaginal wall. The remaining steps of the procedure are similar to those of the standard needle suspension procedure. All suture ends are brought up to the lower abdominal wall by a needle suspension technique. Suspension tightness of the bladder neck was determined by observing the bladder neck on an ultrasonographic sagittal image[2]. The nylon sutures were loosely fastened over the rectus fascia to avoid undue tension. When the sutures were fastened, a finger of operator was placed between nylon suture and rectus fascia at each puncture site to create air space. Moreover, the nylon sutures were fastened to set the posterior urethrovesical angle at about 90 degrees under ultrasonic monitoring. The indwelling catheter was removed 1 day postoperatively. We mailed followup questionnaires to 84 patients to assess the outcomes of our procedure. Urinary incontinence was defined as cured if patients had no urine leakage and did not need any protection.

Results.

Patients in type 3 incontinence were significantly older than those in type 2 incontinence. Of the 84 patients 79 had no difficulty voiding immediately after operation. The remaining 5 patients, comprising 3 patients in type 2 incontinence and 2 in type 3 incontinence, had urinary retention for 3 days after removal of catheter and required intermittent catheterization

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for 7 days till the volume of residual urine decreased less than 50ml. Maximum flow rates decreased postoperatively, but remained in the good range. Cure rates were 81.4% in type 2 incontinence and 57.1% in type 3 incontinence. There was no tendency of urine leakage recurrence to increase with time. De novo urge symptom was significantly associated with the patients with type 2 incontinence, while urge incontinence was most likely to persist in the patients with type 3 incontinence. Pelvic pain was reported in 14 patients (13.3%) and bore no relation to either operative method or type of incontinence. Only urine leakage recurrence and postoperative urge symptom affected postoperative satisfaction rate. A patient age has no relation to cure rate, voiding difficulty and urgency. In the pubovaginal sling procedure, maximum flow rates decreased after operation regardless of the type of incontinence or patient ages, but remained in the permissible range. The polytetrafluoroethylene patches were removed in 2 patients due to bacterial infection and in 1 patient due to urethral perforation and stone formation.

Conclusions.

The pubovaginal sling procedure using polytetrafluoroethylene patch was effective for all types of stress urinary incontinence regardless of patient ages. Since de novo urgency is associated with too tight suspension tension and adversely urge symptom persists when the sling is set by looser tension, I premises that the suspension tightness was proper or slightly too tight in type 2, but should have been tighter in type 3 in our series. Therefore, To achieve a high success and satisfaction rate, we should determine the most proper suspension tightness of the sling in each patient after discriminating whether they are a complicated case or not, and whether there is bladder neck incompetence or not.

References.

1. The correction of type 2 stress incontinence with a polytetrafluoroethylene patch sling: 5-year mean followup J. Urol., 160: 746, 1998.
2. Application of transrectal ultrasonography in modified Stamey procedure for stress urinary incontinence. J. Urol., 146: 1555, 1991.