

## **PUBOVAGINAL SLING VERSUS TVT PROCEDURE :OBSERVATIONS ON URODYNAMIC DIFFERENCES**

### **Aims of Study**

Pubovaginal slings are effective in treating women with I.S.D.;recently the indications for sling encompass patients with either intrinsic sphyncteric and anatomic incontinence.

TVT has emerged as a alternative in the treatment of patients with urinary incontinence due to anatomic defect and ISD.

Our objective is to examine and compare the effects of a pubovaginal sling and TVT procedure, in two homogeneous groups of patients , on urethral activity.

### **Methods**

57 women with urodinamically confirmed S.U.I. were prospectively enrolled.

The mean age was 62.4 +/- 10.6 years and parity was 3.0 (range 0-6). S.U.I. was due to ISD( low urethral closer pressure < 20 cmH<sub>2</sub>O and Valsalva leak point pressure < 60 cm H<sub>2</sub>O) and Hypermobile urethra ( cotton swab test >30°) in 20 patients and only hypermobile urethra in 37.

Preoperative evaluation included :hystory and physical examination, postvoid residual volume measurement, cough stress test.

Cystometric, Pressure-Flow-study and urethral pressure measurement (at rest and during stress) were performed .

Valsalva leak point pressure determination was performed at 200 ml, in supine and upright position.

5 patients had frequency and other 5 had urgency and urge incontinence (overactive bladder).

The patients were assigned random for the procedure:32 women for TVT operation (10 with ISD + Hypermobile urethra) and 25 (10 with ISD + Hypermobile urethra) for pubovaginal sling with prolene mini- patch.

The procedures were performed in local anesthesia and regulation of sling (pubovaginal and TVT) was made , during operation , with a stress test to 200/300 (first desire) ml of a saline solution in the bladder.

Postoperatively the women were scheduled to be evaluated at 3-6-12 months and annually. All patients underwent a repeat urodynamic evaluation 6 and 12 months after surgery.

We examined and compared the MUCP values obtained during urethral stress profile after operations.

### **Results**

Mean follow-up was 18 months.

Postoperative results for TVT were : hospital stay 2 days, spontaneous micturition onset on the day after operation, 2 bladder perforations, 1 woman with increased intraoperative bleedings.

Cure rate was 90,6%(29 women), 3 women referred persisted SUI, modified from severe to mild. 2 women referred voiding disfunction with reduced and prolonged stream but no post-voided residual urine or urge and frequency. 4 patients referred persistent overactive bladder and 2 de novo instability.

Postoperative results for pubovaginal sling were :hospital stay 4/5 days , onset of spontaneous micturition 2 days after operation in 18 women,.32% had voiding disfunction with poor stream ,post-voided residual urine > 25 % of bladder volume for 14 days post-operation and normalization after 1 month of self- cateterization . No bladder perforation or increased bleedings. Cure rate was 88% (22 women). In 3 women SUI was recurrent. 6 patients referred de novo instability.

### **Conclusions**

Continence is dependent upon multiple factors:resting tone ,external compression,presure transmission and normal anatomy.The midurethra is most important for these factors.(1)

Our observation was that in women operated with pubovaginal sling the points of maximum urethral closure (MUCP) were measured to a more distal location compared with the position of mini-patch .

The values of MUCP were near the mid-urethra and near the values of MUCP measured in women operated of TVT.

We retained that suspension procedures at either bladder neck or the mid-urethra reinforced this important point and restored normal anatomy and physiology , improving the transmission of pressure to the intrinsic urethra and muscular complex and curtailing the force that opens the bladder neck, proximal and mid-urethra.

Petros (2) has demonstrated that midurethral suspension surgery prohibits the hypermobile bladder neck from opening the midurethra. This procedure allows for the normal mobility of the bladder neck that occurs with micturition; differently , the pubovaginal slings procedure interfere with a normal mobility of bladder neck and disrupt normal voiding with increase urinary retention and obstruction.

### **References**

Petros PEP,Ulmsten UI. An integral theory of female urinary incontinence, experimental and clinical consideration. *Acta Obstet Gynecol Scand*.1990;153:7-31

Petros PEP,Von Kony B. Anchoring the midurethra restores bladder neck anatomy and continence. *Lancet* 1999;354 (9183):997-998.