Kumiko Kato, Atsuo Kondo, Koichi Suzuki, Shotoku Sai, Tatsuro Murase, Yoko Yoshikawa, Momokazu Gotoh, Shinichi Ohshima

Department of Urology, Red Cross Nagoya First Hospital, Nagoya University, Nagoya, Japan

POSTOPERATIVE RE-DESCENT OF THE BLADDER NECK: COMPARISON BETWEEN NEEDLE BLADDER NECK SUSPENSION AND SUBURETHRAL SLING WITH BONE ANCHORING

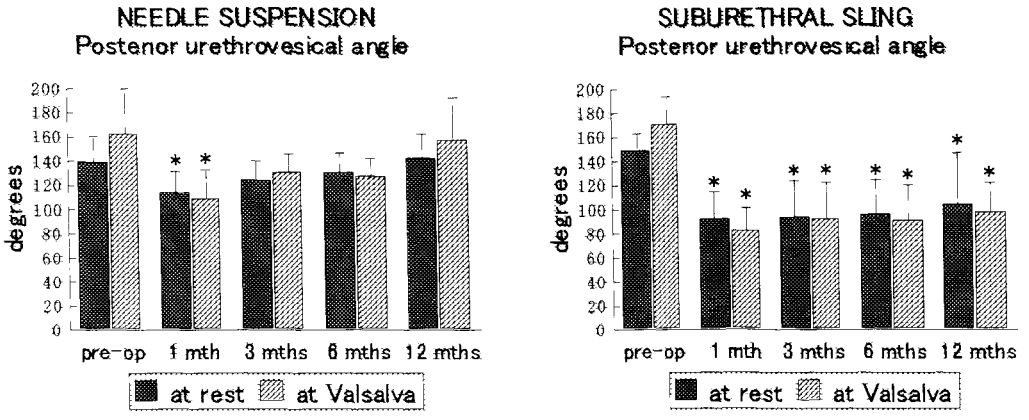
Aims of Study: Recent meta-analyses demonstrated that sling surgery was superior to needle suspension in terms of the long-term surgical outcome. Subsequently, the former has gained increasing popularity in the treatment of female stress urinary incontinence in spite of the inherent risk of urinary retention. It is theorized that failure of suspension procedures may be due to either pulling through of the suspension sutures from the anchoring tissue or the periurethral tissue, or unrecognized intrinsic sphincter deficiency (ISD). The surgical outcome and bladder neck angles were compared between needle suspension and suburethral sling procedures, both of which were completed with a bone anchoring system for fixation of the sutures at the pubic bone.

Methods: Percutaneous bladder neck suspension with bone anchoring was done in 12 women between April 1996 and May 1997 (the suspension group). Between June 1997 and January 1999, 19 women underwent the suburethral sling procedure using the same bone anchor system (the sling group). As a synthetic sling material, Hemashield cut into the size of 3.5 × 1.7 cm, was used. All patients suffered from stress incontinence, and preoperative urodynamics under fluoroscopy proved genuine stress incontinence and no detrusor instability. There were no significant differences between age (58 ± 11 years), parity, body mass index, and severity and duration of stress incontinence of the two groups. None in the suspension group and 5/19 patients in the sling group had a history of failed anti-incontinence surgery. All patients had urethral hypermobility, and abdominal leak point pressures were <60 cmH_2O in 3/12 patients in the suspension group and in 13/19 patients in the sling group. As a follow-up, symptoms, 60-min pad test, uroflowmetry, fluoroscopic urodynamics and chain cystourethrography were prospectively examined at 1, 3, 6 and 12 months.

Results: In the suspension group, the subjective continence rate declined with the time course to 50% (6/12) at 12 months. Results of pad tests changed as 55 ± 83, 0.6 ± 0.7, 1.3 ± 2.5, 2.1 ± 3.6, and 5.5 ± 9.0 g/hr before and 1, 3, 6, and 12 months after the operation, respectively. In the sling

Kumiko Kato, Atsuo Kondo, Koichi Suzuki, Shotoku Sai, Tatsuro Murase, Yoko Yoshikawa, Momokazu Gotoh, Shinichi Ohshima

group, the subjective continence rate became 89% (17/19) at 12 months because stress incontinence recurred in two patients after removal of the sling material and sutures due to vaginal erosion. These two patients were subsequently managed by periurethral collagen injection or by inserting a bladder neck support prosthesis, and pad tests in other patients showed good continence (37 ± 34, 0.9 ± 1.4, 0.7 ± 0.9, 0.7 ± 0.8, and 0.6 ± 0.6 g/hr before and 1, 3, 6, and 12 months after the operation, respectively). Ostitis pubis was not encountered in any patients. There was no significant difference in postoperative periods of voiding difficulty (postvoid residual urine> 50 ml) between the suspension group (mean 7.3 ± 5.4, median 5 days) and the sling group (mean 9.4 ± 6.5, median 8 days). Maximum flow rates showed no significant decrease after 3 months compared to the preoperative value. De novo detrusor instability was not documented urodyanamically. Posterior urethrovesical angles at rest and at maximum Valsalva were significantly reduced 1 month postoperatively compared to preoperative state in both groups. However, during the follow-up period, these angles gradually returned to former state in the suspension group indicating re-descent of the bladder neck, whereas these angles were kept stable and the bladder neck remained well supported in the sling group (Figures).



Conclusions: This study demonstrated re-descent of the bladder neck and the decline of successful outcome with the time course following needle suspension procedures. The cheese wire phenomenon (pulling through of the suspension sutures from the periurethral tissue) rather than ISD seemed to be the essential reason of failure of needle suspension, and bone anchoring did not contribute to solving this problem. In suburethral sling procedures, using bone anchors and suture spacers seemed to be one of the methods to obtain durable support with "minimum tension" though sling materials without risk of vaginal erosion must be sought. In conclusion, the suburethral sling procedure is a more promising surgery for stress urinary incontinence compared to needle suspension which has significant risk of re-descent of the bladder neck.