

## SINGLE INCISION SURGERY (MINIARC) AND TRANS-OBTURATOR TAPE SURGERY (MONARC ) EXHIBIT SIMILAR CONTINENCE MECHANISMS OF ACTION ON FEMALE STRESS URINARY INCONTINENT PATIENTS

### Hypothesis / aims of study

This study aims to compare and evaluate postoperatively, using clinical correlations and ultrasound the urethral morphology in women who had undergone single incision surgery (SIS, Miniarc™) and outside in trans-obturator tape surgery (TOT, Monarc™) in the treatment of urodynamic stress incontinence (USI).

### Study design, materials and methods

140 patients with USI and undergone either the Miniarc or the Monarc anti-incontinence surgery. Excluded from the study were patients with neurological bladder dysfunction, pelvic organ prolapse >stage II International Continence Society (ICS) grading system, and post void bladder residual of > 100 mls.

Multichannel urodynamics, ultrasonography and subjective questionnaire (UDI-6, IIQ-7 and PISQ-12) were scheduled at 6 months and at annual follow-up. The follow-up perineal and introital ultrasound examination to evaluate the tape and bladder neck (BN) was performed. The ultrasound parameters exploring the tape (xt, yt) and BN position (xbn, ybn) was measured using the rectangular coordinate system at sagittal plane, with a reference marker at the lower margin of the symphysis pubis with the patient at rest and maximal Valsalva. The mobility of the tape and BN was calculated. The ultrasound parameters exploring the tape tension include distance between the tape and center of urethral core, the shortest and longest diameter of the urethral core were measured. In addition, the percentile of urethra where the tape was located and the presence of urethral kinking during the Valsalva maneuver were recorded. Urethral kinking, defined as a tape angularity, was noted ultrasonographically on patients during maximum straining. The objective outcome was defined as no urinary leakage on urethral pressure profilometry (cough profile) and with pad > 2 g. The subjective outcome was a negative patient's response to question 3 of UDI-6.

### Results

130 women were available at follow ups. The objective cure for Miniarc and Monarc was 91.2% (73/80) and 92.0% (46/50) respectively at one year. The subjective cure was 90% for both. Postoperative MUCP was significantly higher with Miniarc when compared to Monarc procedure. 119 women successful treatment post-operative (46 cases in the TOT group, 73 in SIS group) were available for follow-up study. At rest and during Valsalva maneuver, distance of the bladder neck and tape on ultrasound scanning were similar. At rest, the longest diameter ( $p=0.017$ ) and shortest diameter of the urethral core at suburethral tape location were significant ( $p=0.019$ ) with the Miniarc. At straining, tape displacement was more with Monarc with both procedures showing a reduced cross sectional area. Tape position and percentage of urethral kinking were similar.

### Interpretation of results

In conclusion, dynamic urethral kinking and urethral compression effect of slings are two main components attribute to continent effect after Miniarc and Monarc. With comparable subjective and objective outcomes, both the procedures exhibited similar mechanisms of action.

### Concluding message

Single incision surgery (Miniarc) and Trans-obturator tape surgery (Monarc ) exhibit similar continence mechanisms of action

### Disclosures

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