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# #387 A Comparison of Consecutive Flow Rates and Voiding Functions between Three Different Midurethral Slings in Elderly Women

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## Introduction

•Many midurethral sling (MUS) products have been developed for surgery of stress urinary incontinence (SUI).

- Monarc subfascial Hammock system
- TOT (Tension Free Obturator Tape) system
- Align trans-obturator urethral support system

•Three slings are outside-to-in trans-obturator approach type and consists of polypropylene monofilament mesh.

•The main difference with these products is that

- **Monarc** contains an absorbable tensioning suture threaded into the length of the mesh. It allows for tensioning adjustment of the mesh after placement.
- **TOT** system is same outside-in type but has a closed edge polypropylene mesh without absorbable tensioning suture.
- **Align** has a halo needle with a larger radius arc without absorbable tensioning suture.

•However, there have been no previous studies to compare the outcomes of the MUS surgeries with regard to this, especially elderly women.

•In particular, post-operative temporary or persistent voiding dysfunction and storage symptoms are more prevalent among elderly women than among younger women after MUS surgery.

•The aim of this study was to compare consecutive changes of postoperative flow rates and voiding functions among three types of MUS procedure in elderly SUI women.

## Method

•A total of 47 elderly women (≥ 65 years of age) with SUI

•Prospectively, randomly assigned Monarc / TOT / Align procedure by the same operator under general anesthesia.

• Preoperative work-ups

- Medical history, Physical examination, UDS

•Postoperative follow up

- At 1 day, 1 week, 1 month, 3 months, 12 months

•Objective parameters

- Uroflowmetry, Postvoid residual urine (PVR)

•Subjective parameter

- The patients were asked if voiding had changed after surgery, i-QoL at 12 months.

•POD#1 year

- Surgical outcomes : the cough stress test with full bladder

## Results

•The mean age of 47 patients

(68.9, 65-80 years old)

Table 1. Characteristics of the patients

| Variables | Monarc (n=18) | TOT (n=15) | Align (n=14) | P-value |
|---|---|---|---|---|
| Age (years) | 68.6±4.2 | 69.5±2.9 | 69.0±3.7 | 0.81 |
| Parity (times) | 2.3±0.8 | 2.5±1.6 | 2.3±1.2 | 0.78 |
| Q-tip test (degree) | 31.7±6.9 | 26.0±10.9 | 30.4±8.4 | 0.18 |
| 1-hour pad test (gram) | 20.3±12.2 | 29.7±19.4 | 19.4±6.3 | 0.09 |
| Pre-op UDS parameters | | | | |
| Free Qmax (ml/s) | 19.2±4.7 | 21.3±3.7 | 21.4±5.0 | 0.30 |
| Voided volume (ml) | 207.5±33.3 | 199.7±58.8 | 187.4±43.1 | 0.47 |
| PVR (ml) | 22.0±18.3 | 27.5±20.8 | 25.6±20.9 | 0.72 |
| MUCP ($cmH_2O$) | 52.1±9.5 | 55.3±13.2 | 51.2±15.3 | 0.64 |
| VLPP ($cmH_2O$) | 71.6±13.6 | 70.6±15.8 | 65.9±15.5 | 0.54 |

Table 2. Results of comparing post-op maximal free flow (Qmax), postvoid residual urine (PVR)

| Post-OP | 1day | 1wk | 1m | 3m | 12m |
|---|---|---|---|---|---|
| Monarc (n=18) | | | | | |
| Qmax (ml/sec) | 17.6±5.0 | 20.6±4.4 | 18.6±4.3 | 20.0±4.3 | 22.2±3.8 |
| PVR (ml) | 23.8±23.5 | 17.8±9.6 | 28.1±15.5 | 8.6±6.0 | 10.5±10.3 |
| TOT (n=15) | | | | | |
| Qmax (ml/sec) | 17.5±4.5 | 16.4±2.8* | 20.3±4.7 | 19.9±4.4 | 21.2±2.3 |
| PVR (ml) | 20.9±19.1 | 19.1±8.0 | 20.1±9.5 | 15.6±9.4 | 9.7±8.2 |
| Align (n=14) | | | | | |
| Qmax (ml/sec) | 16.9±3.9 | 17.3±4.6* | 18.1±5.1 | 19.9±3.4 | 22.0±2.2 |
| PVR (ml) | 36.6±25.4 | 27.2±16.7 | 29.3±18.4 | 10.1±10.1 | 8.0±8.9 |
| P-value | | | | | |
| Qmax (ml/sec) | 0.90 | 0.01* | 0.40 | 1.00 | 0.62 |
| PVR (ml) | 1.52 | 0.07 | 0.20 | 0.06 | 0.75 |

Table 3. Cure rates and subjective voiding difficulty rates at the 1yr follow-up

| | Monarc (n=18) | TOT (n=15) | Align (n=14) | p-value |
|---|---|---|---|---|
| Anatomical success rates (%) | | | | |
| Cured | 14 (77.8) | 11 (73.3) | 10 (71.4) | 0.91 |
| Failed | 4 (22.2) | 4 (26.7) | 4 (28.6) | |
| Subjective voiding difficulty (%) | | | | |
| + | 5 (27.8) | 5 (33.3) | 5 (35.7) | 0.26 |
| - | 13 (72.2) | 10 (66.7) | 9 (64.3) | |

## Conclusions

•MUS appears to be a safe and effective procedure for the management of SUI in elderly women. Of the three types, an absorbable tensioning suture in the Monarc mesh could increase Qmax compared to the others at one week after MUS procedure.

•We propose that an absorbable tensioning suture may reduce the risk of early postoperative voiding dysfunction compared to other mesh without this.

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