



Mid-term results of ReMEEX sling system for female stress urinary incontinence with various indication and feasibility of re-adjustment

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INTRODUCTION

- Determining the optimal balance for incontinence/obstruction is crucial step in setting the proper tension during the mid-urethral sling operation.
- The re-adjustable mid-urethral sling (ReMEEX system; Neomedic International, Terrassa, Spain) is a device in which sub-urethral tension can be adjusted postoperatively.
- ReMEEX system can be re-adjusted under local anesthesia several months or even years after initial sling surgery. However, implantation of the ReMEEX system may increase the amount of foreign bodies and may increase the possibility of infection.

HYPOTHESIS / AIMS OF STUDY

- To assess the safety and efficacy of implantation of the sub-urethral tension adjustable sling (ReMEEX system) in female stress urinary incontinence (SUI) with recurrence, intrinsic sphincter deficiency (ISD), or detrusor underactivity (DU).
- To evaluate mid term efficacy and complications of ReMEEX sling system's readjustment depending on the indications of surgery

MATERIALS AND METHODS

Enrolled population

303 female patients who underwent ReMEEX between March 2008 and May 2021

[Grouping]

Recurrence: previous operation for GSI

ISD: ALPP <60 cm H₂O or MUCP <20 cm H₂O.

DU: Qmax was ≤12 mL/sec and PdetQmax was ≤10 cmH₂O during a PFS.

None: only for recurrence case

Outcome measures

Treatment outcomes

: **Success - 'cure'** (absence of subjective complaint of leakage and absence of objective leakage on the stress test) or

'improve' (rare leakage subjectively, but satisfaction regardless of the stress test)

: **Failure** - all other outcomes and use of any treatment for postoperative incontinence

Complications by Clavien-Dindo system

Statistical Analysis

- Comparisons among the groups: One-way analysis of variance with Scheffe's method for multiple comparisons or Chi-square test depending on the types of variables

- The SPSS software package version 22.0 (IBM Corp, Somers, NY, USA) was used, and a two-tailed P value <0.05 was determined to indicate statistical significance.

RESULTS

- There were insignificant differences among subgroups except mean follow-up duration (p<0.001).
- There were no significant differences among subgroups in post-void residual urine (p=0.209), IPSS QoL score (p=0.069), and total OABSS score (p=0.818) performed before surgery, at postoperative 1st year and 2nd year. Meanwhile, Qmax (p=0.002) and Total IPSS score (p=0.044) significantly differed among groups.
- At the final follow-up visit, 130 (42.9%) patients were cured, 149 (49.2%) were improved and 24 (7.9%) failed treatment.
- At a mean follow-up period of 34.4 (±31.5) months, 65 patients (21.5%) required sling tension re-adjustment (mean number: 1.2).
- Total complication rate (any grade) was 19.5% without complication ≥grade 4. Complications included voiding difficulty requiring catheterization (52, 17.2%), Wound problem (10, 3.3%), and severe leg pain (3, 1.0%)

INTERPRETATION OF RESULTS

- Our findings add data on the safety of using the Remeex® readjustable sling with an acceptable number of complications compared with other existing studies.
- Our general complication rate (19.5%) is comparable to that of other series, ranging from 31.7% to 51.1%.
- Readjustment of the Remeex® system was performed in 21.5% of our patients, not inferior to others (15.6 - 42.9%).
- There is no consensus regarding the exact tension needed for each patient undergoing an adjustable sling procedure. Nevertheless, surgeons performing ReMEEX should have extensive knowledge on proper sling implantation techniques to decrease the number of unexpected adverse outcomes.
- The greatest advantage of the ReMEEX is its readjustment capacity to achieve an ideal tension for each woman, reducing and even avoiding possible re-interventions. Our rate of readjustments (21.5%) is higher than others (7-10% during 11.7 - 60.6 months).
- Despite our higher rate of readjustment, we showed one patient was readjusted to keep continence 130 months after surgery revealing durability and safety of ReMEEX system.

CONCLUDING MESSAGE

- The ReMEEX system resulted in a success rate of 92.1% at a mean follow-up of 34.4 months with a relatively low complication rate (19.5%) in female SUI with DU, reoperation, or ISD.
- The ReMEEX system also enabled postoperative re-adjustment of sling tension, as needed, up to 130 months after surgery.
- Our midterm outcomes are comparable with other series, with a low rate of complications.
- Well-designed, prospective studies with a careful preoperative assessment may result in better cure rates in these complicated SUI patients.

Table 1. Outcomes of ReMEEX sling system

	Detrusor underactivity (n=145)	Reoperation for UI (n=48)	Intrinsic sphincter deficiency (n=110)	Total (n=303)	p value
Cure	63 (43.4%)	22 (45.8%)	45 (40.9%)	130 (42.9%)	0.980
Improvement	71 (49.0%)	22 (45.8%)	56 (50.9%)	149 (49.2%)	
Failure	11 (7.6%)	4 (8.3%)	9 (8.2%)	24 (7.9%)	
Mean follow-up duration (Months ± SD)	27.8 ± 26.2	32.0 ± 29.3	44.2 ± 36.3	34.4 ± 31.5	<0.001
Readjustment*	30 (20.7%)	8 (16.7%)	27 (24.5%)	65 (21.5%)	0.515
Mean number of adjustments	1.1 ± 0.3	1.1 ± 0.4	1.3 ± 0.7	1.2 ± 0.5	0.242
Mean duration between surgery and last adjustment (Months ± SD)	16.2 ± 25.8	20.5 ± 19.0	15.5 ± 27.6	16.5 ± 25.5	0.890
Any complication	29 (20.0%)	9 (18.8%)	21 (19.1%)	59 (19.5%)	0.974

* : re-adjusted after postoperative 3months

References

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