

Ultrasound Assessment and Symptom Burden in Women with SUI

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AIM:

The aim of this study was to **evaluate the correlation between ultrasound-derived anatomical parameters and patient-reported outcomes** before and one month after surgical treatment, to determine whether structural measurements reflect symptom severity and quality of life.

**STUDY DESIGN, MATERIALS AND METHODS**

Prospective observational study

100 women undergoing surgical correction for SUI

Transperineal ultrasound measurements at rest and during Valsalva

Patient-reported outcomes: OABSS, ICIQ-SF, UDI-6, I-QOL, IIQ-7

Assessments: preoperatively and 1 month postoperatively

**SAMPLE SIZE:**
Power ≥80%, α = 0.05
Minimum required: 90–100 participants
(We included 100 women)

**RESULTS**

BASELINE CHARACTERISTICS (n = 100)

Mean age
51.9 ± 11.6 years (27–86)

Mean body weight
76.4 ± 16.0 kg (45–170)

Mean BMI
28.3 ± 4.6 kg/m² (18.3–42.4)

Mean duration of symptoms
6.4 ± 5.5 years (0–30)

CLINICALLY SIGNIFICANT ANATOMICAL CHANGES

PARAMETER	PREOPERATIVE Mean ± SD	POSTOPERATIVE (1 MONTH) Mean ± SD	Z-VALUE	p-VALUE
 Urethral length (at rest)	32.22 ± 6.03 mm	33.72 ± 5.19 mm	-2.187	0.029
 Urethral length (Valsalva)	29.44 ± 8.95 mm	30.79 ± 9.39 mm	-1.978	0.048
 Distance: symphysis to mid-urethra (at rest)	11.68 ± 4.29 mm	10.39 ± 3.33 mm	-2.647	0.008
 Distance: symphysis to mid-urethra (Valsalva)	13.05 ± 4.89 mm	11.39 ± 4.21 mm	-3.408	0.001
 α-angle (Valsalva)	47.40 ± 29.74°	43.88 ± 32.47°	-3.787	<0.001

No significant changes in: urethral diameter (at rest/Valsalva), distance from symphysis to bladder neck, posterior urethrovesical β-angle

PATIENT-REPORTED OUTCOMES IMPROVED SIGNIFICANTLY (p < 0.001)

**OABSS**
67 / 100 patients improved
↓

**ICIQ-SF**
100 / 100 patients improved
↓

**UDI-6**
99 / 100 patients improved
↓

**I-QOL**
97 / 100 patients improved
↑

**IIQ-7**
97 / 100 patients improved
↑

**INTERPRETATION OF RESULTS**

Surgical intervention primarily affected **urethral length**, **mid-urethra position**, and **dynamic α-angle** behavior.

Ultrasound-based anatomical measurements alone **do not reliably represent** patient-reported LUTS severity or quality of life.

There is a disconnect between structural assessments and **subjective symptom burden**.

**CONCLUDING MESSAGE**

Surgical correction of SUI significantly improves patient-reported symptoms and quality of life, while ultrasound-assessed anatomical changes are limited to urethral length, mid-urethra position, and α-angle dynamics. Most other structural parameters remain unchanged, and anatomical measurements do not consistently correlate with symptom severity. These findings emphasize the **importance of including validated patient-reported outcomes** in the evaluation of treatment effectiveness.