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## Introduction

Pelvic organ prolapse (POP) is often associated with a feeling of discomfort or vaginal bulge, urinary, bowel and sexual dysfunction, among other symptoms, which may impair patients' quality of life.

Reconstructive POP surgery aims to maintain a functional vagina while improving the above-mentioned symptoms.

Sacrocolpopexy (SCP) is currently considered the gold standard technique for complex POP (involving two or more compartments) and high grade prolapse.

The aim of this study is to evaluate the anatomical and functional outcomes, as well as the safety of SCP using a lightweight macroporous mesh.

## Methods and Materials

A multicentric observational study was developed including five expert centres between March 2011 and December 2019.

### Inclusion criteria:

- Female patients aged  $\geq 18$  years with symptomatic  $\geq$  stage II POP according to POP-Q classification
- Laparoscopic SCP, either uterine preserving or with hysterectomy
- 1 year follow-up.

**Surgical technique:** A standard lightweight and macroporous mesh device (Uplift®) was used. No concomitant anti-incontinence procedure was performed.

### Primary outcomes:

- Anatomical success, defined as POP-Q staging  $\leq$  I,
- Subjective success, defined as no bothersome bulge symptoms, and no repeat surgery or pessary use for recurrent prolapse.

### Secondary outcomes:

- Intraoperative and perioperative complications
- New onset urinary or bowel symptoms
- Mesh exposure rate
- Reoperation rate secondary to prolapse recurrence.

**Statistical analysis (SPSS 22.0):** Descriptive analysis is performed. Continuous variables are presented as the mean and standard deviation (SD) (normal distribution) or as median and interquartile range (IQR) (non-normal). Categorical variables are presented as frequency and percentage.

**Figure 1.** Uplift® device, a lightweight and microporous mesh.



**Table 1.** Demographic characteristics and preoperative data.

Patients, total	n= 325
Age (years), median (IQR)	66 (61-73)
Body mass index (kg/m <sup>2</sup> ), mean (SD)	26.9 (4.05)
Parity, n (%)	
– 0	6 (1.8)
– 1-2	83 (25.5)
– $\geq 3$	131 (40.3)
– not recorded	105 (32)
Preoperative urinary symptoms, n (%)	
– Urgency	162 (49.8)
– Pure UUI	59 (18.2)
– Pure SUI	64 (19.7)
– MUI	65 (20.0)
– Voiding difficulty	95 (29.2)
Preoperative constipation, n (%)	65 (20)
History of POP surgery, n (%)	60 (18.5)
History of UI surgery, n (%)	21 (6.5%)
History of hysterectomy, n (%)	94 (28.9)

## Results

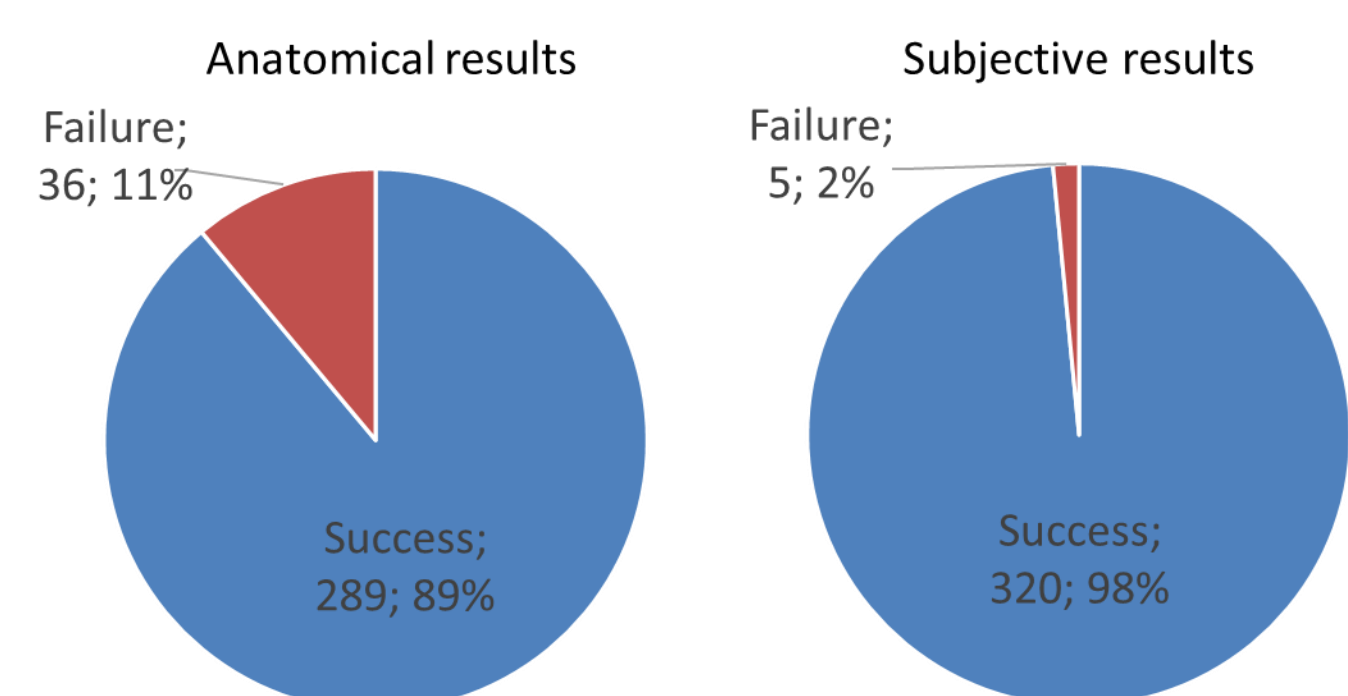
A total of **325 laparoscopic SCP** were analysed with a median patient age of 66 (IQR 61-73).

The median operating time was 180 minutes (IQR 150-210). Simultaneous hysterectomy was performed in 16 patients (4.9%). 7% of the patients suffered an intraoperative complication (Table 2), that was noticed and repaired intraoperatively. These complications were no obstacle to adequately complete the procedure. Median length of stay was 3 days (IQR 3-4).

After a median **follow-up of 68 months (IQR 46.5-89)**, anatomical success was 88.9%. Subjective success was seen in 98.5% of the patients. 1.5% of patients had an anterior wall prolapse recurrence that required surgical repair (Figure 2).

De novo urinary incontinence was reported by 12.9% of the patients (42), of which 10 (23.8%) underwent a subsequent anti-incontinence procedure.

**Figure 2.** Clinical success- 5 years follow-up



**Table 2.** Follow-up outcomes – complications.

	n	%
Intraoperative complications	24	7.4
–Bleeding	1	0.3
–Bladder	15	4.6
–Rectum	2	0.6
–Small bowel	2	0.6
–Ureteral lesion	2	0.6
–Vaginal lesion	2	0.6
Early postoperative complications (Clavien-Dindo)		
–I -II	27	8.3
–III	4	1.2
–IV	2	0.6
De novo SUI	42	12.9
Stress urinary incontinence surgery	18	5.5
–De novo incontinence	10	3.1
–Preexisting incontinence	8	2.5
Vaginal mesh exposure	4	1.2
Constipation	36	11
–De novo constipation	15	
Prolapse recurrence	36	11.1
–Anterior POP-Q stage $\geq$ II	32	
–Apical POP-Q stage $\geq$ II	4	
Surgical prolapse recurrence	5	1.5

## Discussion

Laparoscopic sacrocolpopexy is set to become the reference technique in complex and high-grade POP. Although anatomical recurrence may happen in approximately 10-15% of the patients, subjective results are highly satisfactory using these technique.

However, there are still several controversies surrounding this technique, which should be further studied: uterine preservation, concomitant or deferred procedure for urinary incontinence.

Studies should be encouraged to continue evaluating the safety of abdominal meshes and real-practice results, especially regarding chronic pain, urinary and sexual function outcomes.

## Conclusions

Laparoscopic SCP is a safe and effective minimally invasive approach to sacrocolpopexy for women with  $\geq 2$  grade pelvic organ prolapse, with a low complication rate and a rapid recovery. It shows excellent anatomical and functional results, resulting in a low reoperation rate in the mid-term.

## References

1. Costantini E, Brubaker L, Cervigni M, et al. Sacrocolpopexy for pelvic organ prolapse: evidence-based review and recommendations. European journal of obstetrics, gynecology, and reproductive biology. Oct 2016;205:60-5.
2. Gutman R, Maher C. Uterine-preserving POP surgery. International urogynecology journal. Nov 2013;24(11):1803-13. doi:10.1007/s00192-013-2171-2
3. Claerhout F, De Ridder D, Roovers JP, et al. Medium-term anatomic and functional results of laparoscopic sacrocolpopexy beyond the learning curve. European urology. Jun 2009;55(6):1459-67. doi:10.1016/j.eururo.2008.12.008