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Outpatient laparoscopic sacrocolpopexy: feasibility and patient satisfaction

Sonia GUERIN^{1,4}, Krystel NYANGO TIMOH¹, Zine-Eddine KHENE², Chloé ROUSSEAU³, Yann Pierre CODET⁴, Raissa BRAGUET⁴, François TRIFARD⁴, BRUNEAU Lucie⁵, Vincent LAVOUE¹, Anne Cécile PIZZOFERRATO⁶, Emmanuel DELLA NEGRA⁴, Luc CORBEL⁴

1. Department of Gynecology Obstetrics, Rennes University Hospital, Rennes, France
2. Département of Urology, Rennes University Hospital, Rennes
3. Department of Clinical investigation, Rennes University Hospital, Rennes, France
4. Department of Urology, Plérin Private hospital, Plérin, France
5. Département of Gynecology Obstetrics, Plérin Private hospital, Plérin, France
6. Département of Gynecology Obstetrics, Caen University Hospital, France

Corresponding author:

Sonia GUERIN,

Department of Gynecology Obstetrics, Rennes University Hospital,

Phone: 06 48 09 41 66

E-mail: soniaguerein26@gmail.com

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ABSTRACT

Objective: Laparoscopic sacrocolpopexy is the standard surgery to correct apical pelvic organ prolapse. It is currently mainly practiced in the context of a conventional hospitalization, but more and more practitioners are developing it as an outpatient procedure. The objective of this study was to evaluate the feasibility of outpatient laparoscopic sacrocolpopexy and patient satisfaction.

Methods: This was a retrospective study comparing outpatients with inpatients who had undergone laparoscopic sacrocolpopexy. The main outcome was the rate of unscheduled visits and the number of early readmissions (i.e., <1 month). Secondary outcomes were complication rates and patient satisfaction.

Results: Eighty-four patients were included with 42 women in each group. The rate of unscheduled consultations was 16.7% (n=7/42) in the outpatient group and 21% (n=9/42) in the inpatient group. 2.4% (n=1/42) of outpatients and 4.8% (n=2/42) of inpatients were re-hospitalized within a month after surgery. The complication rate was not significantly different between the groups. In the outpatient group, 88.2% of patients were satisfied compared with 97.5% in the inpatient group ($p=0.17$)

Conclusions: Outpatient laparoscopic sacrocolpopexy can be considered a safe and satisfactory option.

Keywords: laparoscopic sacrocolpopexy, same-day discharge, outpatient hospitalisation; feasibility study

Introduction

Pelvic organ prolapse (POP) is a public health issue, one study estimates that the number of women in the US with POP will increase by 46% to reach 4.9 million by 2050[1]. The gold standard for correcting POP is laparoscopic sacrocolpexy (LSCP) [2].

LSCP is a minimally invasive approach resulting in fewer complications and better recovery compared with the abdominal approach [3–5]. For this reason, it is suitable for same day discharge as for laparoscopic hysterectomies[6–8].

Several studies have shown that same day discharge is associated with a low rate of complications, readmissions, and unscheduled visits[9, 10]. The risk of deep venous thromboembolism and surgical site infections is also reduced[11]. Care is optimized – no drainage, pre-analgesic medication, wound infiltration and mobilization is immediate. In addition, in today's cost-conscious healthcare environment, it reduces costs and maximizes hospital infrastructure.

Same day discharge for LSCP patients involves anticipating home nursing and medication needs (mainly analgesics). However, outpatient management could carry with it a risk of delayed treatment in case of complications. Moreover, few data exist on outcomes after day care LSCP.

The objective of this study was to evaluate the feasibility of outpatient LSCP and patient satisfaction.

Materials and methods

Study design

This was a retrospective study that included women who underwent surgery for POP by LSCP between January 2017 and January 2020 in a private institution.

We compared a group of outpatients with a group of inpatients aged between 18 and 70 years who had undergone LSCP for symptomatic apical vault prolapse stage ≥ 2 . All were affiliated to the French health care system and could speak and read French. Outpatients were in the hospital for less than 12 hours—in accordance with the French definition of same day discharge and were advised not to be alone the night following the operation.

Exclusion criteria included patients who had undergone a laparotomy or vaginal route conversion, and patients who did not return the questionnaire.

The decision to discharge a patient was made by the surgeon alone, based on his experience and with the patient's agreement.

Four surgeons (3 urologists and 1 gynaecologist) performed the LSCP procedure on an outpatient basis, and two others (urologists) on a conventional inpatient basis. All of the surgeons were experienced having each performed at least 70 LSCP procedures previously.

Surgical procedure

A urodynamic assessment was performed preoperatively, and a gynaecological consultation was required for patients operated on by a urologist.

All the patients received premedication by paracetamol only, or paracetamol and anti-inflammatory drug, 2 hours before the surgery. They received either an anterior mesh (RESTORELLE® L and/or R COLOPLAST) alone or with a posterior mesh associated depending on the presence of a symptomatic rectocele. The wounds were infiltrated by ropivacain 7.5mg or 2 mg (20 ml) and surgery was followed by a 2-hour stay in the recovery unit.

For the outpatients, the urinary catheter was removed at the end of surgery or before leaving the recovery unit. Patients returned home when their Chung score was 10/10[12]. Chung score is a post-anaesthetic discharge scoring system. A nurse called the patient the day after the operation to make sure there were no complications. For the inpatients, the urinary catheter was removed on D1 of the surgery.

A postoperative appointment was programmed between 1 month and 6 weeks after the surgery for all the women.

Data collection

Patient characteristics included age, body mass index, previous abdominal pelvic surgeries, parity, American Society of Anesthesiologists (ASA) classification, and evaluation of the POP based on the Baden-Walker system. Surgical data included the number of meshes applied, any complementary procedures (oophorectomy, suburethral slings or both), and operative time. Postoperative outcomes were pain (visual analogue scale (VAS)), length of stay and complications. Complications were evaluated according to the Clavien-Dindo classification[13].

A questionnaire was designed from questionnaires already used in similar studies to assess patient satisfaction and collect data[14, 15]. The survey consisted of six

questions common to both groups (Appendix 1), using non-medical language. It was sent between march 2019 and march 2020 at least 8 weeks after the surgery.

The primary outcome was the rate of unscheduled visits and hospital readmission in the month after surgery. Unscheduled visits were defined as a contact (visit or call) with a general practitioner, a surgeon or an emergency department visit.

The secondary outcomes were the rate of complications and patient satisfaction.

The study complied with French legislation concerning the processing of patient data for observational purposes (n° MROO3: 2219488)

Statistical analysis

Descriptive statistics were reported as median and interquartile range (IQR) for continuous variables, and frequencies and percentages for categorical variables. For quantitative variables, groups were compared using the Mann Whitney test. Qualitative variables were compared using the Fisher's exact test. Statistical analyses were performed using JMP v.12.0 software (SAS Institute Inc, Cary, NC, USA). All tests were two-sided with P values <0.05 taken to indicate statistical significance.

Results

Patient and surgical characteristics

Of the 92 eligible patients, 44 were outpatients and 48 inpatients. One outpatient was excluded for laparotomy conversion and another for vaginal route conversion. Six inpatients were excluded for missing data, while there were no missing data for outpatients. In the end, 42 patients were included in each group (Figure1).

Patient characteristics are summarized in Table 1. The ASA score was significantly higher in the inpatient group ($p < 0.01$). There was no significant difference between the two groups regarding the stage of prolapse ($p = 0.68$).

The median operative time was higher in the inpatient group (164 min vs 111 min in the outpatient group, $p < 0.01$). An anterior mesh alone was applied in most of the cases: 88% in the inpatient group, and 76% in the outpatient group ($p = 0.15$). No concomitant hysterectomy was performed. An additional procedure (oophorectomy, suburethral sling or both) was performed for five outpatients and eight inpatients ($p = 0.39$). No intraoperative complications occurred. Median VAS-pain D-1 was 0 for inpatients compared with 1.5 (0-2) for outpatients ($p = 0.06$).

Unscheduled visits

Nine of the 42 patients from the inpatient group (21%) consulted outside of a routine visit: three for pain, and one each for venous lymphangitis, urinary incontinence, fever, urinary tract infection, skin allergy, and reassurance.

Seven of the 42 patients from the outpatient group (16.7%) consulted outside of a routine visit: two for skin infection, two for abdominal pain: and one each for urinary tract infection, lower back pain, and shoulder pain.

The difference between the two groups was not significant ($p = 0.58$).

Readmission and complications

The readmission rate was 2.4% ($n = 1/42$) in the inpatient group corresponding to one patient who was readmitted 10 days after the procedure for a small bowel perforation with peritonitis.

In the outpatient group, the readmission rate was 4.8% (n = 2/42) and both the patients were readmitted at D7 of the procedure.: one patient underwent a second operation for intestinal obstruction related to adhesions; and the other was hospitalized with bacterial colitis that was successfully treated with intravenous antibiotics.

The rate and the type of complications are reported in Table 2. The difference was not significant between the groups (p=0.19). In each group, four patients (9.5%) experienced Calvien-Dindo grade II or III complications. No grade IV complications were recorded.

Patient satisfaction

Patient satisfaction results are presented in Figure 2. In the outpatient group, 88.2% (n=36/72) were very satisfied or satisfied, 4.7% (n=2) were moderately satisfied, and 7.1% were not very satisfied/not satisfied. About 36% of the outpatients reported they would have preferred to remain in conventional hospitalization. In the inpatient group, 97.5% (n=41/42) were very satisfied or satisfied. Only one inpatient would have preferred to go home on the day of the surgery.

Discussion

The present study shows that outpatient LSCP is feasible and safe: the rate of unscheduled consultations and the number of readmissions were similar for the outpatients and inpatients in our cohort. In addition, more than 88% of the outpatients were satisfied with their management.

POP is a functional disease that affects quality of life[16, 17]. The gold standard to reduce symptoms is sacrocolpopexy which was first described by laparotomy[18]. The development of minimally invasive surgery has since made it possible to reduce postoperative side effects, shorten recovery time, resume activity earlier, reduce pain, and achieve better aesthetic results.

One particularity of our cohort was that it was from a private institution which is unusual because most cohorts are extracted from public hospital data. However, private centres sometimes have a different organization, and the results cannot always be extrapolated.

The two groups, outpatients and inpatients, were comparable except for the ASA score which was higher in the inpatient group. This corresponds to a real-life situation: an ASA score of 3 is often associated with a medical history incompatible with outpatient hospitalization.

The rates of unscheduled medical contact and readmission in this study were similar to those reported in other series[14, 15, 19]. Romanova et al compared patients discharged on the same day with those hospitalized overnight or more and reported no difference in readmissions (3.5 vs. 4.8%) or unscheduled medical consultations within 30 days of the operation (24 vs. 26.5%)[14].

In our study, the two cases of major complications occurred between 7 and 10 days after surgery suggesting that hospitalisation does not prevent complications.

Most of the outpatients in our study claimed to be satisfied with their experience. In a pilot study conducted by a team from Marseille[20], 71.4% of patients who underwent LSCP on an outpatient basis were satisfied or very satisfied. However, we noted that one third of our patients would have preferred a conventional hospitalisation. This is probably linked to a feeling of insecurity as suggested Evans et al[21] who asked

women how they perceived leaving hospital the day after minimally invasive gynaecological surgery. They reported that 51% of their patients would have liked to spend the night in hospital and that 43% of these felt that it might reduce the risk of complications. This emphasizes the need to organize medical and paramedical support to ensure follow-up and to reassure patients.

This study has several limitations. First, it was a single-centre retrospective study and the questionnaires were sent some time after the surgery: at a median time of 8.5 months for the outpatients and 9.5 months for the inpatients. Consequently, the results may have been influenced by memory bias, onset of recurrence, or late complications. Second the mean operating time was longer for the inpatients which is probably linked to the surgeons' experience. Surgeons performing outpatient LSCP were more experienced having performed more than 150 LSCPs. Related learning curves, operating time and complication rates decrease with the number of operations[22].

Third, no hysterectomy was performed in this cohort. According to a systematic review with meta-analysis by Kate V. Meriwether et al, uterus-preserving prolapse surgeries improves blood loss, operating time, and risk of mesh exposure without affecting short-term outcomes[23]. However, many surgeons perform hysterectomy during LSCP for POP and our results may not be applicable for this type of POP management.

Finally, the questionnaire was not validated. However, to the best of our knowledge, there is currently no validated questionnaire based on the French definition of outpatient hospitalisation (i.e., <12 hours).

In conclusion, LSCP appears to be feasible and safe as an outpatient procedure and satisfactory for the patient. Patients who are open to being managed on an outpatient basis require reassurance and support.

Figure legends:

Figure 1: Flow chart of patients

Figure 2: Patient satisfaction

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Authors' contributions

Study conception and design: Sonia GUERIN, Luc CORBEL

Acquisition of data: Sonia GUERIN, Luc CORBEL, Emmanuel DELLA NEGRA, Raissa BRAGUET, Lucie BRUNEAU, Yann CODET, François TRIFARD

Drafting of the manuscript: Sonia GUERIN

Critical revision of the manuscript for important intellectual content: Luc CORBEL Krystel NYANGOHO TIMOH, Emmanuel DELLA NEGRA, Zine Eddine KHENE, Anne-Cécile PIZZOFERRATO, Vincent LAVOUE

Statistical analysis: Zine-Eddine KHENE, Chloé ROUSSEAU

Supervision: Luc CORBEL, Emmanuel DELLA NEGRA, Krystel NYANGOHO TIMOH

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Figure 1 : Flow chart of patients

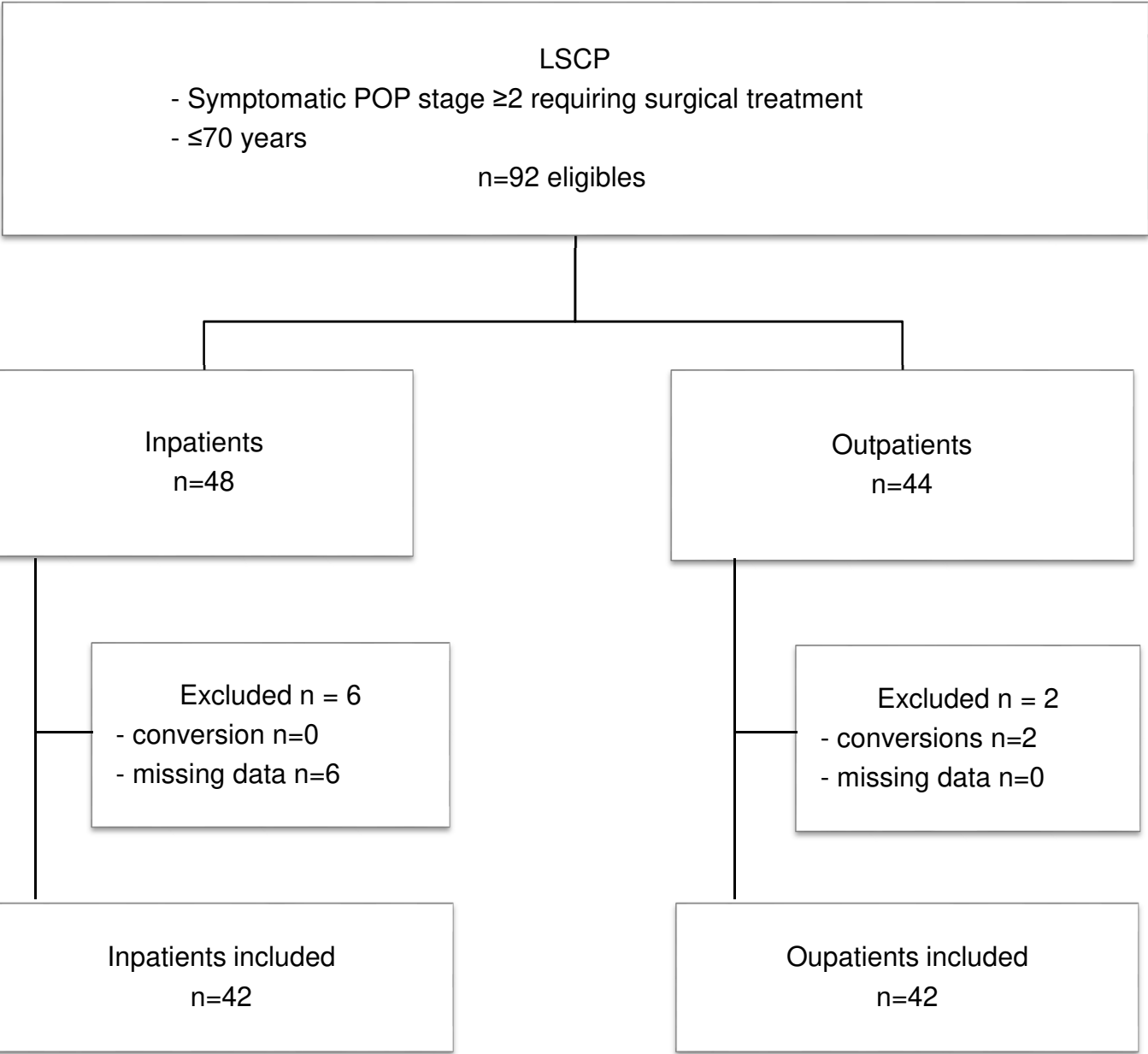


Figure 2 : Patients satisfaction

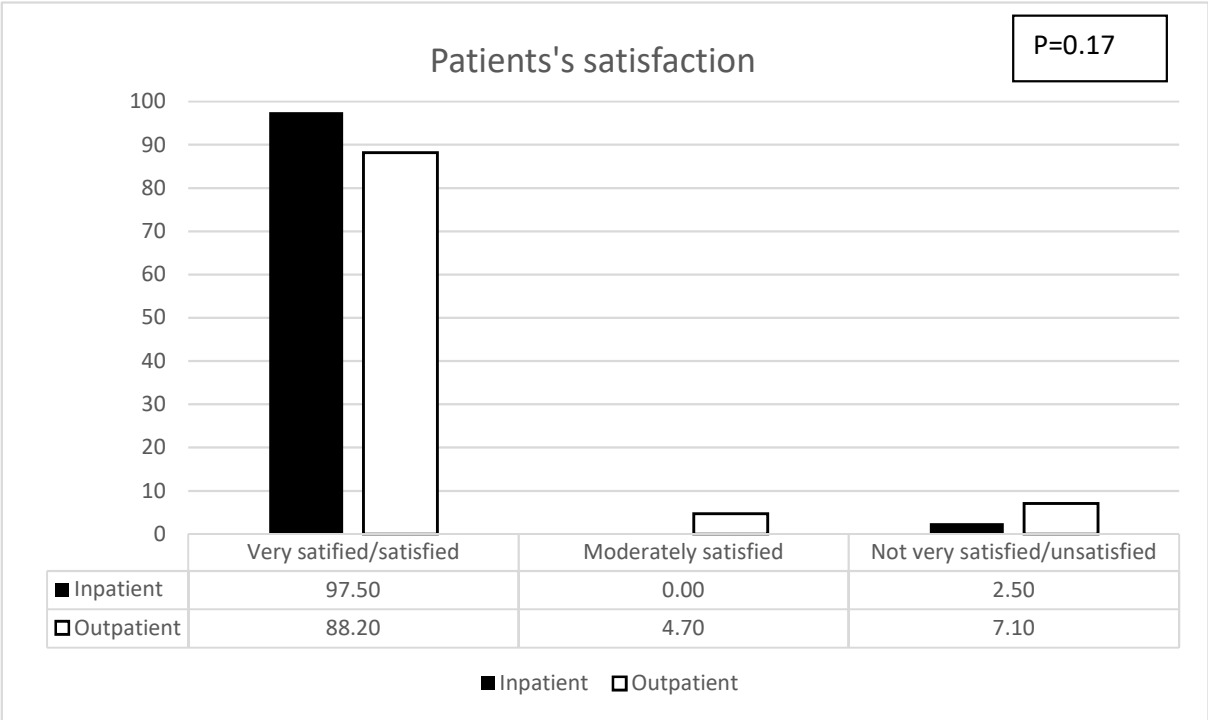


Table 1 : Patient characteristics

	Inpatients (n=42)		Outpatients (n=42)		p
Median pts age at surgery (IQR)	64	(59-67)	61	(55-68)	0.38
Median kg/m2 BMI (IQR)	25	(23-27)	25.6	(23.44-29)	0.18
Previous surgery (%)					0.38
No	18	(42.9)	22	(52.4)	
Yes	24	(57.1)	20	(47.6)	
Parity (%)					0.26
0	1	(0.03)	0	(0.0)	
1	8	(22.2)	5	(16.7)	
2	11	(30.6)	17	(56.7)	
≥3	16	(44.4)	8	(26.7)	
ASA					0.01
1	11	(26.8)	10	(23.8)	
2	21	(51.2)	31	(73.8)	
3	9	(22.0)	1	(2.4)	
Baden Walker classification					0.68
1	0		0		
2	16	(39)	19	(46.3)	
3	19	(46.3)	18	(43.9)	
4	6	(14.6)	4	(9.7)	
Median Following (months)	8,5	(2-24)	9,5	(2-24)	
Mesh (%)					0.15
Simple	32	(76.2)	37	(88.1)	
Double	10	(23.8)	5	(11.9)	
Complementary acts (%)	5	(12)	8	(19)	0.39
Oophrectomy	0		1		
Suburethral slings	3		5		
Oophorectomy+ Suburethral slings	2		1		
Median mins operative time	111	(95-118)	164	(126-189)	<0.01
Median pain D-1	0	(0-2)	1.5	(0-2)	0.06
Median length of stay	2 days	(1-3)	10.4 hours	(9,85-11.4)	

Table 2 : Unplanned visits and Postoperative complication from Clavien Dindo classification

	Group 1 Outpatient		Group 2 Inpatient		P
Unplanned visits (%)	7	(21)	9	(16.7)	0.58
Complications					0.19
Grade I (%)	15	(35.7)	21	(51.4)	
Nausea	0		1		
Dizziness/malaise	1		4		
Insomnia	5		4		
headache	1		4		
urinary troubles	5		5		
bleeding/hematoma	3		2		
Grade II (%)	3	(7.14)	3	(7.14)	
urinary tract infection	1		1		
skin infection	2		1		
bacterial colitis	0		1*		
Grade III (%)	1	(2.4)	1	(2.4)	
Small bowel obstruction	1*		1*		
* readmission					