

Le Fort Partial Colpocleisis: An Early and Feasible Option in Pelvic Organ Prolapse

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ABSTRACT

Objective: To evaluate the safety and effectiveness of Le Fort Partial Colpocleisis (LFPC) in the surgical treatment of pelvic organ prolapse (POP) and to determine the incidence of pop recurrence in postoperative follow-up.

Study Design: Cross-sectional study.

Place and Duration of Study: Ordu University Medical Faculty Training and Research Hospital, Ordu, Turkey, from June 2013 to November 2020.

Methodology: Sixty-four women (82.8% had uterine prolapsed) who had been operated as LFPC operations were included in the study. Patient's characteristics, medical comorbidities, postoperative outcomes, and operation complications were analysed. POP recurrence was evaluated during the postoperative follow-up period reaching 80 months.

Results: Eight patients (12.5%) had anti-incontinence surgery. Concomitant vaginal hysterectomy was performed in six patients (9.4%) and concomitant anti-incontinence surgery was performed in eight patients (12.5%). There were no serious intraoperative complications such as hematoma formation, and bladder / bowel injury. Postoperative complications were seen in a quarter of the patients (16/64) and most of them resolved spontaneously. Three of sixty-four patients (4.7%) were complicated with *de novo* urinary incontinence and all cases were healed without the need for treatment. In the current study, none of the patients reported POP recurrence on average over three years of follow-up.

Conclusion: There was a low frequency of intraoperative and postoperative complications in LFPC surgery. In addition, no POP recurrence was observed in any patient during long-term follow-up. Therefore, the LFPC procedure was described as a good surgical option in the selected elderly population with POP.

Key Words: Colpocleisis, Le fort partial colpocleisis, Pelvic organ prolapse.

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INTRODUCTION

Pelvic organ prolapse (POP) is a highly prevalent disorder and public health concern, affecting over 40% of women older than 50 years worldwide.¹ According to the Turkish Statistical Institute (TURKSTAT) data, the population over 65 has increased by 22.5% in the last 5 years and reached 9.5%. It is also predicted that the elderly population will triple in 40 years. Based on increasing elderly population data, it seems inevitable that women experiencing POP will increase over the coming decades.²

According to a study in which more than 10 million women between the ages of 18-89 were followed, the lifetime POP surgery rate was found to be 12.6%. The study also revealed that this ratio increases with age.³

Numerous surgical treatment options applied in POP surgery generally aim to restore functional vaginal anatomy. To classify briefly, the surgical management of POP involves either reconstructive or obliterative techniques. Although the gold standard approach still remains unclear. Major problem of reconstructive surgery is high recurrence rates of up to 50% in the long-term. Considering today's increasing life expectancy, the high recurrence rates of reconstructive methods pose a serious problem.⁴ On the contrary, obliterative surgery is associated with low recurrence rates. That is why obliterative surgery is well suited to sexually inactive elderly women with high surgical risk on account of multiple medical comorbidities.⁵

Le Fort partial colpocleisis (LFPC) is the most common obliterative vaginal surgery. The procedure involves the denudement of trapezoidal strips of the anterior and posterior walls of the vagina which are then sewn together. The creation of lateral vaginal canals formed after this suture allows the drainage of cervical secretions.⁶ A great number of modifications of this surgical technique have been described to date.⁷

The main goal of this study was to evaluate the safety and effectiveness of Le Fort Partial Colpocleisis (LFPC) in the surgical treatment of pelvic organ prolapse (POP) and to determine the incidence of pop recurrence in postoperative follow-up.

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METHODOLOGY

Between June 2013 and November 2020, sixty-four women who underwent LFPC surgery at Ordu University Medical Faculty were evaluated in this retrospective study. The Clinical Research Ethics Committee of Ordu University Medical Faculty approved the study (IRB Approval Number CREC 52/91120269-800-E.0581479).

Pelvic organ prolapse quantification (POP-Q) system was used to evaluate the stage of POP. Pelvic manual examination was performed in dorsolithotomy position and in order to measure the maximal extent of the prolapse, the patient was asked to strain during the examination. All the patients included in the study had high-stage (POP-Q stage 3 or 4) uterine or vaginal vault prolapse.

Preoperative papanicolaou cervical smear test and transvaginal ultrasonographic examination were routinely performed to all patients to exclude gynaecologic (especially cervical and uterine) pathologies. Endometrial sampling was performed in patients with suspected endometrial carcinomas. Written consent forms were obtained from all patients before the surgery, stating that there would be no vaginal sexual intercourse in the future, as well as the routine urogynaecological surgery consent form.

The standard preoperative protocol of the study centre includes genital and vaginal cleaning, single dose intravenous antibiotic therapy, thromboprophylaxis, and lower limb compression bandaging. Operations were enforced under general or regional anaesthesia.

LFPC procedure was performed using a standard technique shown in Figure 1. In some patients, the concomitant vaginal hysterectomy and/or transobturator tape operations were performed as indicated. In the authors' clinic high posterior perineorrhaphy and plication of the levator ani muscles were performed routinely for reinforcement of the pelvic floor. All surgical procedures were performed by three surgeons experienced in urogynaecology to eliminate the variability in surgical technique.

Patient characteristics and medical comorbidities postoperative outcomes and operation complications were obtained from detailed surgery and anaesthesia records. These records were presented in Table I. Due to the coronavirus pandemic, a face-to-face patient examination could not be performed to reveal objective POP recurrence. Instead, subjective POP recurrence was evaluated by telephone interviews in January 2021. In these interviews, the patients' subjective complaints due to pelvic organ prolapse (genital discomfort, pressure or fullness sensation in pelvic region, bulge of tissue that protrudes to the vaginal opening, urinary incontinence, difficulty starting the stream of urine, and need to push on the vagina to have bowel movement) were questioned.

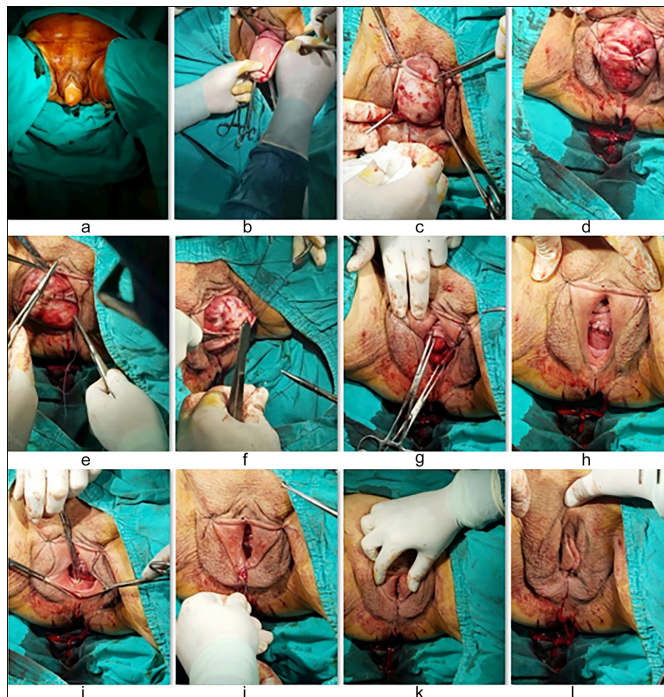


Figure 1: Operation images. (a) Preoperative image, (b) Dissection of anterior vaginal wall, (c) Dissection of posterior vaginal wall, (d) First lateral wall sutures in the two corners, (e) Left side wall closure, (f) Right side wall closure, (g) Closure of cranial and caudal last edges, (h) Completed internal vaginal wall suturing, (i) Posterior Perineorrhaphy, (j) Levator ani suturing, (k) Before completion of suturing, (l) Completed surgery.

RESULTS

The mean age of the patients was 72.2 years (60-90). Patients were elderly with a rate of 81.2%, while 23 patients (35.9%) were over 75 years old. All patients had medical comorbidity, and 79.7% of patients had two or more medical comorbidities. Hypertension was the most common medical comorbid disease with a rate of 87.5%, followed by cardiovascular disease and diabetes mellitus with a rate of 48.4%.

Out of the 64 patients, 53 women (82.8%) had uterine prolapse, and 11 women (17.2%) complained of vaginal vault prolapse. All patients were sexually inactive and had no desire of vaginal sexual intercourse in the future. Concomitant vaginal hysterectomy was performed in six patients (9.4%) owing to cervical smear abnormality or uterine pathology as a result of preoperative evaluation. Eight patients (12.5%) had concomitant anti-incontinence surgery with transobturator tape insertion. There were no serious intraoperative complications such as hematoma formation, and bladder or bowel injury.

Most of the operations were performed under regional anaesthesia (such as spinal, epidural, and combined) with a rate of 85.9%. The surgical procedure was performed under local anaesthesia in only one patient (1.6%) due to serious, multiple, and life-threatening medical comorbidities. The mean operating time was 70.9 ± 24.6 minutes ranging from 40 to 130. Only four patients (6.2%) had operation time longer than two hours. Haemoglobin levels had dropped more than three units in only three patients with the ratio of 4.7%. Foley catheter had remained for more than one day in only four patients (6.2%).

Table I: Patient characteristics and medical comorbidities (n=64).

Condition	Ratio
Age (year)	72.3 + 7.8 (60-90)
<65	12 (18.8%)
65-75	29 (45.3%)
>75	23 (35.9%)
Body mass index (kg/m ²)	22.3+3.7 (16-35.7)
Parity	5.8+2.5 (2-15)
≤4	24 (37.5%)
≥5	40 (62.5%)
Marital status	
Married	32 (50 %)
Widowed or divorced	32 (50 %)
Type of medical comorbidity	
Cardiovascular disease (including heart failure, angina, arrhythmia)	31 (48.4%)
Hypertension	56 (87.5%)
Diabetes mellitus	31 (48.4%)
Pulmonary disease (including tuberculosis, asthma)	19 (29.6%)
Thyroid dysfunction	11 (17.1%)
Liver failure	2 (3.1%)
Renal failure	2 (3.1%)
Neurologic disease (including stroke, subarachnoid haemorrhage, cerebrovascular attack)	2 (3.1%)
Neuropsychiatric disease (including depression, dementia)	2 (3.1%)
Number of medical comorbidity	
1	13 (20.3%)
2	25 (39.1%)
≥3	26 (40.6%)

The mean length of hospital stay was 2.7+1 in the range from two to six days. Thirty-three patients (51.6%) were discharged within two days after the surgery. The main factor that prolongs the length of hospital stay was the coexistence of multiple medical comorbidities. Nevertheless, solely eight women (12.5%) were admitted to the intensive care unit due to medical comorbid diseases.

Postoperative complications were seen in a quarter of the patients (16/64). Abdominal pain and urinary incontinence were the most common complications. Blood transfusion was needed in just one patient (1.6%). Delirium as the solely serious complication was observed in a 67 years old woman with a previous history of neuropsychiatric disease (1.6%). Postoperative outcomes and operation complications were summarised in Table II.

The mean postoperative length of follow-up was 36±21 (3-80) months. Six patients were excluded from the study due to various reasons. One patient had deceased, three patients had lost of follow-up and two women had declined to participate in the study. None of the patients reported POP recurrence.

DISCUSSION

Medical comorbidities are high in elderly women as a major concern in POP surgery. Similar to the literature, 78.7% of the present patients had two or more medical comorbidities. According to a study, authors had found hypertension as the most common comorbidity, similar to this study.⁸

This is the only study to the best of the authors' knowledge that was conducted in Turkey on LFPC surgery. The current study had both relatively large scale and long follow-up period up to 80 months after POP surgery.

Table II: Postoperative outcomes and complications (n=64).

Condition	Ratio
Surgical technique	
Alone colpopcleisis in vaginal vault prolapse	11 (17.2%)
Alone colpopcleisis in apical prolapse	47 (73.4%)
Colpopcleisis with concomitant hysterectomy	6 (9.4%)
Concomitant transobturatuar tape	8 (12.5%)
Anaesthesia type	
General	8 (12.5%)
Epidural	9 (14%)
Spinal	38 (59.4%)
Combined	8 (12.5%)
Local	1 (1.6 %)
Total operating time (minute)	70.5 + 24.7 (40-130)
<60	24 (37.5%)
60-89	24 (37.5%)
90-119	12 (18.8%)
≥120	4 (6.2%)
Mean operating time (minute)	
Alone colpopcleisis group	67 + 23.6 (40-130)
Concomitant vaginal hysterectomy group	100 + 23.7 (60-130)
Concomitant transobturatuar tape group	70 + 19.3 (40-100)
Haemoglobin drop (mg/dL)	1.4 + 1 (-1.1-3.5)
<1	22 (34.4%)
1-3	39 (60.9%)
>3	3 (4.7 %)
Foley catheter duration time (day)	+ 0.3 (1-3)
≤1	60 (93.8%)
>1	4 (6.2%)
Length of hospital stay (day)	2.8 + 1 (2-6)
2	33 (51.6%)
3-4	27 (42.2%)
≥5	4 (6.2%)
Admission to the intensive care unit	
Yes	8 (12.5%)
No	56 (87.5%)
Complications	16 (25%)
Voiding difficulty	1 (1.6%)
Urinary retention	1 (1.6%)
Urinary frequency	1 (1.6%)
Urinary incontinence	3 (4.7%)
Urinary tract infection	2 (3.1%)
Perineal wound infection	1 (1.6%)
Abdominal pain	3 (4.7%)
Constipation	2 (3.1%)
Need for transfusion	1 (1.6%)
Delirium	1 (1.6%)
Length of follow-up (mounth) (n=58)	36 + 21 (3-80)
<24	19 (32.8%)
24-48	21 (36.2%)
>48	18 (31%)

None of the patients had serious complications such as hematoma formation, and bladder or bowel injury. Reasonably seen minimal postoperative complications, mostly were transient urinary symptoms such as voiding difficulty, urinary retention and urinary frequency incontinence that resolved spontaneously. Besides, Zebede *et al.* found the intraoperative complication rate 1.6% and the postoperative complication rate as 15.1%. However, most of the complications that occur healed with simple treatments or spontaneously like this study.⁸

De novo urinary incontinence as also named occult stress urinary incontinence is a complication that can be seen after POP surgery with a ratio from 9.9% to 65% in previous reports.^{9,10} In this study, three of sixty-four patients (4.7%) were complicated with *de novo* urinary incontinence that was detected less than the litera-

ture. But all cases were healed without the need for treatment. In this preoperative practice, anti-incontinence surgery was performed on the patients who have occult urinary incontinence during the examination. So, the rate of urinary incontinence was found lower than in the literature.

No death due to surgery was observed among the sixty-four patients. Mortality rates are stated in some studies in the literature. However, deaths in most of these studies are due to non-surgical causes such as multi-system organ failure, urosepsis, pulmonary embolism, myocardial infarction, biliary cirrhosis, and lung cancer.^{7,8} The mortality rate related to surgery is approximately one in 400 cases.⁷

In this study, none of the patients reported POP recurrence on average of over three years follow-up. According to a review, the rate of POP recurrence after the LFPC was 4.2% that ranging from 0% to 25%.⁵

In various studies, postoperative condition and patient satisfaction rates vary between 87.5% and 100%.¹¹⁻¹⁴ Besides post-operative regret rates have been questioned in a few studies that range from 5% and 9.3%.^{14,15} It can be predicted that long time follow-up is limited in the elderly population owing to transportation issues and medical diseases. In various studies, follow-up rates vary between 42.6% and 87%.^{11,13,15,16} A high follow-up rate was achieved in this study (90.6%) likely to be due to telephonic communication and not requiring physical presence.

There are many factors that strengthen this study. Firstly, to eliminate the variability in surgical technique, all surgical procedures were performed by three surgeons experienced in urogynaecology. Secondly, the high follow-up rate of up-to 36 months that was longer than in most of the other reports. Finally, most of the patients (90.6%) were reached after surgery and applied questionnaire at a high rate not achieved in most studies.

On the other hand, this study has some limitations. Face-to-face interviews with patients could not be conducted due to the coronavirus pandemic, so that physical examination could not be carried out and only verbal information was obtained. Further prospective research with larger samples is needed to compare obliterative and reconstructive surgeries. An obliterative procedure for POP remains the least invasive and the most durable surgical repair available, so it should be presented as an early choice, not as the last resort.

CONCLUSION

LFPC, is a minimally invasive procedure with low intraoperative and postoperative complication risk. It can be considered a feasible, safe, and effective surgical treatment option for the management of POP in selected elderly women that have multiple comorbidities and do not need to conserve vaginal sexual intercourse.

ETHICAL APPROVAL:

Ethical approval of this study was obtained from the Clinical

Research Ethics Committee of Ordu University Medical Faculty (IRB Approval No. CREC 52/91120269-800-E.0581479), prior to initiation of the research work.

PATIENTS' CONSENT:

Verbal informed consent was obtained from each patient.

COMPETING INTEREST:

The authors declared no competing interest.

AUTHORS' CONTRIBUTION:

DDK: Writing original draft, conception of the work, methodology, analysis and interpretation of the data for the work.

SK: Investigation, data curation, supervision, writing review and editing.

All the authors critically reviewed the final version of the manuscript and approved it for publication.

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