

Comparison of Clinical Results of Lefort and Total Colpocleisis Operations Performed in Patients with Uterovaginal Pelvic Prolapse

 Hale Çetin Arslan¹,  Kadir Arslan²,  Ayşe Özge Şavklı¹

¹ University of Health Sciences, Kanuni Sultan Süleyman T&R Hospital, Clinic of Obstetrics and Gynecology, Istanbul, Türkiye

² University of Health Sciences, Kanuni Sultan Süleyman T&R Hospital, Clinic of Anesthesiology, Istanbul, Türkiye

Abstract

Aim: The aim of this study is to compare the clinical results and operation success of Lefort and total colpocleisis surgeries performed in patients with stage 2 and above pelvic organ prolapse (POP).

Methods: Patients who underwent Lefort and total colpocleisis surgery in our clinic between 2015 and 2022 were included in this retrospective cohort study. Demographic data of the patients, presence of relapse and de novo incontinence symptoms, postoperative complications and management, and clinical results were obtained from the hospital information system and patient files.

Results: A total of 40 patients were included in the study. The mean age of the patients was 75.7±6.7 years. At least one comorbid disease was present in 67.5% (n=27) of all population. The anatomical success rate was 95.4% in patients with total colpocleisis during the one-year follow-up and 94.4% in Lefort colpocleisis operations. The incidence of de novo stress urinary incontinence was 10% (n=4) in the one-year follow-up, and it was observed that the patients were treated with mini-sling operations.

Conclusions: Colpocleisis is a technique that can be safely applied in the elderly and sexually inactive population due to the low perioperative complications and recurrence rates and the anatomical success rate of 90% or more. It should be kept in mind that de novo incontinence may occur after colpocleisis surgery.

Keywords: Lefort colpocleisis, urinary incontinence, pelvic organ prolapse, total colpocleisis

1. Introduction

Pelvic organ prolapse (POP) is defined as the complete or partial protrusion of intrapelvic structures (uterus, rectum, bladder) due to insufficient pelvic floor support¹. POP is a common condition that affects approximately 40% of the female population and negatively affects the quality of life². The presence of severe POP, especially in advanced age, brings many gynecological problems, such as urinary incontinence, difficulty defecation, and sexual intercourse³. The reconstructive or obliterative surgical approaches are accepted in POP surgery⁴. The ideal treatment often depends on the patient's expectations and preferences. Reconstructive surgery used more frequently, aims to restore the normal vagina anatomy. However, colpocleisis is an obliterative method in which the vaginal canal is closed, and the pelvic organs are returned to the pelvis. Partly (LeFort) and complete (total) methods can perform it.

It can be recommended in patients who do not have an active sexual life and have comorbidities. For the first time in history, Lefort colpocleisis was applied in 1877 to a patient who wanted to avoid hysterectomy, in which the vaginal entrance was closed by suturing anterior and posterior vaginal epithelium without deep pelvic dissection^{4,5}. These operations also have disadvantages, such as the lack of sexual activity, development of urinary incontinence, and failure to take an endometrial biopsy because the cervical canal cannot be reached.

It is observed that the incidence of POP increases with age, reaching a high frequency, especially between the ages of 70-79⁶. The incidence of POP recurrence up to 36%, depending on risk factors, shows the importance of surgical techniques. In particular, surgery techniques such as ease of applicability, low complication, and recurrence rates are preferred, especially in the advanced age group⁷. In this study, we aimed to share our experience with the literature on the clinical results of our patients who underwent Lefort and Total Colpocleisis surgeries in our clinic.

2. Materials and methods

This retrospective observational study was initiated by the principles of the Declaration of Helsinki after the approval of the local

Corresponding Author: Hale Çetin Arslan

e-mail: halecetin90@gmail.com

Received: 29.08.2023, Accepted: 29.12.2023, Available Online Date: 31.12.2023

Cite this article as: Arslan HC, Arslan K, Şavklı AÖ. Comparison of Clinical Results of Lefort and Total Colpocleisis Operations Performed in Patients with Uterovaginal Pelvic Prolapse. J Cukurova Anesth Surg. 2023; 6(3): 494-7. doi:10.36516/jocass.1350219

Copyright © 2023 This is an open access article distributed under the terms of the Creative Commons Attribution-Non-Commercial-No Derivatives License 4.0 (CC-BY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.



Clinical Research Ethics Committee. (date:28.10.2022 number: 213). All patients who underwent Lefort colpocleisis and total colpocleisis operation at University of Health Sciences, Kanuni Sultan Süleyman T&R Hospital, between January 2015 and September 2022, and whose data could be accessed were included in the study. Exclusion criteria included pelvic inflammatory disease, suspected malignancy, previous pelvic surgery, medical unsuitability for surgery, insufficient information in the medical record, and loss of follow-up.

The pelvic examination used the Pelvic Organ Prolapse Quantification System (POP-Q) to stage prolapse. Demographic data, comorbidities, POP-Q stage, presence of incontinence, perioperative complications, cure, and recurrence rates were obtained from patient records. The study group was divided into patients who underwent Lefort (partial) colpocleisis and total colpocleisis.

In the colpocleisis technique, the anterior and posterior walls of the vagina are stitched together, shortening the length of the vaginal canal and reducing the size of the vaginal opening (introitus). Thus, the development of vaginal prolapse is prevented. The lateral vaginal epithelium is formed into a canal⁸. If a hysterectomy is performed simultaneously with the operation, it is called total colpocleisis.

The urodynamic test was applied to patients with incontinence complaints prior to surgery. In our clinic, the urodynamic test is performed by reducing the prolapse with a tampon and detecting the leak with the help of the pad test. Anti-incontinence surgery was performed in addition to the operation according to the patient's symptoms and urodynamic test. Antibiotic prophylaxis was administered to all patients pre-operatively (1-2 g intra-venous cefazolin). Additionally, we administered low molecular weight heparin prophylaxis to at-risk patients in the postoperative period.

2.1. Statistical analysis

SPSS 26.0 (SPSS Inc., Chicago, USA) program was used to analyze the data. Descriptive data are expressed as number of patients, percentage, mean and standard deviation, and distribution range. The conformity of the variables to the normal distribution was evaluated analytically (Shapiro-Wilks test) and visually (histogram). Independent sample t-test was used to analyze data with normal distribution among the groups, and the Mann-Whitney U test was used to analyze data that did not show normal distribution. The Chi-square and Fisher's exact tests were used to evaluate qualitative data. The statistical significance limit was accepted as $p < 0.05$

3. Results

Total colpocleisis (n=22) or Lefort colpocleisis (n=18) was performed on 40 patients with stage 2 or higher prolapse who applied to the clinic. The demographic characteristics and clinical results of the patients are summarized in Table 1. The mean age of all patients was 75.7 ± 6.7 years. The mean age of the patients who underwent total colpocleisis was 76.9 ± 5.1 years. The mean age of the Lefort colpocleisis group was 74.3 ± 8.2 years. The median parity of all population was 4 (1-13). All patients had a history of normal vaginal delivery. 52% (n=21) of the patients were sexually active. There was a history of additional disease in 65% (n=26) of the patients. There was no statistically significant difference between the groups in terms of demographic and clinical characteristics (age, gravidity, parity, sexual activity, and comorbidity). Pelvic examinations to determine POP-Q staging showed that three patients were stage 2, 16 were stage 3, and 21 were stage 4.

Perioperative and postoperative variables such as recurrence, anatomical success, and complications are shown in Table 2. Patients were routinely examined at 1, 6, and 12 months postoperatively. During the follow-up, symptomatic prolapse was observed to recur in one of the two patients in both groups after six

months and in the other within one year. Patients with recurrence were treated with anterior repair and recolpocleisis. Similarly, while the postoperative anatomical success rate was 95.4% in the total colpocleisis group, this rate was 94.4% in the Lefort colpocleisis group. Considering perioperative complications, hematoma, and bladder injury were detected in one patient in both groups. De novo stress urinary incontinence developed in four patients within one year, and it was decided to perform mini-sling operations at the next follow-ups. Postoperative urinary symptoms such as dysuria, urinary retention, increased frequency of voiding, and voiding difficulty were observed in four patients. Both medical treatment and spontaneous cure were provided for the symptoms. There is no difference between the groups regarding postoperative surgical success and perioperative complications. When the question 'Are you satisfied with the surgery in general' was asked of the patients, all of them responded positively.

Table 1

Demographic parameters of patients undergoing Total/Lefort Colpocleisis surgery.

	All population	Total Colpocleisis	Lefort Colpocleisis	p
Age (years)	75,7±6,7	76,9±5,1	74,3±8,2	0.245
Gravidity (median)	4 (1-14)	4,5 (3-14)	4 (1-13)	0.229
Parity (median)	4 (1-13)	4 (3-11)	3,5 (1-13)	0.180
Sexually active, n (%)	21 (52)	12 (54)	9 (50)	0.775
Comorbidity, n (%)	26(65)	14 (63,6)	12 (66,6)	0.919
Prolapse stage, n (%)				
II	3 (7,5)		3 (16,6)	
III	16 (40)	1 (4,5)	15 (83,4)	
IV	21 (52,5)	21 (95,5)		

Demographic parameters of patients undergoing Total/Lefort Colpocleisis surgery.

Table 2

Clinical outcomes of the study population

	Total Colpocleisis n(22)	Lefort Colpocleisis n(18)
Presence of prolapse recurrence	1 (4,5)	1 (5,5)
Post-operative anatomic success	21 (95,4)	17 (94,4)
Time to recurrence (months)	6%	12%
Treatment of recurrence		
Anterior repair	1(4,5)	
Re-colpocleisis		1(5,5)
De novo SUI	2(9)	2(11,1)
Perioperative complication		
Hematoma	1(4,5)	
Bladder injury		1(5,5)

Data are given as the number of patients; n (%), SUI: Stress urinary incontinence

4. Discussions

Colpocleisis always have an essential place among urogynecology surgeries. Because age is a significant risk factor, there has always been interest in this procedure's mid- and late-term outcomes in the geriatric population⁹. A study on morbidity and mortality rates related to urogynecology surgeries showed that the risk in the population over 80 years old is increased by 13.6% compared to the population under 60 years old¹⁰. Surgery is more difficult in elderly patients due to additional systemic diseases and the associated surgical risks. Partially easy, less invasive and less perioperative complications of colpocleisis surgeries make the surgery easier for the geriatric age group to tolerate.

Previous studies in the literature on clinical outcomes of the obliterative procedure, including its long-term effects on quality of life. Fitzgerald et al. found that the surgery success was 95%; the patients said they were either 'very satisfied' or 'satisfied' after the colpocleisis¹¹. In addition, Lefort colpocleisis was preferred as the first-line treatment in patients with advanced prolapse who were not sexually active, considering low regret and up to 90% anatomical success^{12,13}. This present study analyzed mid and late-term outcomes of Total colpocleisis procedures with Lefort; It was concluded that 95.4% in the Total group and 94.4% in the Lefort group were similar. It was found to be compatible with the studies performed.

Krissi et al. concluded that the risk of recurrence after colpocleisis is associated with parameters such as postoperative longer vaginal length and wider genital hiatus¹⁴. This means the risk increases if the vaginal introitus is incompletely closed. It has been shown that performing high perineoplasty in patients with large introitus reduces the risk. In another study, they also recommended levator ani plication performed to reduce the recurrence of postoperative rectal prolapse¹⁵. It has been shown that recurrence rates can reach 30% in reconstructive surgeries performed in patients with advanced prolapse¹⁶. Obliterative procedures should be more prominent in these patients. In our clinic, obliterative operations are preferred more than reconstructive operations because of the low recurrence rates, especially in advanced prolapse cases in the elderly age group. In our cohort, symptomatic recurrence was observed in only two patients; treated with anterior repair and recolpocleisis. Modified recolpocleisis is recommended to treat recurrent pelvic organ prolapse after colpocleisis¹⁷.

Sexual function and body image perception are the leading factors that significantly affect patient satisfaction after Colpocleisis. There has been some concern that obliterative procedures may adversely affect vaginal function, leading to patient dissatisfaction^{18,19}. In the cohort study comparing the patient groups who underwent reconstructive vaginal approach and obliterative vaginal approach, it was concluded that there was an improvement in similar quality of life, and there was no adverse effect on body image perception¹⁸. We did not experience any regrets about the operation in any of our patients.

Since cervical and endometrial sampling is not possible after colpocleisis, a hysterectomy is usually performed simultaneously with colpocleisis in patients with malignancy risk. In this way, some studies argue that the risk of developing pyometra is reduced²⁰. In cases where the uterus will be preserved, malignancy should be excluded with preoperative cervical and endometrial sampling. Conversely, a retrospective study showed a significantly longer operative time and higher rates of pyometra and transfusion for colpocleisis with concomitant hysterectomy compared with colpocleisis without hysterectomy, and surgical success was similar¹². In addition, it is thought that vaginal hysterectomy performed in patients whose malignancy risk has been excluded

may reduce the power of vaginal tissue to close the vagina and repair sagging, increasing the likelihood of complications.

It is recommended that the urinary incontinence complaints of the patients be questioned well in the preoperative period. If necessary, urodynamic tests should be used to determine the type of incontinence. The patient may benefit from mid-urethral sling treatments in urodynamic stress urinary incontinence. Overactive bladder symptoms may increase with age. In the postoperative period, the patient should be informed that these complaints may continue and medical treatment is required. In addition, de novo stress urinary incontinence of 8% to 30% has been reported in patients who underwent colpocleisis surgery in the literature²¹. In a study conducted on 95 patients who underwent Lefort colpocleisis, it was observed that 89% of de novo urinary symptoms (urinary incontinence, urinary retention, difficulty voiding) developed spontaneously over time¹⁵. In the present study, de novo stress incontinence occurred in four patients and was treated with a mini-sling operation. In addition, spontaneous recovery was observed in postoperative urinary complaints (dysuria, urinary retention, increased frequency of voiding, difficulty voiding) in four patients.

The strengths of this study are that we have a good sample size to compare the results of both operations, that their operations were performed with similar techniques in the same clinic, and that we follow up postoperatively for mid-term clinical outcomes. The study's limitation is that no internationally validated and reliable survey was used to evaluate postoperative success and patient satisfaction.

5. Conclusions

Colpocleisis is a valuable POP surgery for patients who do not want to continue their sexual activity and cannot tolerate extended vaginal reconstructive operations. It is also highly effective in recurrent prolapses, especially after previous unsuccessful reconstructive surgery. Loss of coital function rarely causes regret in patients. Based on studies on the clinical results of colpocleisis operations, we believe it is effective in treating recurrent prolapse in patients with its feasibility, high satisfaction, and low recurrence rates. In our study, the presence of recurrence, anatomical success rates, de novo incontinence rates, and perioperative complications of Lefort or total colpocleisis operations were found to be similar. Although we believe that the results of our study will contribute to the literature, more prospective randomized studies are needed in the future to see the long-term effects of these operations.

Statement of ethics

This study was conducted in accordance with the ethical principles of the Declaration of Helsinki and was approved by University of Health Sciences, Kanuni Sultan Süleyman T&R Hospital 2022-213.

Conflict of interest statement

Author declare that they have no financial conflict of interest with regard to the content of this report.

Funding source

The authors received no financial support for the research, authorship, and/or publication of this article.

References

- Nawrot J, Humaj-Grysztar M, Gniadek A, et al. Quality of life of women with postmenopausal pelvic organ prolapse. *Pielęgniarstwo XXI wieku / Nursing in the 21st Century*. 2017; 16: 17-23. <https://doi.org/10.1515/pielxxiw-2017-0031>

2. Nygaard I, Barber MD, Burgio KL, et al. Prevalence of symptomatic pelvic floor disorders in US women. *The Journal of the American Medical Association*. 2008; 300: 1311-16.
<https://doi.org/10.1001/jama.300.11.1311>
3. Demirci N, Ataman H, Aba A, et al. Pelvik organ prolapsusu/üriner inkontinans ile ilişkili şikayetlerin kadınların cinsel fonksiyonuna etkisi. *Zeynep Kamil Tıp Bülteni*. 2013; 44: 58-64.
4. Abbasy S, Kenton K. Obliterative procedures for pelvic organ prolapse. *Clin Obstet Gynecol*. 2010; 53: 86-98.
<https://doi.org/10.1097/GRF.0b013e3181cd4252>
5. Güner H, Güler İ. Transvaginal approaches to uterine and vault prolapse. *Türkiye Klinikleri J Surg Med Sci*. 2007; 3: 70-6.
6. Luber KM, Boero S, Choe JY. The demographics of pelvic floor disorders: current observations and future projections. *American Journal of Obstetrics and Gynecology*. 2001; 184: 1496-501.
<https://doi.org/10.1067/mob.2001.114868>
7. Güngör UF, Alper N, Ayyıldız EH, et al. Pelvik Organ Prolapsus Cerrahisinde Lefort Kolpocleizis-İstanbul Tıp Fakültesi Deneyimi. *J Clin Obstet Gynecol*. 2013; 23: 76-9.
8. FitzGerald MP, Richter HE, Siddique S, et al. Ann Weber for the pelvic floor disorders network, colpocleisis: a review. *Int Urogynecol J*. 2006; 17: 261-71.
<https://doi.org/10.1007/s00192-005-1339-9>
9. Tinelli A, Malvasi A, Rahimi S, et al. Age-related pelvic floor modifications and prolapse risk factors in postmenopausal women. *Menopause*. 2010; 17: 204-12.
<https://doi.org/10.1097/gme.0b013e3181b0c2ae>
10. Sung VW, Weitzen S, Sokol ER, et al. Effect of patient age on increasing morbidity and mortality following urogynecologic surgery. *Am J Obstet Gynecol*. 2006; 194: 1411-17.
<https://doi.org/10.1016/j.ajog.2006.01.050>
11. Fitzgerald MP, Richter HE, Bradley CS, et al. Pelvic support, pelvic symptoms, and patient satisfaction after colpocleisis. *Int Urogynecol J Pelvic Floor Dysfunct*. 2008; 19: 1603-09.
<https://doi.org/10.1007/s00192-008-0696-6>
12. Hullfish KL, Bovbjerg VE, Steers WD. Colpocleisis for pelvic organ prolapse: patient goals, quality of life, and satisfaction. *Obstet Gynecol*. 2007; 110: 341-5.
<https://doi.org/10.1097/01.AOG.0000270156.71320.de>
13. Zebede S, Smith AL, Plowright LN, et al. Obliterative LeFort colpocleisis in a large group of elderly women. *Obstet Gynecol*. 2013; 121: 279-84.
<https://doi.org/10.1097/AOG.0b013e31827d8fdb>
14. Krissi H, Aviram A, Eitan R, et al. Risk factors for recurrence after Le Fort colpocleisis for severe pelvic organ prolapse in elderly women. *Int J Surg*. 2015; 20: 75-9.
<https://doi.org/10.1016/j.ijsu.2015.06.026>
15. Park JY, Han SJ, Kim JH, et al. Le Fort partial colpocleisis as an effective treatment option for advanced apical prolapse in elderly women, Taiwan. *J Obstet Gynecol*. 2019; 58: 206-11.
<https://doi.org/10.1016/j.tjog.2019.01.007>
16. Olsen A, Smith V, Bergstrom J, et al. Epidemiology of surgically managed pelvic organ prolapse and urinary incontinence. *Obstet Gynecol*. 1997; 89: 501-06.
[https://doi.org/10.1016/S0029-7844\(97\)00058-6](https://doi.org/10.1016/S0029-7844(97)00058-6)
17. Hoskey KA, Shippey SH, Handa VL. Surgical repair of recurrent prolapse after LeFort colpocleisis. *Int Urogynecol J*. 2012; 23: 371-3.
<https://doi.org/10.1007/s00192-011-1541-x>
18. Barber MD, Amundsen CL, Paraiso MFR, et al. Quality of life after surgery for genital prolapse in elderly women: obliterative and reconstructive surgery. *Int Urogynecol J*. 2007; 18: 799-806.
<https://doi.org/10.1007/s00192-006-0240-5>
19. Jelovsek J, Barber MD. Advanced pelvic organ prolapse decreases body image and quality of life. *Am J Obstet Gynecol*. 2006; 194: 1455-61.
<https://doi.org/10.1016/j.ajog.2006.01.060>
20. Kohli N, Sze E, Karram M. Pyometra following Le Fort colpocleisis. *Int Urogynecol J Pelvic Floor Dysfunct*. 1996; 7: 264-6.
<https://doi.org/10.1007/BF01901249>
21. Abbasy S, Lowenstein L, Pham T, et al. Urinary retention is uncommon after colpocleisis with concomitant mid-urethral sling. *Int Urogynecol J Pelvic Floor Dysfunct*. 2009; 20: 213-6.
<https://doi.org/10.1007/s00192-008-0751-3>