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Colpocleisis in the surgical treatment of pelvic organ prolapse: clinical experience

Pelvik organ sarkmasının cerrahi tedavisinde kolpokleizis: klinik deneyim

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ABSTRACT

Aim: The objective of this study was to present the clinical experience with colpocleisis by evaluating patient characteristics and long-term follow-up data.

Materials and Methods: This is a retrospective cohort study evaluating patients who underwent obliterative surgery for pelvic organ prolapse (POP) between 2010 and 2017. Patients who underwent colpocleisis without hysterectomy (C) (n=68) and colpocleisis of vaginal vault (CVV) (n=22) were included in this study.

Results: The mean age of the study population was 72.7 years (range 55-89). The majority of the patients underwent colpocleisis as their primary surgical procedure for POP, as only 5.6% of the study group had a history of previous prolapse surgery. The mean follow-up duration was 49.5 months (range 1.5-109). Patient satisfaction with the surgery was high, with 98.9% of patients expressing they were “very satisfied” and 1.1% “satisfied”. There were two cases of recurrence (2.2%), and both were in the C group. One patient (1.1%) reported regret after surgery due to her husband's remorse about choosing an obliterative procedure. The recurrence rates, patient satisfaction, and regret were comparable between C and CVV groups.

Conclusion: Colpocleisis is a viable option for the surgical treatment of POP, offering a high rate of success and patient satisfaction in long-term. Despite being an obliterative procedure, colpocleisis has acceptance as the primary surgical procedure by patients regardless of their marital status, and regret rate after surgery is low. Therefore, colpocleisis should be thoroughly discussed and included in the preoperative counseling and surgical planning of all patients with POP.

Keywords: Colpocleisis, pelvic organ prolapse, recurrence, regret, satisfaction.

ÖZ

Amaç: *Bu çalışmanın amacı, hasta özelliklerini ve uzun süreli takip verilerini analiz ederek kolpokleizis ile ilgili klinik deneyimi sunmaktır.*

Gereç ve Yöntem: *Mevcut çalışma, 2010 ve 2017 yılları arasında pelvik organ prolapsusu (POP) için obliteratif cerrahi uygulanan hastaları değerlendiren retrospektif bir kohort çalışmasıdır. Histerektomisiz kolpokleizis (C) (n=68) ve vajinal kaf kolpokleizisi (CVV) (n=22) uygulanan hastalar bu çalışmaya dahil edilmiştir.*

Bulgular: *Çalışma popülasyonunun ortalama yaşı 72.7 idi (aralık 55-89). Çalışma grubunun sadece %5,6'sında daha önce prolapsus cerrahisi öyküsü olup kolpokleizis hastaların çoğuna POP için birincil cerrahi prosedür olarak uygulandı. Ortalama takip süresi 49.5 aydı (aralık 1.5-109).*

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Ameliyattan hasta memnuniyeti yüksek olup hastaların %98.9'u "çok memnun" ve %1.1'i "memnun" olduklarını belirttiler. İki nüks vakası (%2.2) vardı ve ikisi de C grubundaydı. Bir hasta (%1.1) ameliyattan sonra pişmanlık bildirmiş olup bu kocasının obliteratif bir prosedür seçiminden dolayı pişmanlığından kaynaklıydı. Nüks oranları, hasta memnuniyeti ve pişmanlık, C ve CVV grupları arasında karşılaştırılabilirdi.

Sonuç: *Kolpokleizis, POP'un cerrahi tedavisi için uygun bir seçenek olup uzun dönemde yüksek başarı oranı ve hasta memnuniyeti sunar. Kolpokleizis, obliteratif bir işlem olmasına rağmen, hastalar tarafından medeni durumlarından bağımsız olarak birincil cerrahi işlem olarak kabul görmektedir ve cerrahi sonrası sonrası pişmanlık oranı düşüktür. Bu nedenle, kolpokleizis, POP'lu tüm hastaların preoperatif danışmanlığında ve cerrahi planlamasında kapsamlı bir şekilde tartışılmalı ve dahil edilmelidir.*

Anahtar Sözcükler: *Kolpokleizis, memnuniyet, pelvik organ sarkması, pişmanlık, rekürrens.*

INTRODUCTION

Pelvic organ prolapse (POP) is the protrusion of pelvic organs into or beyond the vaginal canal. POP affects approximately 40% of women over the age of 50, and the lifetime risk of undergoing POP surgery is estimated to be 12.6% (1). Due to the aging population globally, the prevalence of POP is expected to rise, as the incidence of POP increases with age (2).

Patients with symptomatic POP experience everyday discomfort, resulting in a decline in quality of life (1, 2). Management of POP can be conservative, such as pelvic floor muscle training or pessary use, or surgical. The choice of treatment is determined by the severity of prolapse and associated symptoms, as well as the patient's activity and overall health status. Patients who decline or cannot benefit from conservative measures may opt for surgery. Surgical treatment of POP can be performed by either reconstructive or obliterative procedures. The capacity to maintain coital function after surgery is the primary distinction between reconstructive and obliterative procedures.

Obliterative surgery, commonly referred to as colpocleisis, aims surgically close the vaginal canal. First described in the nineteenth century, colpocleisis is primarily reserved for frail or elderly women with medical comorbidities who are no longer sexually active (2), as it is associated with shorter operating times, lower blood loss and less morbidity compared to reconstructive procedures (1, 3). A recent review suggests that colpocleisis and obliterative techniques are becoming increasingly popular, and the number of publications on the topic has increased in recent years (2). There are publications reporting on Turkish clinicians' experiences with colpocleisis (4, 5). However, the data regarding success, patient satisfaction, and regret on long-term follow-up are limited in these studies. The objective of this study was to present the clinical experience with colpocleisis by analyzing patient characteristics and long-term follow-up data.

MATERIALS and METHODS

This is a retrospective cohort study of patients who underwent colpocleisis between 2010 and 2017 at the Department of Obstetrics and Gynecology, Ege University School of Medicine, Izmir, Türkiye. After receiving institutional review board approval (20-1T/43, 09-01-2020), we identified all patients who underwent colpocleisis and included cases who had colpocleisis without hysterectomy (C) or colpocleisis of vaginal vault (CVV), according to the terminology recommended by the American Urogynecologic Society (AUGS) and the International Urogynecological Association (IUGA) (6). Starting from 2017, patients have favored colpocleisis with hysterectomy versus C. Since the follow-up data regarding colpocleisis with hysterectomy was limited, the time span of the study was determined as 2010-2017 to cover the period before the change in clinical practice. Patients who underwent colpocleisis with hysterectomy during the study period were excluded due to small number of patients (n=2) treated with this approach.

Electronical and paper medical reports were reviewed to extract perioperative and follow-up data. Patient characteristics included age, body mass index, prolapse stage, marital status, gravida, para, American Society of Anesthesiologists (ASA) class, and history of previous prolapse surgery. Routine postoperative follow-up was scheduled at 6 weeks, 3 months, 6 months, 1 year, and yearly afterwards. Recurrence was defined as having a symptomatic prolapse or asymptomatic prolapse beyond hymen detected at follow-up

examinations. At each follow-up visit, patients were inquired about their satisfaction with the surgery. Patients were also inquired about whether they or their partners had any regrets about having undergone an obliterative procedure.

The surgical technique for C included dissection of the vaginal epithelium from the underlying fibromuscular tissue in rectangular areas anteriorly and posteriorly. Lateral tunnels were formed by placing sutures on the remaining vaginal epithelium bilaterally. Then the denuded rectangular portions were sewn together in multiple layers. During CVV, vaginal epithelium was completely dissected from the underlying fibromuscular tissue instead of rectangular portions. The denuded fibromuscular tissue was then sewn together in multiple layers, similarly to C.

Mean, standard deviation, and median (range) were used to present continuous variables. Categorical variables were presented as numbers (percentage). In the analysis of continuous variables, the Mann Whitney U test or Student t-test was used, as appropriate. The Fisher's exact test was used to analyze categorical variables. Statistical significance was defined as a P-value of less than.05. For all analyses, GraphPad Prism version 9 for macOS was used (GraphPad Software, La Jolla California, USA).

RESULTS

A total of 90 patients who underwent an obliterative procedure were included in this study. Twenty-two patients (24.4%) underwent CVV, and 68 patients (75.6%) underwent C. Patient characteristics were summarized in Table-1. The mean age of the study population was 72.7 years (range 55-89). The majority of the patients had Stage 3 (41.1%) or Stage 4 (51.1%) prolapse. Nearly half of the study group were married (46.7%), while the rest were widowed (51.1%) or single (2.2%).

Table-1. Patient characteristics.

	All patients (n=90)		**Colpocleisis of vaginal vault (n=22)**		**Colpocleisis without hysterectomy (n=68)**		
	Mean ± SD	**Median (Range)**	**Mean ± SD**	**Median (Range)**	**Mean ± SD**	**Median (Range)**	**p-value**
Age, years	72.7 ± 5.9	72 (55 - 89)	73.5 ± 4.9	73 (64-83)	72.5 ± 6.3	72 (55 - 89)	0.498
BMI, kg/m2	28.4 ± 4.8	27.7 (16.7 - 41.3)	29.2 ± 4.1	27.4 (23.4-41.3)	28.2 ± 5	27.8 (16.7 - 40.4)	0.398
Gravida	4.7 ± 2.7	4 (0-15)	4.3 ± 2.7	4 (1-10)	4.8 ± 2.7	4 (0-15)	0.452
Para	3.6 ± 2.1	3 (0-11)	3.5 ± 2.5	3 (1-8)	3.6 ± 2.0	3 (0-11)	0.849
ASA class	**n**	**%**	**n**	**%**	**n**	**%**	
1 - 2	67	74.4%	18	81,8%	49	72.1%	0.415
3 - 4	23	25.6%	4	18,2%	19	27.9%	
Prolapse stage	**n**	**%**	**n**	**%**	**n**	**%**	
Stage 2	7	7.8%	2	9,1%	5	7.4%	> 0.999
Stage 3	37	41.1%	8	36.4%	29	42.6%	0.629
Stage 4	46	51.1%	12	54.5%	34	50.0%	0.808
Marital status	**n**	**%**	**n**	**%**	**n**	**%**	
Married	42	46.7%	11	50.0%	31	45.6%	0.808
Widowed	46	51.1%	11	50.0%	35	51.5%	> 0.999
Single	2	2.2%	0	0.0%	2	2.9%	> 0.999
Prior prolapse surgery	5	5.6%	1	4.5%	4	5.9%	> 0.999

BMI = body mass index, **ASA** = American Society of Anesthesiologists

[a] Mann Whitney U test or Student t-test

Table-2. Follow-up data.

	All patients (n=90)			Colpocleisis of vaginal vault (n=22)			Colpocleisis without hysterectomy (n=68)			
	Mean ± SD		**Median (Range)**	**Mean ± SD**		**Median (Range)**	**Mean ± SD**		**Median (Range)**	
Follow-up, months	49.6 ± 31.2		49.5 (1.5-109)	49.5 ± 32		50.5 (1.5-109)	50.1 ± 29.3		47 (1.5 - 93)	
Satisfaction	**n**		**%**	**n**		**%**	**n**		**%**	**p-value [a]**
Very satisfied	89		98,9%	22		100,0%	67		98,5%	> 0.999
Satisfied	1		1,1%	0		0,0%	1		1,5%	> 0.999
Recurrence	2		2,2%	0		0,0%	2		2,9%	> 0.999
Regret	1		1,1%	0		0,0%	1		1,5%	> 0.999

[a] The Fisher's exact test

The rate of patients with ASA Class 1-2 was 74.4%, and the rate of patients with ASA Class 3-4 was 25.6%. Most of the patients received their primary surgical treatment for POP, with only 5.6% (n=5) having a history of prolapse surgery. Patient characteristics were comparable between the groups (p values presented in Table-1).

Follow-up data were presented in Table-2. All patients attended the first follow-up visit scheduled 6 weeks after surgery and the median follow-up was 49.6 months (range 1.5-109). The patient satisfaction with the procedure was very high, with 98.9% (n=89) reporting they were “very satisfied” and 1.1% (n=1) “satisfied”. The satisfaction rate was comparable in both groups (p > 0.999). A single case (1.1%) of regret regarding obliterative surgery was documented, in which the patient expressed her husband's remorse about the procedure. There were 2 recurrences (2.2%) in the whole study population. While both were in the C group, there was no significant difference for the rate of recurrence between the groups (p > 0.999). Recurrence occurred in the early period in both cases, before the first follow-up visit, and managed by performing repeat obliterative procedures.

DISCUSSION

Traditionally, colpocleisis is considered a suitable surgery for frail elderly women. The loss of coital function is one of the reasons for this consideration. Another reason is that colpocleisis is an effective, safe, and minimally invasive option. However, colpocleisis remains a viable option for women who do not fall into the frail elderly category. A survey study that included 322 doctors in the USA reported that 41% of respondents had no age cutoff for offering colpocleisis, and only 18% considered colpocleisis reserved for high-risk surgical candidates with multiple morbidities. The mean age in the present study (72.7 years) was similar to the mean ages of 70 and 75 years reported by earlier studies from Türkiye (4, 5), even though it was lower than US studies reporting mean ages of between 79 and 81 years (3). In the present study, most of the patients (74.4%) had ASA class 1-2. Almost half of the participants (46.7%) were married, which was lower than the reported rates of 52% and 63% in previous Turkish studies. Additionally, the majority of the women (94.4%) included in the present study underwent colpocleisis as their primary surgical procedure for POP. The findings of the present study combined with previous studies from Türkiye suggest that colpocleisis meets the needs of many Turkish women regardless of their marital status, even though they did not fall into the frail elderly category.

The high success rate, patient satisfaction and low regret rate reported in the literature (1,7–9) were supported by this study. With a mean follow-up of 49.6 months, there were two (2.2%) recurrent cases. The recurrences were due to early detachment of sutures within the six weeks after surgery in both cases and were managed by repeat colpocleisis procedures. Apart from two early recurrent cases, there were no POP recurrences on long-term follow-up. Regret was present in one case (1.1%), which was related to the patient's partner rather than the patient herself.

The role of concomitant hysterectomy at the time of colpocleisis is still unclear (1). While the addition of hysterectomy eliminates the future risk for endometrial or cervical cancer and pyometra formation, a study using decision analysis suggest that colpocleisis with hysterectomy may be justified in patients younger than 40 years of age (10). In the present study, there were no incidents like endometrial or cervical cancer or pyometra formation in the follow-up patients who underwent C. The comparison of follow-up data of patients who underwent C and CVV did not reveal difference in terms of satisfaction, recurrence, and regret (Table-2). However, although most of the women who did not have a hysterectomy underwent C during the study period, the option of colpocleisis with a hysterectomy should not be completely ruled out. The choice between C and colpocleisis with hysterectomy must be individualized upon discussing the pros and cons of both options with the patient.

This study has the same drawbacks that any retrospective study inevitably does. Additionally, this study did not report on long-term pelvic floor symptoms using questionnaires. Strengths of our study include the number of patients and follow-up duration, which provides valuable data, especially for surgeons from Türkiye.

CONCLUSION

Colpocleisis is a viable option for the surgical treatment of POP, offering a high rate of success and patient satisfaction in long-term follow-up. Even though the coital function is lost due to the obliterative nature of the procedure, colpocleisis has acceptance as the primary surgical procedure by patients regardless of their marital status, and regret rate after surgery is low. These facts suggest that colpocleisis meets the needs of many women, especially elderly; therefore, it should be thoroughly discussed and included in the preoperative counseling and surgical planning of all patients with POP.

Conflict of interest: The author declares that there is no conflict of interest.

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