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PREVALENCE OF ENDOMETRIOSIS IN WOMEN UNDERGOING SURGERY OF VARIOUS GYNECOLOGICAL INDICATIONS

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ABSTRACT

OBJECTIVE: *To determine the prevalence of endometriosis in women undergoing surgery of various gynecological indications.*

METHODOLOGY: *This descriptive study included 170 women aged 18–50 years who underwent gynecological surgeries at Liaquat National Hospital from November 2022 to June 2024. Surgeries included hysterectomy, oophorectomy, myomectomy, and laparoscopic adhesiolysis. Endometriosis was identified intraoperatively by the presence of endometrial-like tissue outside the uterus and confirmed histopathologically. Data on demographics, surgical indications, and procedures were analyzed using SPSS version 26.0, with significance set at $p < 0.05$.*

RESULTS: *The mean age of the participants was noted as 34.44 ± 6.43 years. Among these, endometriosis was observed in 16.5% of cases. Chronic pelvic pain was present in 37.5% of endometriosis cases, while infertility was noted in 15%. Diagnostic laparoscopy (16.3%) and ovarian cystectomy (22.2%) were the most common procedures performed in patients with endometriosis.*

CONCLUSION: *It is to be concluded that women who underwent gynecological surgeries, endometriosis was commonly observed with symptoms such as chronic pelvic pain and infertility. Routine procedures included diagnostic laparoscopy and cystectomy for ovarian cyst. Complete care of patients can only be provided if subclinical endometriosis is also identified and treated by routine laparoscopic evaluation.*

Keywords: *Endometriosis, Myomectomy, Hysterectomy, Cesarean section*

INTRODUCTION

The presence of endometriosis is an important factor affecting surgical outcomes and complications in women undergoing gynecological procedures. It is well established that endometriosis poses a challenge in surgical management of several gynecologic diseases, which have implications on both short and long-term outcomes. For example, Saraswat et al. emphasizes, as endometriosis is most commonly diagnosed in women of reproductive age, and its most significant risk is future gynecological surgeries and later-life cancer, the long-term impact of the disorder [1]. In addition, Singh et al. conducted a systematic review demonstrating that, although surgical treatment may promise better outcomes in some cases, the effects may be heterogeneous, especially regarding fertility and symptom control, which is complicated by the nature of endometriosis itself [2].

The often subtle and variable presentations of endometriosis make the diagnosis challenging and the condition is most often not evident until surgically revealed. According to D`Artio et al., preconceptions regarding endometriosis can postpone diagnosis, resulting in inappropriate management strategies and poor surgical outcomes [3]. This is particularly relevant in managing endometrial implants because their complexity and location can make surgical procedures like laparoscopy quite complicated. Vannuccini et al. highlight that careful preoperative assessments are needed so appropriate management strategies can be adjusted for each patient [4].

Integral management approach for women with endometriosis under surgery Grigoriadis et al. found that surgical outcomes of pregnancy can be enhanced by careful microsurgery, but the successful rates are dramatically reduce with the degree of seriousness of endometriosis [5]. In addition, Ferrier et al. highlight the importance of a multidisciplinary approach and the potential benefit of involvement in surgical and medical management before and after surgical intervention [6]. Further planning is also complicated with complications such as obstetric results; Borisova et al. presented an increased risk for surgical pregnancies in women with endometriosis [7].

Quality of life outcomes after surgery and patient informed results are impaired by pre -existing disorders. Companur et al. found that if pain is solved effectively during the surgery, postoperative psychosocial outcome is better [8]. The finding of Grundström et al. illustrates the importance of aligning patient expectations and surgical reality because chronic pelvic pain constantly affects the quality of life for many women. [9].

Furthermore, the propagation of endometriosis at the time of surgery is a well-known issue. Schippert et al. described that different surgical approaches and disease severity affect the recurrence rate, and the patients must be monitored closely, as they may require repeat procedures [10]. Moreover, an important perspective regarding surgical techniques in pain relief and symptom relief should not be overlooked and the work of Sandström et al. attempts to elucidate on the effectiveness of a complete vs partial vs hysterectomy on endometriosis-related pain [11].

Endometriosis greatly affects surgical results through its negative effects on the surgical management and quality of life [12,13]. By implementing careful diagnostic strategies and tailored therapeutic regimens, clinicians may enhance surgical outcomes and decrease complications from this complicated disease [14]. Research, especially interdisciplinary, both morphological and functional in nature, have a critical role to play in the future in bettering outcomes for women with disease-charge endometriosis. Need of fine-tuning surgical strategies for successful interventions and improved long-term outcomes among these group of patients is necessitate.

METHODOLOGY

A descriptive study of 170 women presenting to Liaquat National Hospital, undergoing gynecological surgeries, between November 2022 till June 2024. The study included women 18 and 50 years of age who had undergone hysterectomy, oophorectomy or salpingoophorectomy, myomectomy or laparoscopic adhesiolysis. Patients with gynecological diseases, chronic pelvic pain, dysmenorrhea, dyspareunia, infertility, ovarian cyst, fibroids, or pelvic adhesion were also recruited. Eligible participants were women with a history of pelvic malignancy (e.g., ovarian cancer) or any condition mimicking endometriosis (e.g., pelvic inflammatory disease) and patients with major commorbidities making surgery a contraindication included uncontrolled cardiovascular, renal, or hepatic disease. Women with a history of pelvic malignancy (eg, ovarian cancer) or any condition mimicking the features of endometriosis (eg, pelvic inflammatory disease) and patients with major commorbidities contraindicated for surgery (eg, uncontrolled cardiovascular, renal, or hepatic disease) were excluded from the study. Women who ever been treated previously with endometriosis were also excluded from the study. Endometriosis, diagnosed as presence of endometrial-like tissue adjacent to serosal surfaces of the uterus, was defined as respective primary outcome variable and assessed intra-operatively in en-bloc resected specimens. The diagnosis was then confirmed by histopathological study of these biopsy specimens. Endometriosis stage was defined using revised American Society for Reproductive Medicine (ASRM) criteria: Stage I (minimal), Stage II (mild), Stage III (moderate),

and Stage IV (severe). Demographic data included age, parity, and BMI, type of surgery, indication for surgery and other gynecological pathologies (fibroids or gynecological cysts).

The SPSS version 26.0 was used to enter and analyzed the statistical data. Descriptive statistics were reported in terms of mean with standard deviation and frequency with percentage for quantitative and qualitative variable respectively. The Chi-square test was applied to assess the statistical association at 5% level of significance.

RESULTS

A total of 170 subjects (mean age = 34.44 ±°6.43 years) participated Among these, 64.7% were 20–35 years and 35.3% were older than 35 years. BMI average was 26.25 ± 3.37 kg/m², being 55.9% between 20 to 26 kg/m² and 44.1% above 26 kg/m². The mean parity was 1.99 ± 1.18, 75.3% had 0-2 children, and 24.7% had more than two children. Of the participants, 10.6% had a history of miscarriage and 89.4% never experienced a miscarriage. In terms of delivery history, 44.7% underwent a caesarean section as shown in TABLE 1. Indications for laparoscopic surgery in patients with or without endometriosis are compared in Table II. Infertility was present in 15.0% of endometriosis patients and 85.0% of non-endometriosis patients (p=0.626). Of the cases with endometriosis, 15.7% had ovarian cyst accidents and 84.3% of non-endometriosis cases (p=0.857). Ectopic pregnancy was present in 4.2% of endometriosis patients and 95.8% of non-endometriosis patients (p = 0.062). References 5.3% of endometriosis patients and 94.7% of non-endometriosis patients were indicated to have family planning (p = 0.140). Suspected uterine perforation was 7.7% for endometriosis and 92.3% for non-endometriosis (p=0.333). Chronic Pelvic pain was found to be 37.5% in endometriosis patients vs. 62.5% in non-endometriosis patients (p=0.126). In endometriosis patients, there were 20.0% recurrent pregnancy loss and in non-endometriosis patients, there were 80.0% recurrent pregnancy loss (p=0.598). Lastly, 8.3% of patients with endometriosis and 91.7% of those without endometriosis had other indicated reasons for surgery (p = 0.379). In Table III, the types of laparoscopic surgeries performed on patients with and without endometriosis are compared. Out of 170 patients, 28 (16.5%) had endometriosis, and 142 (83.5%) did not. Among endometriosis patients, 16.3% underwent diagnostic laparoscopy while 83.7% of non-endometriosis patients. Of patients with endometriosis, 22.2% had undergone ovarian cystectomy, while 77.8% of patients without endometriosis underwent this surgical procedure. Endometriosis patients had a 5.9% salpingectomy while the non-endometriosis patients had a 94.1% salpingectomy. Tubal ligation was performed in 8.7% cases of endometriosis whereas, 91.3% cases of non-endometriosis went under this procedure. Laparoscopic oophorectomy was performed in 50.0% of endometriosis cases and in 50.0% of non-endometriosis cases. Assisted vaginal hysterectomy was ultimately performed on 0.0% of endometriosis patients and 100.0% of non-endometriosis patients.

DISCUSSION

Endometriosis is an often debilitating gynecological disease, affecting millions of premenopausal women, and is recognized as a serious cause of morbidity. Endometriosis is an enigmatic disease that presents with variable symptoms including non-specific nonsubspecific and even non-invasive diagnostic methods are not sensitive to pick up effort for the lesions Associated with dysmenorrhea, chronic pelvic pain, dyspareunia, and infertility. However, these symptoms are also present in other conditions which contributes to a delay in both diagnosis and treatment. These data are consistent with previous reports of 10% to 15% prevalence in the community, and 40% to 50% in women presenting to care for infertility or pelvic pain [15]. Among subjects undergoing surgical treatment for ovarian cyst, pelvic adhesion and unexplained infertility, a high incidence of endometriosis was observed. In asymptomatic women who underwent surgery for other reasons, the diagnosis was often incidental. Such potential leaves subclinical sick disease and emphasises the important being herewith placed at being excessive on watch to locating endometriosis at surgery. There were usually cystic endometriotic lesions such as endometriomas and pelvic adhesions. Endometriomas can have massive surgical indication, especially the ovarian type of involvement, and these cause infertility and chronic pain [16]. Endometriosis is a chronic inflammatory disease often presenting in complicated ways with pelvic adhesions and deep infiltrating endometriosis as a result of fibrosis and scarring from the disease

and thus is often more complex and requires surgical resection. Currently, the gold standard for the diagnosis and treatment of endometriosis remains through laparoscopy, where it can be directly visualized and histologic confirmation made [17]. Endometrial tissue abnormalities (endometriosis) were found in 16.5% of patients in current study. The rate of endometriosis in another study was 13.7% [18]. Endometriosis was seen in 10.27% women by Al-Jafari M, et al [19] and 18.90% by Chaggar P, et al [20]. And Farhad S, et al noticed in 15% cases [21]. Endometriosis was seen in 16.4% of patients recorded by Saima I,et al[22]. Therefore, management of endometriosis tends to occur one patient, one symptom, one disease severity, and one reproductive goal at a time. In moderate to severe disease surgical intervention plays a major role, particularly when symptoms are refractory to medical therapy or where maintaining fertility is important. However recurrence is common so adjunctive medical therapies such as hormonal suppression are frequently needed to keep symptoms under control. Advances in assisted reproduction technologies provide additional management possibilities and reinforce the importance of a multidisciplinary approach to care in women with endometriosis-associated infertility. This study thus provides insight into, (^) but does have limitations. Women with surgery for endometriosis are expected not to be representative of the population and the cohort was probably inflated for women with endometriosis. In addition, selection bias is possible due to the retrospective design, leading to limited generalizability. These findings require confirmation by better diagnostic instruments and future studies in larger populations for a better understanding of endometriosis. Important strengths of this study include use of surgically-confirmed endometriosis cases, thereby avoiding diagnostic ambiguity based on imaging or clinical diagnosis beyond the settings examined. The use of laparoscopy as the diagnostic gold standard raises the strength of the findings. However, recruitment from a surgical cohort may not capture all endometriosis, particularly low-grade disease that never necessitates surgery.

Future studies should therefore target these constituents as potential non-invasive diagnostics to allow for early detection of first episodes, without the need for invasive surgical diagnosis. This gap can be filled by biomarkers and imaging, but there are potential ways. Additionally, long-term follow-up studies, surgical and medical, are warranted. To avoid needless delays in the diagnosis, and to achieve optimal outcomes, this paper highlights the importance of greater awareness and understanding of endometriosis among frontline healthcare professionals and patients.

CONCLUSION

It is to be concluded that women who underwent gynecological surgeries, endometriosis was commonly observed with symptoms such as chronic pelvic pain and infertility. Routine procedures included diagnostic laparoscopy and cystectomy for ovarian cyst. Complete care of patients can only be provided if subclinical endometriosis is also identified and treated by routine laparoscopic evaluation.

REFERENCES

1. Saraswat L, Ayansina D, Cooper KG, Bhattacharya S, Horne AW, Bhattacharya S. Impact of endometriosis on risk of further gynaecological surgery and cancer: a national cohort study. BJOG. 2018;125(1):64-72.
2. Singh SS, Gude K, Perdeaux E, Gattrell WT, Becker CM. Surgical outcomes in patients with endometriosis: a systematic review. J Obstet Gynaecol Can. 2020;42(7):881-8.
3. D'Alterio MN, Saponara S, Agus M, Laganà AS, Noventa M, Loi ES, et al. Medical and surgical interventions to improve the quality of life for endometriosis patients: a systematic review. Gynecol Surg. 2021;18(1):13.
4. Vannuccini S, Reis FM, Coutinho LM, Lazzeri L, Centini G, Petraglia F. Surgical treatment of endometriosis: prognostic factors for better quality of life. Gynecol Endocrinol. 2019.
5. Grigoriadis G, Roman H, Gkrozou F, Daniilidis A. The impact of laparoscopic surgery on fertility outcomes in patients with minimal/mild endometriosis. J Clin Med. 2024;13(16):4817.

6. Ferrier C, Roman H, Alzahrani Y, d'Argent EM, Bendifallah S, Marty N, et al. Fertility outcomes in women experiencing severe complications after surgery for colorectal endometriosis. Hum Reprod. 2018;33(3):411-5.
7. Borisova AV, Konnon SR, Tosto V, Gerli S, Radzinsky VE. Obstetrical complications and outcome in patients with endometriosis. J Matern Fetal Neonatal Med. 2022;35(14):2663-77.
8. Comptour A, Chauvet P, Canis M, Grémeau AS, Pouly JL, Rabischong B, et al. Patient quality of life and symptoms after surgical treatment for endometriosis. J Minim Invasive Gynecol. 2019; 26(4):717-26.
9. Grundström H, Alehagen S, Berterö C, Kjølhede P. Impact of pelvic pain and endometriosis on patient-reported outcomes and experiences of benign hysterectomy: a study from the Swedish National Register for Gynecological Surgery. J Womens Health. 2018;27(5):691-8.
10. Schippert C, Witte Y, Bartels J, Garcia-Rocha GJ, Jentschke M, Hillemanns P, et al. Reproductive capacity and recurrence of disease after surgery for moderate and severe endometriosis–a retrospective single center analysis. BMC Womens Health. 2020;20:1-1.
11. Sandström A, Bixo M, Johansson M, Bäckström T, Turkmen S. Effect of hysterectomy on pain in women with endometriosis: a population-based registry study. BJOG. 2020;127(13):1628-35.
12. Ghiasi M, Kulkarni MT, Missmer SA. Is endometriosis more common and more severe than it was 30 years ago? J Minim Invasive Gynecol. 2020;27(2):452-61.
13. Conroy I, Mooney SS, Kavanagh S, Duff M, Jakab I, Robertson K, et al. Pelvic pain: what are the symptoms and predictors for surgery, endometriosis and endometriosis severity. Aust N Z J Obstet Gynaecol. 2021;61(5):765-72.
14. Kho RM, Andres MP, Borrelli GM, Neto JS, Zanluchi A, Abrão MS. Surgical treatment of different types of endometriosis: comparison of major society guidelines and preferred clinical algorithms. Best Pract Res Clin Obstet Gynaecol. 2018;51:102-10.
15. Sarria-Santamera A, Orazumbekova B, Terzic M, Issanov A, Chaowen C, Asúnsolo-del-Barco A. Systematic review and meta-analysis of incidence and prevalence of endometriosis. Healthcare. 2020;9(1):29.
16. Eisenberg VH, Weil C, Chodick G, Shalev V. Epidemiology of endometriosis: a large population-based database study from a healthcare provider with 2 million members. BJOG. 2018;125(1): 55-62.
17. Parazzini F, Roncella E, Cipriani S, Trojano G, Barbera V, Herranz B, et al. The frequency of endometriosis in the general and selected populations: a systematic review. J Endometr Pelvic Pain Disord. 2020;12(3-4):176-89.
18. Muhaidat N, Saleh S, Fram K, Nabhan M, Almahallawi N, Alryalat SA, et al. Prevalence of endometriosis in women undergoing laparoscopic surgery for various gynaecological indications at a Jordanian referral centre: gaining insight into the epidemiology of an important women's health problem. BMC Womens Health. 2021;21:1-8.
19. Al-Jafari M, Aldarawsheh MA, Abouzid M, Serag I, Nofal MA, Altiti AR, et al. Prevalence of endometriosis in women undergoing laparoscopic surgery for various gynecological indications: a Jordanian multi-center retrospective study. BMC Womens Health. 2024;24(1): 669.
20. Chaggar P, Tellum T, Thanatsis N, De Braud LV, Setty T, Jurkovic D. Prevalence of deep and ovarian endometriosis in women attending a general gynecology clinic: prospective cohort study. Ultrasound Obstet Gynecol. 2023;61(5):632-41.
21. Farhad S, Roknuzzman M, Akhtar A. Prevalence of endometriosis in women undergoing laparoscopic surgery for various gynecological indications. Obstet Gynecol Res. 2024;7(3):76-9.
22. Saima I, Sikandar A, Sajjad A, Tanweer A, Shahzeena, Abdullah S. Frequency of common infertility causes in patients attending infertility clinic at Civil Hospital Karachi. Pak J Med Dent Sci. 2024;1(2):40-4

Table I: Demographic Characteristics of Study Participants (n=170)	
Variable	**n (%)**
Age (Mean ± SD) = 34.44 ± 6.43	
20-35 years	110 (64.7)
>35 years	60 (35.3)
Body Mass Index (Mean ± SD) = 26.25 ± 3.37	
20-26 kg/m^2	95 (55.9)
>26 kg/m^2	75 (44.1)
Parity (Mean ± SD) = 1.99 ± 1.18	
0-2	128 (75.3)
>2	42 (24.7)
Miscarriages	
Yes	18 (10.6)
No	152 (89.4)
C-Section	
Yes	76 (44.7)
No	94 (55.3)

Table II: Comparison of Indications laparoscopic surgeries with Endometriosis (n=170)

Indications	Endometriosis			P-Value
	Yes	No	O.R 95% C. I	
Infertility, *n* (%)	12 (15.0)	68 (85.0)	0.816 (0.360----1.849)	0.626
Ovarian Cyst Accident, *n* (%)	8 (15.7)	43 (84.3)	0.921 (0.376----2.253)	0.857
Ectopic Pregnancy, *n* (%)	1 (4.2)	23 (95.8)	0.192 (0.025----1.481)	0.062
Family Planning, *n* (%)	1 (5.3)	18 (94.7)	0.255 (0.033----1.994)	0.140
Suspected Uterine Perforation, *n* (%)	1 (7.7)	12 (92.3)	0.401 (0.050----3.217)	0.333
Chronic Pelvic Pain, *n* (%)	3 (37.5)	5 (62.5)	3.288 (0.738----14.640)	0.126
Recurrent Pregnancy Loss, *n* (%)	1 (20.0)	4 (80.0)	1.278 (0.137----11.881)	0.598
Other, *n* (%)	1 (8.3)	11 (91.7)	0.441 (0.055----3.561)	0.379

Table III: Comparison for Type of Laparoscopic Procedure with Endometriosis (n=170)				
Procedure	**Endometriosis**			**P-Value**
	Yes (n=28)	**No (n=142)**	**O.R 95% C. I**	
Diagnostic Laparoscopy, *n* (%)	14 (16.3)	72 (83.7)	1.013 (0.738----1.391)	0.128
Ovarian Cystectomy, *n* (%)	8 (22.2)	28 (77.8)		
Salpingectomy, *n* (%)	1 (5.9)	16 (94.1)		
Tubal Ligation, *n* (%)	2 (8.7)	21 (91.3)		
Laparoscopic Oophorectomy, *n* (%)	3 (50.0)	3 (50.0)		
Assisted Vaginal Hysterectomy, *n* (%)	0 (0.0)	2 (100.0)		