Assessment of Presentation and Prevalence of Endometriosis in the Population of Kotri Pakistan: A cross Sectional Study

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ABSTRACT

Aim: The present study aims at the determination of presentation and prevalence of endometriosis in the Kotri Pakistan.
Study design: A cross sectional study
Place and duration: This study was conducted at SESSI Hospital SITE Kotri, Pakistan from June 2019 to July 2020.
Methodology: A total of 800 patients were admitted to the gynaecology ward. A total of 160 patients were suspected to have endometriosis as their signs and symptoms were indicative of the disease. The age range of the patients was from 17 to 48 years. All the patients underwent laparotomy or laparoscopy for diagnosis and treatment. Individual proforma was filled for all the patients according to the severity of the disease. The stage of the disease for each patient was identified as per American Fertility Society endometriosis staging.
Results: The symptoms of endometriosis were prevalent in 160 (20%) of the 800 patients who had been admitted to the ward. A total of 40 (25%) were diagnosed with endometriosis on laparoscopy/laparotomy.
Conclusion: The overall prevalence of endometriosis seen during the study period was 5%. Endometriosis is a common women's health issue in the population of Pakistan. Nonetheless, it is underestimated. Its prevalence is high in patients between the ages of 21 years to 30 years. The most common presentation of endometriosis is infertility. A diagnostic laparoscopy must be performed in patients who present with symptoms suggestive of endometriosis. Timely diagnosis and treatment can help in reproduction.

Key words: Endometriosis, Infertility, Laparoscopy, Laparotomy

INTRODUCTION

Endometriosis is a painful disease in which tissue of the endometrium tends to grow outside the uterus. It most commonly involves the ovaries. Other common sites are fallopian tubes and tissues of the pelvic lining. On rare occasions, it also seems to involve extra-pelvic organs. The tissue of endometriosis has a functional similarity with the endometrial tissue. Hence, its thickness increases with each menstrual cycle and similarly, it breaks down and then bleeds. However, unlike original endometrial tissue, endometriosis cannot escape the cavity in which is it situated. The debris keeps collecting and can form a cyst. A cyst of endometriosis formed in the ovaries is called an endometrioma. The other normal tissues of the body surrounding an endometrioma can form scars and adhesions [1].

The symptoms of endometriosis are majorly associated with menstrual periods. Endometriosis has the potential of causing severe pain, especially during menstruation. However, the severity of the pain is not an indication of the extent of the disease.

Endometriosis patients often complain of dyspareunia. During a menstrual cycle, feeling pain with bowel movements and urination is also common in most patients. Patients experience excessive bleeding during menstruation and bleeding between two cycles [2].

The worst and most common outcome of the disease is infertility. Other symptoms of endometriosis include Diarrhea, bloating, constipation, fatigue, and nausea. These symptoms are aggravated during menstruation.

Endometriosis can be mistaken for pelvic inflammatory disease, ovarian cyst, and irritable bowel syndrome due to overlapping symptoms.

There are many explanations for the causes of endometriosis. One theory suggests that during menstruation, the shed off part of the endometrium moves to fallopian tubes through a retrograde movement and reaches in the pelvic cavity rather than moving out of the body.

The endometrial tissue adheres to the pelvic cavity and starts thickening and bleeding there with each menstrual cycle.

The 'induction theory' suggests that the normal tissue of the peritoneal cavity starts functioning like endometrial tissue under the influence of hormones. The hormones can also transform the embryonic cells into endometrial cells during puberty giving rise to endometriosis. In some instances, the endometrial tissue adheres to a surgical incision followed by a C-section or a hysterectomy. Another theory suggests that the lymphatic system or blood vessels can transport the endometrial tissue from the uterus to other parts of the body [3].

There are several risk factors that increase the chances of occurrence of endometriosis. Some of them are null parity, puberty at a younger age, late menopause, menstrual cycle shorter than 27 days, heavy menstruation for over seven days, high level of estrogen in the body, low BMI, family history of endometriosis, and any other disorder related to the reproductive system. Infertility is the most gruesome complication of endometriosis. Endometriosis may obstruct the fallopian tubes and hence disrupt the process of ovulation. Despite that, patients with mild or moderate endometriosis can conceive. Endometriosis increases the risk of ovarian cancer. The patients can rarely develop endometriosis-associated adenocarcinoma later in life [4].

The diagnosis of endometriosis is built based on clinical symptoms, pelvic examination, and some investigations such as ultrasound, magnetic resonance imaging (MRI), and diagnostic laparoscopy [5]. Laparoscopy helps in the identification of the size, location, and extent of endometrial implants. Depending on the size of the implant, treatment can also be done during laparoscopy. Other modes of treatment are analgesics, hormonal therapy, removal of the implant through surgery, and even hysterectomy in severe cases [6].

The present study was conducted to determine the presentation and prevalence of endometriosis in the population of Kotri presented at SESSI Hospital SITE Kotri, Pakistan.

METHODOLOGY

This cross-sectional study was conducted in the Gynaecology and Obstetrics department of SESSI Hospital SITE Kotri, Pakistan from June 2019 to July 2020. During this whole duration, 800 patients were admitted to the gynaecology ward. Out of those, 160 (20%) had signs and symptoms strongly suggestive of endometriosis and were selected for the study.

The ages of the patients ranged from 17 to 48 years. Inclusion criteria for the study were the presence of symptoms such as secondary dysmenorrhea, infertility, deep dyspareunia, no response to ibuprofen, and abnormal uterine bleeding. Furthermore, patients were examined and those patients who had lesions in the vaginal wall on examination, cervical lesions, fixed adnexal mass, nodular uterosacral ligament, and induration in cul-de-sac were included in the study.

Exclusion criteria included no history of the treatment of endometriosis and patients who did not sign the consent. Written informed consent was taken from all the patients beforehand. They explained the procedure of laparoscopy and laparotomy. All the participants were educated and counseled about the disease and its outcomes.

A detailed history regarding symptoms was taken from all the patients. Demographic data including age, weight, education, socio-economic status, parity, contraceptive history, menstrual history, treatment history, and previous investigations were also recorded.

Patients were examined for the signs of endometriosis. The data was recorded on individual proforma. The criteria set for laparoscopy were the appearance of mulberry spots, stellate scars, powder burns, chocolate cysts in the ovary/ovaries, and dense adhesions. Laparotomy was to be done on the patients who had been diagnosed clinically and had a histopathology report.

The disease was classified as per the staging system of the American Fertility Society after and points were given after an assessment of depth and size of the lesions, and severity of endometrial adhesions. There were four stages in the patients that were classified as in the following Table 1.

Table 1: Four stages of the patients.

Stage	Extent of disease	Points
Stage-I	Minimal	5-Jan
Stage-II	Mild	15-Jun
Stage-III	Moderate	16-40
Stage-IV	Severe	>40

RESULTS

A total of 800 patients were admitted to the gynaecology ward from June 2019 to July 2020. Total 160 (20%) out of them were suspected to have endometriosis. Out of those who had positive history and clinical symptoms of endometriosis, 40 (25%) had confirmation of diagnosis on laparotomy or laparoscopy. None of the patients was diagnosed with cervical or vaginal wall endometriosis. Hence, the overall prevalence of endometriosis seen during the study period was 5%. The distribution of the patients according to the age is given in Table 2.

The majority of the patients (80%) were between the ages of 21 years to 30 years. Only 1 patient was above the age of 40 and 1 below the age of 20 years. 75% of patients weighed 50kg to 60 kg. Only one patient weighed 70 kg. The distribution of weight and parity is given in Table 3 and Table 4. Most of the patients were nulliparous. Endometriosis was the probable cause of infertility in those patients. Classification of the patients based on the staging system of the American Fertility Society is given in Table 5. Out of the total of 40 confirmed patients with endometriosis, most of the patients (37.5%) had mild disease and only one had the minimal disease. 11 (27.5%) patients had severe disease. Patients in Stage III and IV involved the uterus, ovaries, fallopian tubes, and peritoneum. Moreover, there was obliteration in the Pouch of Douglas, deep-seated lesions, and multiple adhesions in the gut.

Table 2: Participants' distribution according to age.

Age group (Years)	Total population		Population with endometriosis	
	Number	Percentage	Number	Percentage
17-20	3	1.87	1	2.5
21-30	121	75.63	32	80
31-40	30	18.75	6	15
41-48	6	3.75	1	2.5
Total	160		40	

Table 3: Participants distribution according to weight.

Weight group (Kg)	Total population		Population with endometriosis	
	Number	Percentage	Number	Percentage
Below 50	10	62.5	2	5
50-60	119	74.37	30	75
61-70	20	12.5	7	17.5
Above 71	11	6.87	1	2.5
Total	160		40	

Table 4: Participants distribution according to parity.

Parity	Number of patients	Percentage
Nulliparous	29	72.5
1-3 children	9	22.5
More than 3 children	2	5
Total	40	

Table 5: Patients distribution according to the staging of disease according to AFS.

Stage	Severity of disease	Number of patients	Percentage
Stage I	Minimal	1	2.5
Stage II	Mild	15	37.5
Stage III	Moderate	13	32.5
Stage IV	Severe	11	27.5
Total		40	

DISCUSSION

According to the results of the present study, endometriosis is 25% prevalent out of all the patients that were admitted in the gynaecology ward with suspicion of endometriosis. A similar study was conducted by Meuleman et al. in which they had included 220 infertile women and performed diagnostic laparoscopy on all the participants. They found that the prevalence of endometriosis in their study was 47%. They concluded that all of the participants needed reproductive surgery since a large number of patients were diagnosed with endometriosis [7].

Nazir et al studied the length of the menstrual cycle in endometriosis. They included 50 women who were married and had been diagnosed with endometriosis by diagnostic laparoscopy. They concluded that there was a strong correlation between the short length of the menstrual cycle and endometriosis [8]. Jefout et al. conducted a study to find out the association of endometriosis and pelvic pain in the population under study. The study included 28 females with chronic pelvic pain. 20 of them were diagnosed with endometriosis. Hence they concluded that there was a strong association between chronic pelvic pain and endometriosis. They also observed the prevalence of cold intolerance in patients with endometriosis [9].

Reid et al conducted a similar study to the present one to identify the prevalence of endometriosis in the Australian population. The sample size was as large as 2025 women. The percentage prevalence determined was 3.4%. They concluded that endometriosis is a common health issue in women and needs special acknowledgment [10]. Bean et al conducted a study to assess the incidence of endometriosis in pregnant women. They included a total of 1341 women who had visited the clinic for early pregnancy ultrasounds. 5% of the pregnant women were diagnosed with endometriosis. Half of them were diagnosed with endometriosis for the first time. They concluded that ultrasound is a beneficial tool to diagnose endometriosis [11]. However, it is not always the case. Diagnostic laparoscopy is the most reliable and authentic method of diagnosis [12]. According to the study of Okoth et al. women with endometriosis are at great risk of cardiovascular diseases [13].

CONCLUSION

The overall prevalence of endometriosis seen during the study period was 5%. Endometriosis is a common women's health issue in the population of Kotri Pakistan.

Nonetheless, it is underestimated. Its prevalence is high in patients between the ages of 21 years to 30 years. The most common presentation of endometriosis is infertility. A diagnostic laparoscopy must be performed in patients who present with symptoms suggestive of endometriosis. Timely diagnosis and treatment can help in reproduction.

PERMISSION

It was taken from the ethical review committee of the institute.

FUNDING SOURCE

None.

CONFLICT OF INTEREST

None.

REFERENCES

1. Wang Y, Nicholes K, Shih IM. The origin and pathogenesis of endometriosis. Annu Rev Pathol-Mech 2020; 15:71-95.

2. Laganà AS, Garzon S, Götte M, et al. The pathogenesis of endometriosis: Molecular and cell biology insights. Int J Mol Sci 2019; 20:5615.

3. Hill CJ, Fakhreldin M, Maclean A, et al. Endometriosis and the fallopian tubes: Theories of origin and clinical implications. J Clin Med 2020; 9:1905.

4. Tetikkurt S, Çelik E, Taş H, et al. Coexistence of adenomyosis, adenocarcinoma, endometrial and myometrial lesions in resected uterine specimens. Mol Clin Oncol 2018; 9:231-237.

5. Agarwal SK, Chapron C, Giudice LC, et al. Clinical diagnosis of endometriosis: A call to action. Am J Obstetr Gynecol 2019; 220:354-e1.

6. Ferrero S, Evangelisti G, Barra F. Current and emerging treatment options for endometriosis. Expert Opinion Pharmac 2018; 19:1109-1125.

7. Meuleman C, Vandenabeele B, Fieuws S, et al. High prevalence of endometriosis in infertile women with normal ovulation and normospermic partners. Fertil Steri 2009; 92:68-74.

8. Nazir S, Khan R, Khalid A, et al. Menstrual cycle length in females with endometriosis. J Med Sci 2019; 27:356-8.

9. Al-Jefout M, Alnawaiseh N, Yaghi S, et al. Prevalence of endometriosis and its symptoms among young

Jordanian women with chronic pelvic pain refractory to conventional therapy. J Obstetr Gynaecol Canada 2018; 40:165-170.

10. Reid R, Steel A, Wardle J, et al. The prevalence of self-reported diagnosed endometriosis in the Australian population: Results from a nationally-representative survey. BMC Res Notes 2019; 12:1-6.

11. Bean E, Naflalin J, Horne A, et al. An ultrasound study of the prevalence of endometriosis in women attending for early pregnancy assessment: A prospective observational study. Authorea Preprints 2020.

12. Wykes CB, Clark TJ, Khan KS. Accuracy of laparoscopy in the diagnosis of endometriosis: A systematic quantitative review. Int J Obstetr Gynaecol 2004; 1111204-12.

13. Okoth K, Wang J, Zemedikun D, et al. Risk of cardiovascular outcomes among women with endometriosis in the United Kingdom: A retrospective matched cohort study. Int J Obstetr Gynaecol 2021.