



ORIGINAL ARTICLE

Frequency of endometriosis found on laparoscopic examination among females with subfertility.

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ABSTRACT... Objective: To determine frequency of endometriosis and its staging found on diagnostic laparoscopy for subfertility among females. **Study Design:** Cross Sectional study. **Setting:** Department of Gynecology and Obstetrics, Jinnah Medical and Dental College and Hospital Karachi. **Period:** August 2020 to January 2021. **Material & Methods:** Total 120 female cases were enrolled into the study who were admitted in the ward for diagnostic laparoscopy to determine cause of subfertility. All female patients in reproductive age having undiagnosed primary or secondary subfertility were selected using consecutive sampling technique. Those who had previously any abdominal surgery were excluded from the study. Data was analyzed using SPSS-20 software. Results were presented in the form of frequency, percentage, and mean \pm standard deviation. **Results:** Endometriosis was diagnosed on laparoscopy in 29.1% cases as a cause of infertility. Age range of the patients in study group was 16-45 years with mean age of 27.42 ± 2.16 years. Infertility duration was ≤ 3 years in majority of cases (65%). Primary infertility was present in 65.7% and secondary infertility was found in 34.3% cases in study group. Most of the patients diagnosed for endometriosis were having age > 30 years. Stage-4 endometriosis was found commonly in 42.8% cases. **Conclusion:** Laparoscopy is a best modality for diagnosing endometriosis and its effect on fertility in future. This facility should be available in all gynecological departments for timely diagnosing endometriosis and to treat it promptly.

Key words: Adhesions, Chocolate Cyst, Endometriosis, Infertility, Laparoscopy.

INTRODUCTION

Presence of endometrial tissue outside of uterus, inducing chronic inflammatory reaction and producing scarring and adhesions that distort pelvic anatomy of females is called endometriosis.¹ Diagnosis of endometriosis can be suspected in patients with the history of infertility in reproductive age, dyspareunia and dysmenorrhea.² However it is a cause of infertility but its mechanisms is still not clear. Moderate to severe endometriosis distorts pelvic anatomy causing pain and inflammation resulting in infertility. Still it is not clear that mild endometriosis can cause infertility or not, without distorting pelvic anatomy.³ Incidence of endometriosis among infertile females is 16.8%, while its frequency found on diagnostic laparoscopy is 43.3% and during gynecological surgeries it is found in 1% cases.⁴ Prevalence of endometriosis among females with infertility is

25-50%. Worldwide prevalence of endometriosis among infertile women is 63%, while it is less common in Asian countries like Pakistan, India, Iran and Bangladesh etc.⁵

Endometriosis prevalence in general female population is not clear. Its risk factors include early menarche, short menstrual cycle, mullerian abnormalities, prolonged menstruation and nulliparity increase risk of developing endometriosis, while late menarche, multiple births and lactational amenorrhea decrease its risk.⁶ Caucasians and Asian have increased incidence of the disease than black and Hispanic women. Females having family history of endometriosis in first degree relative have 7% increased risk as compared to 1% risk in other females without family history of endometriosis.⁷ There are different theories explaining

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development of endometriosis as one of them state that retrograde menstrual flow is a cause of pelvic endometriosis while outside of pelvis dissemination of endometriotic tissue occurs through blood vessels and lymphatics.⁸

Its major presenting symptoms are pelvic pain, dyspareunia, dysmenorrhea, bowel and bladder symptoms and painful defecation duration menstruation denote deep infiltrating disease. On examination enlarge adenexa, fixed retroverted uterus and tenderness may be found. Laparoscopic examination is the gold standard investigation.⁹ Its accuracy depends on the experience of examiner, site of endometriosis, severity of the disease. Histological examination of biopsy is equally important. There are various classifications of endometriosis but most commonly used classification was proposed by American Society for Reproductive Medicine (ASRM) in 1996 depending on the size and depth of the lesion and presence of adhesions.¹⁰

MATERIAL & METHODS

This is a cross sectional study conducted in the department of gynaecology and obstetrics Jinnah Medical and Dental College and Hospital Karachi. Study was commenced on August 2020 and completed after six months on January 2021 ethical approval was also taken from the ethical review board (IRB-374). Total 120 female cases were enrolled into the study. According to inclusion criteria patients in reproductive age <45 years, with infertility and did not have any previous abdominal surgery were included in the study. Those who had any gynecological surgery previously, had radiation or chemotherapy and having age >45 years or having any contraindication of laparoscopic examination or not fit for general anesthesia were not included

in the study. Study sample was calculated using WHO sample size calculator. Sample selection was done using consecutive sampling technique. Informed written consent was taken from all the cases prior to laparoscopic examination. Patients were admitted in the gynaecology department via out-patient door. After taking history and doing physical examination, they were prepared for diagnostic laparoscopy under general anesthesia. Laparoscopic findings were documented such as site and size of endometriosis, adhesions and its effect on pelvic anatomy. Data was analyzed using SPSS-20 software. Chi square test was applied on the data.

RESULTS

Total 120 cases with infertility were included in this study. All cases underwent diagnostic abdominal laparoscopy. There were 78(65%) cases with the duration of infertility ≤ 3 years and out of them endometriosis was not found in majority of cases in 74(61.7%). 42(35%) cases presented with infertility duration of >3 years and endometriosis was found in 31(25.8%) cases out of them (Table-I).

All female cases in study group were in reproductive age with age range of 16-45 years and mean age of 27.42 ± 2.16 years there were 40(33.3%) cases with age ≤ 30 years and 15.8% cases out of them were diagnosed for endometriosis, while most of the cases (66.7%) were having age >30 years and out of them endometriosis was found in 13.3% cases (Table-II).

Out of 120 cases cause of infertility was endometriosis, found in 35(29.1%) cases while in remaining 85(70.8%) cases endometriosis was not found (Figure-1).

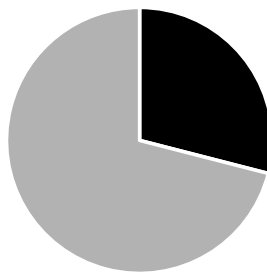
Duration of Infertility	Endometriosis		Total	P-Value
	Present	Absent		
≤ 3 years duration	04 (3.3%)	74 (61.7%)	78 (65%)	<0.05
>3 years	31 (25.8%)	11 (9.17%)	42 (35%)	
Total	35 (29.2%)	85 (70.8%)	120 (100%)	

Table-I. Distribution of cases according to infertility duration.

Age Distribution	Endometriosis		Total	P-Value
	Present	Absent		
≤30 years	19 (15.8%)	21 (17.5%)	40 (33.3%)	<0.05
>30 years	16 (13.3%)	64 (53.3%)	80 (66.7%)	
Total	35 (29.2%)	85 (70.8%)	120 (100%)	

Table-II. Age distribution of cases in study group.

Frequency of Endometriosis



■ Present ■ Absent

Figure-1. Frequency of endometriosis in study group. (n=120)

Laparoscopic Findings	Frequency n (%)
Ovary	
Right superficial endometriosis	08 (22.8%)
Right deep endometriosis	15 (42.8%)
Left superficial	04 (11.4%)
Left deep	08 (22.8%)
Peritoneum	
Superficial	10 (28.6%)
Deep	25 (71.4%)
Tubes	
Right flimsy	06 (17.1%)
Right dense	08 (22.8%)
Left flimsy	04 (11.4%)
Left dense	17 (48.6%)
Adhesions	
Right flimsy	07 (20%)
Right dense	15 (42.8%)
Left flimsy	07 (20%)
Left dense	06 (17.1%)
Cul-de-sac obliteration	
Partial	16 (45.7%)
Complete	19 (54.3%)

Table-III. Frequency of various findings on diagnostic laparoscopy.

Among 35 patients with endometriosis findings on diagnostic laparoscopy were as following, right superficial endometriosis was seen commonly in 15(42.8%) cases, while left superficial type was least common and found in 04 (11.45) cases only. Endometriosis was deep to peritoneum in most of the cases 25(71.4%). Right fallopian tube was flimsy in 17.1% cases and dense in 22.8% cases, while left tube was flimsy in 11.4% cases and dense in 48.6% cases. Right side dense adhesions were found in most of the cases 42.8%. Complete cul-de sac obliteration was seen in 54.3% cases (Table-III).

In most of the cases stage-4 endometriosis was found in 42.8% cases followed by stage-3 in 25.7%, stage-2 in 17.1% and stage-1 endometriosis was seen least in frequency in 14.3% cases only (Figure-2).

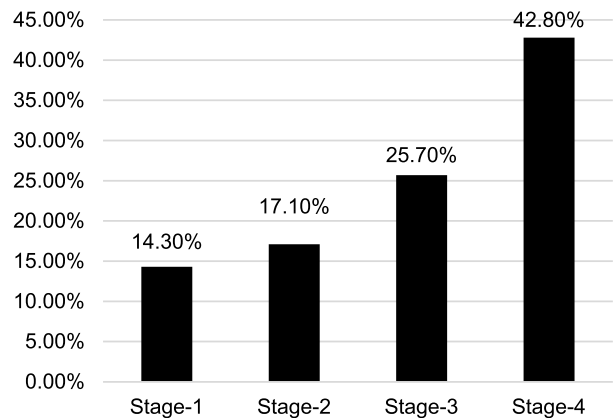


Figure-2. Severity of endometriosis.

DISCUSSION

Laparoscopy is a very important investigation tool for diagnostic as well as therapeutic purposes.¹¹ In the field of gynaecology it has much importance. It has become very easy to diagnose endometriosis using diagnostic laparoscopy now. Infertility is a common problem among

females in this modern world. Endometriosis is one of the common causes of infertility.¹² In developed countries its incidence is very high, that may be due to easily available diagnostic facilities.¹³ According to a report the incidence of endometriosis in developed countries is 21%, while in developing countries it is 4.7%- 4.9% only.¹⁴ In Africa its prevalence was 48.1%, which is very high indicating association with ethnicity.¹⁵ While other studies have reported its incidence as 20%, 48.3% and 20.4% among African females with infertility in reproductive age.^{15,16} In our study it was found in 29.1% cases with infertility.

All female cases in study group were in reproductive age with age range of 16-45 years and mean age of 27.42 ± 2.16 years. There were 33.3% cases with age ≤ 30 years and 66.7% cases were having age >30 years. We found low prevalence of endometriosis in older age >30 years. Riccio et al found its low incidence in extreme age groups.¹⁷ Previous study has reported that incidence of endometriosis is same in primary infertility (52.9%), secondary infertility (45%) and fertile women (40.7%).¹⁸ Another study reported that 66.6% women diagnosed for endometriosis were nulliparous.¹⁹ In our study in most of the cases stage-4 endometriosis was found in 42.8% cases followed by stage-3 in 25.7%, stage-2 in 17.1% and stage-1 endometriosis was seen least in frequency in 14.3% cases only. Endometriomas are very common among the patients having endometriosis.²⁰

According to Mate et al 10-15% of women in reproductive age have endometriosis which is a common cause of infertility. Endometriosis may inherited in many cases.²¹ Yamamoto et al stated that increased consumption of red meat is associated with incidence of endometriosis 56% higher than those consuming less red meat.²² In this aspect further studies are required to confirm nutritional risk factors. An Italian study described that 50% women with infertility have endometriosis. Endometriosis is associated with poor quality of life. It is associated with psychological burden and depression and anxiety. This study has been done in a single center on a small sample size. Further studies are required in this aspect

including data of multiple centers and long term follow up.

CONCLUSION

Endometriosis is a very common problem among female population causing infertility during reproductive age. Laparoscopic examination is a very helpful tool for the diagnosis of endometriosis, stage of the disease and its effect on pelvic anatomy.





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AUTHORSHIP AND CONTRIBUTION DECLARATION

No.	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Erum Memon	Data analysis, Data collection.	
2	Mahwish Sumreen	Topic selection and data collection, Abstract and recording.	
3	Nadia	Data collection, Found additional literature for information.	
4	Nazia	Data collection.	
5	Huma Baloch	Data collection, data analysis.	