



Original Article

Frequency of Endometriosis in Females with Infertility Undergoing Diagnostic Laparoscopy

Tahira Tabbsum¹, Sehrish Nafees², Trevor Hayes³, Syed Mehmood ul Hassan⁴ and Abdul Sattar⁵¹Saint Lukes Hospital Kilkenny, Ireland²University Hospital Cork, Ireland³Saint Luke's General Hospital Kilkenny, Ireland⁴Department of Medicine, Services Hospital Lahore, Pakistan⁵Tallaght University Hospital, Ireland

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*Corresponding Author:

Tahira Tabbsum
Saint Lukes Hospital Kilkenny, Ireland
drsattar09@gmail.com

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ABSTRACT

Endometriosis is the most common, chronic condition. Although some females are asymptomatic, the majority of women come with infertility, adnexal mass, or pelvic pain. Endometriosis treatment in the context of infertility poses a variety of challenging clinical issues. **Objective:** The objective of current study is to identify frequency of endometriosis on laparoscopy in females with infertility. **Methods:** This retrospective study was done at the Department of Obstetrics and Gynaecology, Saint Luke's General Hospital, Kilkenny, Ireland. Medical records of 215 females meeting the inclusion criteria underwent diagnostic laparoscopy were included. Basic demographical details and clinical examination was evaluated and presented through descriptive statistics. On diagnostic laparoscopy, representative sample was taken and sent to hospital histopathology for evaluation of endometriosis. Chi square test was applied to identify the influence of variables on endometriosis. **Results:** Mean age of females was 28.67 ± 6.35 years. Mean duration of marriage was 6.63 ± 5.26 years. There were 80 (37.21%) women in which endometriosis was diagnosed. No significant statistical association was seen for endometriosis with age, infertility type and duration of infertility. **Conclusions:** The findings of this study show an increasing trend in endometriosis identification or occurrence in women with infertility. Endometriosis with infertility is not an uncommon disease in women. Though laparoscopy is intrusive method, but with the right training the issues and complications that come with it can be reduced, which benefits the patients and offers us a clear picture or pathology of the disease.

INTRODUCTION

Infertility is the inability to successfully carry a child after 12 months or more of suitable, unprotected sexual activity or therapeutic donor insemination [1]. Untreated infections, anovulation, and endometriosis are the major socioeconomic reasons of female infertility [2]. Endometriosis is characterized as a prolonged, inflammatory, and oestrogen-dependent condition defined by the expansion of the tissue of endometrium outside the uterus [3]. The prevalence of this condition ranges from 9% to 50 % among females who are infertile, but it can reach 80% in those who experience chronic pelvic pain [4]. Since endometriosis is challenging to

identify and manage, it is an enigma in gynaecology. It causes a wide range of disabling symptoms and has negative consequences on reproductive capacity [5]. Laparoscopy, in addition to providing information on uterine normality, tubal and ovarian status, and other pelvic pathologies, such as pelvic inflammatory disease, endometriosis, tuberculosis, and pelvic congestion. Laparoscopy is the cornerstone in the diagnosis. Because it allows for the visual confirmation of the tiny endometriosis lesions and aids in the staging of the disease [6]. According to a study in Pakistan, endometriosis occurs in 55% of women [2]. Another study from Pakistan found

that 16.8% of 796 infertile women had endometriosis [7]. In contrast, a different study found that 6.5% of females experiencing infertility had endometriosis [8]. This current study was done to assess the frequency of endometriosis during laparoscopy among infertile women. Even though a lot of literature available, but the statistics are inconsistent for endometriosis in infertile women i.e. range from 6.5% to 55% [2,8]. Therefore, no inferences about its management and the avoidance of further difficulties can be made in light of these shifting figures. The current study's findings will provide a precise picture of the frequency, allowing us to screen these women early and, with the right care, reduce their burden and associated morbidity.

METHODS

The current retrospective study was conducted at the Department of Obstetrics and Gynaecology, Saint Luke's General Hospital, Kilkenny, Ireland. Medical records of 215 females who met inclusion criteria and underwent diagnostic laparoscopy from 2013 to 2016 were evaluated. Basic demographic information and a clinical evaluation were assessed. A representative sample was collected during a diagnostic laparoscopy and forwarded to the hospital's histopathology department for endometriosis examination. The collected data were entered and analysed through SPSS version 20.0. Quantitative data like age, duration of infertility was presented in form of mean ± S.D while frequency (%) was used for categorical data like frequency of endometriosis, type of infertility. Data was stratified for age, types of infertility (primary or secondary) and duration of infertility. Chi square test was applied to identify the influence of variables on endometriosis, p-value ≤ 0.05 was considered as significant.

RESULTS

In the current study, 215 females were included. Results showed the mean age of the females was 28.67 ± 6.35 years. Minimum and maximum age of women was 19 and 40 years respectively. According to figure 1, there were 150 (69.77%) women who had primary and 65 (30.23%) had secondary infertility.

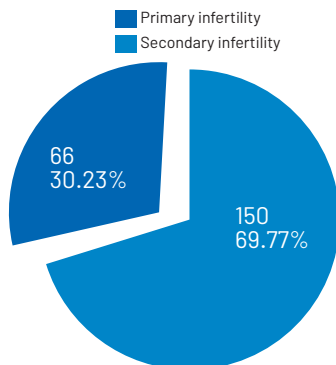


Figure 1: Frequency distribution of type of infertility

According to table 1, mean duration of marriage was 6.63 ± 5.26 years. Minimum and maximum duration of marriage was 1 and 20 years, respectively. The results according to table 1 also shows that mean infertility duration was 1.51 ± 1.33 years. Minimum and maximum duration of infertility was 1 and 10 respectively.

Items		
Mean Duration of Marriage	Mean ± SD	6.63 ± 5.26
	Minimum	1
	Maximum	20
Mean Duration of Infertility	Mean ± SD	1.51 ± 1.336
	Minimum	1
	Maximum	10

Table 1: Descriptive statistics of mean duration of marriage and descriptive statistics of mean duration of infertility

According to figure 2, there were 80 (37.21%) women in which endometriosis was diagnosed

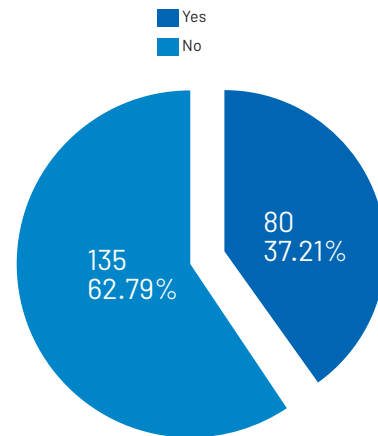


Figure 2: Frequency distribution of endometriosis.

Based on the analysis in table 2, women who were positive for endometriosis among them 28 (35%) were the age group 19-25 years, 21 (26.3%) were in the age group 26-30 years, 18 (22.5%) were in the age group 31-35 years and 13 (16.3%) were in the age group 36-40 years respectively. Although the frequency is highest in the younger age group i.e. 19-25 years but no statistical significant association was seen between age of women and endometriosis. i.e. (p-value=0.623)

Age Groups	Endometriosis		Total	P-Value
	Yes	No		
19-25	28 (35%)	51 (37.8%)	79	0.623
26-30	21 (26.3%)	26 (19.3%)	47	
31-35	18 (22.5%)	30 (22.2%)	48	
36-40	13 (16.3%)	28 (20.7%)	41	
Total	80	135	215	

Table 2: Frequency distribution for endometriosis in terms of age of women

According to table 3, among diagnosed cases of endometriosis 55 (68.8%) women suffered from primary and 25 (31.3%) women suffered from secondary infertility.

Although a high frequency of primary infertility was seen in women who had endometriosis. But statistically no significant association was seen between infertility type and endometriosis. i.e. (p-value=0.803).

Infertility Type	Endometriosis		Total	P-Value
	Yes	No		
Primary	55 (68.8)	95 (70.4)	150	0.803
Secondary	25 (31.3)	40 (29.6)	65	
Total	80	135	215	

Table 3: Frequency distribution in terms of type of infertility

According to table 4, women who were diagnosed with endometriosis among them 76 (95%) women duration of infertility was in between 1-3 and 4 (5%) women's duration of infertility was in between 7-10. No statistically significant association was seen between duration of infertility and endometriosis.

Duration of Infertility	Endometriosis		Total	P-Value
	Yes	No		
1-3	76 (95%)	124 (91.9%)	200	0.297
4-6	4 (5%)	7 (5.2%)	11	
7-10	0 (0%)	4 (3%)	4	
Total	80	135	215	

Table 4: Frequency distribution for Endometriosis in terms of duration of infertility

DISCUSSION

Infertility is a worldwide issue and more than 70 million couples are infertile [9]. Results from this study indicates that 69.77% of the females were diagnosed with primary infertility while 30.23% were suffering with secondary infertility. These results are corresponding from the previous study findings which shows that endometriosis affects 25 to 50% of infertile women, while 30 to 50% of women affected due to endometriosis are infertile [10]. More recent findings show that in the last 30 years, the incidence of endometriosis has not changed, remaining at 2.37-2.49/1000/y, corresponding to a 6% to 8% prevalence [11]. From the results of this study, it is evident that 37.21% of the females were diagnosed with endometriosis. Endometriosis has been reported in about 63% of infertile women worldwide [12]. According to the findings of a local study. Endometriosis was found in 12% of infertile women who had diagnostic laparoscopy. Endometriosis was diagnosed among 4 (12.5%) and 2 (11.1%) cases of primary and secondary infertility respectively [13]. The results are consistent with the findings of another study conducted by Amogh Chimote from India, results showed a 32% prevalence of endometriosis [14]. Frequency of endometriosis reported in this study is a bit higher than the frequency reported in the local literature. i.e. this study; 37.21% vs. frequency range reported in local literature; 5%-17%. Previous research by Parveen S found a substantially lower prevalence of endometriosis. Specifically, (14% and

8%)[15]. According to Sebastio F de Medeiros from Brazil, endometriosis was found most frequently in women having laparoscopic infertility treatment, i.e. 73.6% [16]. The results of current study demonstrated that the frequency of endometrium in the younger age group were highest i.e. 19-25 years. Fecundity in normal couples' ranges from 0.15 to 0.20 each month and diminishes with age. Endometriosis patients have a reduced monthly fecundity of around 0.02-0.1 per month [17]. Furthermore, endometriosis is linked to a reduced live birth rate [18]. In the present study, highest frequency of primary infertility i.e. 68.8% was found among females who were diagnosed with endometriosis. Another study shows that up to 50% of women with endometriosis are infertile [19]. Based on typical laparoscopic observations, pelvic anatomical distortion, or the "pelvic factor," can more easily explain infertility in individuals suffering from severe endometriosis. Major pelvic adhesions can limit release of oocyte from the ovary, impede ovum pickup, or restrict ovum transport. Endometriosis patients may experience endocrine and ovulatory problems such as luteinized unruptured follicle syndrome, poor folliculogenesis, multiple LH surges and luteal phase defects [20]. Researchers have argued over the relationship between endometriosis and infertility for a long time. Although a significant amount of research suggests a link between endometriosis and infertility, a causal relationship has not been proved. Endometriosis, however, can cause pelvic adhesions or abnormal pelvic anatomy that prevent fertility.

CONCLUSIONS

The findings of this study show an increasing trend in endometriosis identification or occurrence in women with infertility. Endometriosis with infertility is not an uncommon disease in women. Though laparoscopy is intrusive method, but with the right training the issues and complications that come with it can be reduced, which benefits the patients and offers us a clear picture or pathology of the disease.

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