

Frequency of Endometriosis among Women Undergoing Diagnostic Laparoscopy in Cases of Sub-Fertility

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Abstract

Objectives: To determine the frequency of endometriosis among women undergoing diagnostic laparoscopy in cases of sub-fertility. **Material and methods:** A total of 169 women having primary infertility were included in this cross-sectional study which was done from January 2016 to June 2017 at Department of Obstetrics and Gynecology, Nishtar Hospital, Multan. Complete history was taken for age, duration of infertility, duration of marriage, sexual history, history of intake of contraceptive drugs, past medical/surgical history and if patients had taken any previous treatment for fertility issues. General physical as well as systemic examination were performed by a trained doctor along with pelvic examination. Baseline investigations like ESR, FSH, LH, serum prolactin levels were done. These study cases will undergo pelvic ultrasound and laparoscopy was performed in proliferative stages of menstrual cycle. Data was analyzed by using SPSS Version 20. **Results:** Mean age of our study cases was noted to be 28.92 ± 4.55 years (with minimum age was 22 years while maximum age was 38 years). Family history of infertility was noted in 33 (19.5%) of our study cases. Mean duration of marriage in our study cases was noted to be 4.33 ± 1.03 years. Mean BMI of our study cases was 22.21 ± 3.01 kg/m² (with minimum BMI was 18 kg/m² while maximum BMI was 32 kg/m²). Our study results have shown that obesity was present in 36 (21.3%) of our study cases. In our study, endometriosis was seen in 27 (16 %) of our study cases. Stage 1 endometriosis was seen in 4 (2.4%), stage 2 endometriosis in 6 (3.6%), stage 3 endometriosis in 8 (4.7%) and stage 4 endometriosis in 9 (5.3%) of our study cases. **Conclusion:** Frequency of endometriosis was high in our study. Our study results indicate that it is a common gynecological problem which usually found in patients of young and reproductive age. Laparoscopy is a minimally invasive procedure which requires minimum time of hospitalization and minor post-operative discomfort in diagnosis of endometriosis. Laparoscopic procedures in women with infertility should be employed earlier as they are relatively less invasive, convenient and more accurate tool for diagnosis. There is a dire need to bring about awareness among infertile women to consult infertility clinics at proper time. It emphasizes the need to recognize the outcomes of laparoscopic procedures for management and diagnostic purposes.

Keywords: Primary infertility, endometriosis, laparoscopy

Introduction

Infertility has been implicated with significant increase in personal sufferings and distress of family life. According to United Nations Organization (UNO) "Reproductive health is a state of complete physical mental and social well-being and not merely the absence of disease or infirmity in all matters relating to the reproductive system and to its functions and processes". Estimated prevalence of infertility in Pakistan has been reported to be approximately 22 %. The underlying factors responsible for infertility among women may include; anovulatory disturbances, tubal disorders, endometriosis, uterine and cervical characteristics¹. Laparoscopic examinations are used to gain information of ovarian as well as tubules status, normal texture of uterine and excellent diagnostic tool to diagnose different pathologies of the pelvic such as endometriosis, pelvic inflammatory illnesses, pelvic congestion and TB². Endometriosis has been clinically recognized since 1860.

Different rates of endometriosis have been reported with great variation in their proportions such as; 0.7 – 11% those visiting health care facilities, 2-22% among those in surgical sterilizations, around 50 % among infertile females and 5-75 % in females presenting with chronic pelvic pain³⁻⁵. Endometriosis is referred as invasion of endometrial glands or stroma at different locations other than that of comprising uterine cavity and situation is specified by different clinical presentations and various surgical manifestations while most of the time there is negative correlation between these two⁶. Endometriosis has been reported to cause issues relating to the fertility, painful menstrual cycles and sexual intercourse. It can cause fertility problems and symptoms such as painful menstruation and painful sexual intercourse⁷. Laparoscopic surgical procedures are employed for the removal of clearly visible parts of endometriosis. Different review trials have found that laparoscopic surgical options are beneficial in patients having mild to moderate endometriosis to treat sub-fertility⁷. Endometriosis

was 12.5% in infertile women who underwent laparoscopy¹ while another study from Pakistan reported 16.8% frequency of endometriosis with laparoscopy.⁸

Infertility is linked with various social implications in our society, particularly for women^{9,10}. It leads to certain social and psychological issues for the targeted population, hence management of these patients remain challenging task for clinicians.

Material and methods

A total of 169 women having primary infertility were included in this cross-sectional study which was done from January 2016 to June 2017 at Department of Obstetrics and Gynecology, Nishtar Hospital, Multan. Sample size (n = 169) was calculated by using prevalence of endometriosis in primary infertility reported to be 12.5 %¹ and margin of error was 5%, with 95 % confidence level.

Primary Infertility was defined as women who never had conceived in their reproductive age, it was labeled as positive for all those married women who did not conceive after 2 years of unprotected intercourse while endometriosis was defined as growth of ectopic endometrial tissue outside the uterine cavity to be diagnosed on laparoscopy. Patients having contraindications for laparoscopy such as with history of severe cardiopulmonary disease, presence of large abdominal masses, Genital TB, diaphragmatic hernia and gross obesity on history and examination, male factor of infertility, history of ovulation failure and sexual dysfunction, Previous history of diagnostic laparoscopy for infertility were excluded from our study. Complete history was taken for age, duration of infertility, duration of marriage, sexual history, history of intake of contraceptive drugs, past medical/surgical history and if patients had taken any previous treatment for fertility issues. General physical as well as systemic examination were performed by a trained doctor along with pelvic examination. Baseline investigations like ESR, FSH, LH, serum prolactin levels were done. These study cases will undergo pelvic ultrasound and laparoscopy was performed in proliferative stages of menstrual cycle. Data was analyzed by using SPSS Version 20.

Results

Our study comprised of 169 women with primary infertility meeting inclusion and exclusion criteria of our study. Mean age of our study cases was noted to be 28.92 ± 4.55 years (ranging; 22 – 39 years) and 97 (57.4%) belonged to age group of 20 – 30 years. Family history of infertility was noted in 33 (19.5%) of our study cases. Mean duration of marriage in our study cases was noted to be 4.33 ± 1.03 years (ranging; 4 – 7 years) and 104 (61.5%) reported duration of marriage ranging from 2 years to 4 years. Mean BMI of our study cases was 22.21 ± 3.01 kg/m² (ranging 18 kg/m² to 32 kg/m²) and 36 (21.3%) of our study cases.

In our study, endometriosis was seen in 27 (16 %) of our study cases. Stage 1 endometriosis was seen in 4 (2.4%), stage 2 endometriosis in 6 (3.6%), stage 3 endometriosis in 8 (4.7%) and stage 4 endometriosis in 9 (5.3%) of our study cases.

Endometriosis was stratified with regards to age, family history of infertility, duration of marriage, obesity and mean duration of marriage and p-values were calculated to be $p = 0.002$, $p = 0.003$, $p = 0.000$, $p = 0.000$ and $p = 0.694$ respectively.

Table No. 1
Stratification of endometriosis with regards to age.
 (n=169)

Age groups	Endometriosis		P – value
	Yes (n=27)	No (n=142)	
20 – 30 Years (n=97)	08	89	0.002
31 – 40 Years (n=72)	19	53	
Total	169		

Table No.2
Stratification of endometriosis with regards to family history.
 (n=169)

Family History	Endometriosis		P – value
	Yes (n=27)	No (n=142)	
Yes (n=33)	00	33	0.003
No (n=136)	27	109	
Total	169		

Table No. 3
Stratification of endometriosis with regards to Duration of marriage.
 (n=169)

Duration of marriage	Endometriosis		P – value
	Yes (n=27)	No (n=142)	
2 – 4 Years (n=104)	08	96	0.000
More than 4 Years (n=65)	19	46	
Total	169		

Table No. 4
Stratification of endometriosis with regards to obesity.
 (n=169)

Obesity	Endometriosis		P – value
	Yes (n=27)	No (n=142)	
Yes (n=36)	19	17	0.000
No (n=133)	08	125	
Total	169		

Discussion

Infertility leads to several psychological and social issues among infertile women^{11,12}. Timely diagnosis of underlying causes followed by proper management is the hallmark to relieve suffering family from such stress¹³.¹⁴. This study was planned to determine the frequency of endometriosis in women with primary infertility.

Our study comprised of 169 women with primary infertility meeting inclusion and exclusion criteria of our study. Mean age of our study cases was noted to be 28.92 ± 4.55 years (ranging 22 – 29 years) and 97 (57.4%) belonged to age group of 20 – 30 years. Preciado et al¹⁵ from Mexico reported 30.3 ± 3.9 years mean age of infertile women undergoing diagnostic laparoscopy. These findings are close to our study results. Mishra et al¹⁶ reported 29 ± 4 years mean age of infertile women which is similar to that of our study results. Similar results have been reported by Peterson et al¹⁷. Naz et al¹ reported 28 years mean age of the women with primary

infertility which is similar to that of our study results.

Family history of infertility was noted in 33 (19.5%) of our study cases. Mean duration of marriage in our study cases was noted to be 4.33 ± 1.03 years (ranging 4 – 7 years) and 104 (61.5%) reported duration of marriage ranging from 2 years to 4 years. Naz et al¹ reported 3.7 years mean duration of primary infertility which is similar to that of our study results. Similar results have been reported by Haider et al¹⁸.

Mean BMI of our study cases was 22.21 ± 3.01 kg/m² (ranging from 18 – 32 kg/m²) and obesity present in 36 (21.3%). In our study, endometriosis was seen in 27 (16 %) of our study cases. Stage 1 endometriosis was seen in 4 (2.4%), stage 2 endometriosis in 6 (3.6%), stage 3 endometriosis in 8 (4.7%) and stage 4 endometriosis in 9 (5.3%) of our study cases. Similar pattern has been reported by Ashraf et al¹⁹. Preciado et al¹⁵ from Mexico reported 14.21 % endometriosis in women with primary infertility. These results are close to our study findings. A study from Saudi Arabia conducted by Rouze et al²⁰ reported 23.8 % endometriosis in infertile women which is in compliance with that of our study results. Mishra et al¹⁶ reported very high frequency of endometriosis to be 48.38 % which is quite high than that of our study results.

Parveen et al²¹ reported 26 % endometriosis in infertile women from Lahore. Another study from CMH Lahore reported as low as 5.5 % endometriosis in women with primary infertility²². Naz et al²³ reported 11 % endometriosis in patients with primary infertility which is similar to that of our study results. Khawaja et al⁸ reported 16.8 % endometriosis in primary infertile women. The frequency of Endometriosis was 12.5% in infertile women who underwent laparoscopy¹ these findings are similar to that of our study results.

Conclusion

Frequency of endometriosis was high in our study. Our study results indicate that it is a common gynecological problem which usually found in patients of young and reproductive age. Laparoscopy is a minimally invasive procedure which requires minimum time of hospitalization and minor post-operative discomfort in diagnosis of endometriosis. Laparoscopic procedures in women with infertility should be employed earlier as they are relatively less invasive, convenient and more accurate tool for diagnosis. There is a dire need to bring about awareness among infertile women to consult infertility clinics at proper time. It emphasizes the need to recognize the outcomes of laparoscopic procedures for management and diagnostic purposes.

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