

Frequency of Female Primary Subfertility Factors on Diagnostic Laparoscopy

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ABSTRACT

Aim: To determine frequency of female primary subfertility factors in patients undergoing diagnostic laparoscopy for subfertility.

Methods: This descriptive study was conducted in the Department of Obstetrics and Gynaecology, Nishtar Hospital, Multan from October 2014 to April 2015. A total of 80 married primary subfertile females diagnosed on history fulfilling the inclusion criteria were included in the study.

Results: Mean age of the patients was 27.66±3.21 years with range 20-35 years. Intraoperative findings of laparoscopy revealed 39 cases (48.7%) of polycystic ovary, pelvic inflammatory disease was evident in 15(15.7%) women, endometriosis in 9(11.2%) and uterine pathology in 8(10%). There was no visible cause of subfertility in 3(3.7%) women.

Conclusion: Polycystic ovary was the major cause of primary subfertility followed by pelvic inflammatory disease, tubal blockage, endometriosis and uterine pathology respectively.

Key words: Primary subfertility, Polycystic ovary, Pelvic inflammatory disease.

INTRODUCTION

Subfertility is defined as inability to conceive after 12 months of regular unprotected intercourse¹. Subfertility is classified as primary and secondary. Those who never conceived said to have primary subfertility, while those who have become pregnant at least once but unable to conceive again to have secondary subfertility². Subfertility causes great stress to many couples causing increasing number of them to seek specialist subfertility care. Worldwide it is estimated that 1 in 7 couples have problem in conception while the incidence similar in most countries independent of level of country development³.

In general population, conception is expected to occur in 84% of women within 12 months and 92% within 24 months⁴. Between 8 to 12% of couples in the world have difficulty in conceiving a child at some point in their lives thus affecting 60-80 million people⁵. Hence most of the clinicians defer investigations and treatment for 1 year if no apparent problem is observed in the couple. Following an understandable reassurance and counseling all that needed is wait and see policy⁶.

Subfertility is a complex disorder resulting from one or more factors in either partner i.e., male 2.5% and female partner account for 40-60%. Causes of female subfertility include anovulation 25%, tubal

15%, endometriosis 10%⁴, pelvic inflammatory disease 5.5%⁷, polycystic ovary 20-33%⁸, while other factors may be general factor, hypothalamic pituitary, ovarian, cervical vaginal and genetic⁹. In a female with regular menstrual cycle normal ovulation can be expected in upto 80% of cases. Various tests to assess ovulation include rise in .5-5.5 years, basal body temperature chart by 0.5°C in mid cycle, in second half of menstrual cycle, day 21 serum progesterone more than 30 nmol/L and pelvic ultrasonography¹⁰.

A careful bimanual pelvic examination and pelvic ultrasonography can give some clue regarding anatomy, but certain pelvic abnormalities can be missed and upper genital tract anatomy cannot be evaluated without direct visualization. Minimal invasive surgery has revolutionized the things¹¹. Modern laparoscopy has become an essential part of evaluation in a subfertile woman¹². Hysterosalpingography can identify abnormalities of internal tubal structure and uterine cavity¹³. Even in the presence of normal uterine cavity and patent tubes peritubal and ovarian adhesions cannot be identified. This is the point where laparoscopy takes advantages over hysterosalpingography¹⁴. In addition, pelvic endometriosis can be visualized with laparoscope. Laparoscopy is investigation of choice, which allows direct visualization of peritoneal cavity, ovaries, tubes, uterus and other pathology like endometriosis and adhesion chromotubation demonstrate the patency of tubes¹⁵.

The objective was to determine frequency of female primary subfertility factors in patients undergoing diagnostic laparoscopy for subfertility.

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MATERIAL AND METHODS

This descriptive study was conducted in the Department of Obstetrics and Gynaecology, Nishtar Hospital, Multan from October 2014 to April 2015. A total of 80 married primary subfertile females diagnosed on history fulfilling the inclusion criteria were included in the study.

RESULTS

Majority of women 45 (66.2%) were between 25-29 years of age followed 20 (25%) women who were 30-34 years of age (Table-1). Out of 80 women, 50(62.5%) have duration since marriage 21 (26.3% women had duration since marriage 5.5 to 9.5 years (Table-2). Regarding presenting complaints, there were 3 (3.7%) women presenting with irregular bleeding (Table-3). There was no visible cause of subfertility in 3 (3.7%) women as shown in table-4. Mean age of the patients is shown in table-5. Majority of women 71 (88.7%) had one cause of subfertility while 6(7.5%) had no causes of subfertility (Table 6).

Table 1: Distribution of age (n=80)

Age (years)	n	%age
20-24	12	15
25-29	45	56.2
30-34	20	25
35 and above	03	03.8

Table 2: Distribution of subfertile since marriage (n=80)

Duration	n	%age
1.5-5.5	50	62.5
5.5-9.5	21	26.3
9.5-13.5	09	11.2
35 and above	03	03.8

Range= 1.5 year to 11 years.

Table 3: Presenting complaints (n=80)

Complaint	n	%age
Irregular bleeding	03	03.7
Pain left abdomen	03	03.8
Scanty menses	03	03.8
Subfertility	71	88.7

Table 4: Intraoperative findings of laparoscopy (n=80)

Finding	n	%age
Polycystic ovary	39	48.8
PID	15	18.8
Tubal blockage	12	15.0
Endometriosis	09	11.5
No visible cause	03	03.7

Table 2: Distribution of subfertile since marriage (n=80)

Age (years)	n	%age
1.5-5.5	50	62.5
5.5-9.5	21	26.3
9.5-13.5	09	11.2
35 and above	03	03.8

Table-5: Descriptive statistics

Variable	n
Age (years)	27.66±3.21
Duration since marriage (years)	5.51± 2.5
Duration of subfertility (years)	5.4± 2.6

Table 6: Causes of subfertility on diagnostic laparoscopy (n=80)

Cause	n	%age
No visible cause	03	-03.8
One cause	71	88.7
Two causes	06	07.5

DISCUSSION

During the past decade there has been a dramatic increase in the number of women seeking infertility evaluation. Infertility is a problem of global proportion; worldwide more than 70 million couples suffer from infertility. Infertility leads to considerable personal suffering and disruption of family life. In Pakistan the prevalence of infertility is reported as 21.9%¹⁶. The common factors responsible for infertility in females are anovulatory disorder, tubal factors, endometriosis, uterine and cervical factors¹⁷.

Present study was conducted to find causes of primary subfertility on diagnostic laparoscopy. Cause of subfertility was due to polycystic ovary in 39(48.7%) cases, pelvic inflammatory disease in 15 (16.7 cases, tubal blockage in 12(15%), endometriosis in 9(11.2%) and uterine pathology in 8 (10%) cases. There was no visible cause of subfertility in 3(3.7%) women. The age of the patients ranged 20-35 years. Mean age of the patients was 27.66±3.21 years. These results are comparable with local data as immense body of literature is available regarding causes of subfertility.

Nousheen Aziz evaluated the female factors in infertility laparoscopically. The duration of infertility was 2-5 years in majority of patients (59.1%) of primary infertility in her study¹⁸. Laparoscopy revealed normal findings in 8(25%) patients with primary infertility had no visible abnormality. The common finding was tubal blockage in 7(21.9%) cases of primary infertility. Five (15.6%) cases of primary infertility were detected as polycystic ovaries. Mussarat et al found the leading cause of primary infertility was polycystic disease (29%). Other causes were bilateral tubal blockage (23.5%), 17% has PID and fibroid uteri, while one patient showed endometriosis as well as one patient had no obvious pathology (5.9%)¹². Naz et al found on laparoscopy that 70 cases (51.5%) with primary infertility had no visible abnormality¹⁹. Bilateral tubal blockage was found in 32 (23.5%) primary infertility.

The female factors contribute the most 40-50% in the etiologies of infertility as stated in a study²⁰.

Shamin et al have described diagnostic laparoscopic findings in infertile patients in the Saudi population²¹. Amongst the primary infertility patients 10(26.3%) revealed no abnormal laparoscopic findings. The ovulation failure the most common cause for female infertility (60.3%) and tubal occlusion was responsible for 20.9% of the female factor²². In South Africa, the most common causes of female infertility were ovulation disorders (41%), while tubal obstruction contributed to only 5% of cases, tubal factor infertility was overall the most common cause of infertility²³.

In one study conducted on 57 patients who underwent diagnostic laparoscopy, 11(19.3%) had normal findings, 46(80.7%) had pathologic abnormalities. In another study at laparoscopy bilateral tubal patency was demonstrated in 86% but 3% had bilateral blocked tubes and 11% had unilateral tubal occlusion. Boricha et al have reported maximum number of cases had duration of infertility between 4-7 years. The most common finding on laparoscopy was found to be ovarian factor, affecting 16(32%) cases. Other findings were endometriosis 11(22%), tubal pathology 10(20%) cases, uterine pathology in (18%) and peritoneal factor in 6(12%) cases.

Diagnostic laparoscopy is invaluable technique; it must be carried out for complete assessment of female infertility factors. Studies have shown major benefits to the patients, while due to the risk of complications, laparoscopy is frequently postponed to the final stage of infertility evaluation or even after treatment trials have failed.

CONCLUSION

Polycystic ovary was the major cause of primary subfertility followed by pelvic inflammatory disease, tubal blockage, endometriosis and uterine pathology respectively.

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