

# Laparoscopy as a diagnostic tool in evaluation in infertility

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## Abstract

**Background:** The role of diagnostic laparoscopy in women with infertility is well established. It is helpful not only in the identification of the cause but also in the management of the same at that time. **Aim:** The objective of present study was to find out different causes of female infertility with diagnostic laparoscopy and their comparative frequency in primary and secondary infertility. **Materials and methods:** It is a prospective study conducted in sixty cases of infertility (primary and secondary) were selected for diagnostic laparoscopy. All the women who failed to conceive after 12 months of regular intercourse were included in study. **Results:** 60 infertile women underwent laparoscopy during the study period, 40 (66%) had primary infertility while 20 (33%) secondary infertility. 12 (20%) patients with primary and 2 (2.4%) patients with secondary infertility had no visible abnormality. The common finding was tubal blockage in 10 (16.6%) and 5 (8.3%) cases of primary and secondary infertility respectively. 5 (8.3%) cases of primary infertility were detected as polycystic ovaries (PCO) and 3 (5%) in cases of secondary infertility. Endometriosis was found in 2 (1.6%) case with primary infertility and 2 (1.6%) cases with secondary infertility. **Conclusion:** Laparoscopy is very effective method in evaluating these infertile women to prevent delay in management.

**Key Words:** Laparoscopy, Infertility, Tubal blockage.

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## INTRODUCTION

Infertility is a worldwide problem affecting 8-12 percent couple (50-80 million) during their reproductive lives.<sup>1</sup> It is estimated that infertility in India around 4-6 percent and according to NFHS-1 childlessness is around 2.4 percent of currently married women over 40 years in India.<sup>2</sup> The prevalence of infertile individuals is increasing globally.<sup>3</sup> Tuboperitoneal pathology is responsible for 40-50% cases of infertility. Experience has shown that routine examination and diagnostic procedures is not enough to evaluate pelvic pathology of

infertile women. The ability to observe and treatment the uterus, fallopian tubes, and ovaries during laparoscopy has made it a gold standard to evaluate pelvic pathology.<sup>4</sup> Laparoscopy provides information regarding tubal and ovarian status, uterine normality and standard means of diagnosing various pelvic pathology e.g. pelvic inflammatory disease, endometriosis, pelvic congestion and tuberculosis.<sup>5,6</sup> Beside this it is the most useful method of assessment of the tubal patency. After normal hysterosalpingography, laparoscopy reveals abnormal findings in 21.68% cases of infertile couples.<sup>7</sup> Untreated pelvic inflammatory disease, post-abortion, postpartum infection and tuberculosis are common factors of infertility in developing countries.<sup>8</sup> This study taken up to determine the different causes of female infertility on diagnostic laparoscopy.

## MATERIALS AND METHODS

This prospective study conducted in the department of Obstetrics and Gynaecology, after approval from the human ethical committee of our institute. 60 infertile patients attended with infertility (primary and secondary) were selected for diagnostic laparoscopy. Inclusion

criteria: All the women who failed to conceive after 12 months of regular intercourse.

Exclusion criteria: Couples who had not lived together for at least 12 months, those with male factor infertility, and patients with absolute or relative contraindication for laparoscopy i.e. any pre-existing cardiovascular or respiratory condition, generalized peritonitis, intestinal ileus or obstruction and abdominal hernia. Informed written consent was obtained from every patient. All the patients were admitted in the ward one day prior to procedure. Before the procedure, apart from complete history and detailed examination, baseline investigations (complete blood count, blood sugar, kidney and liver function tests, ECG, chest X-ray) were performed as per our institutional protocol for preanaesthesia check-up. Laparoscopy was done in proliferative phase of menstrual cycle. To test the patency of tubes, chromotubation was

done in all cases under laparoscopic vision by using 10-15 ml of autoclaved methylene blue dye. During the procedure, the pelvis was inspected, including uterus, fallopian tubes, round ligaments, uterovesical pouch, uterosacral ligaments, and Pouch of Douglas. The tubes were inspected for any abnormality in their length and shape. Both ovaries were examined regarding their size, shape, thickness of peripheral follicles, evidence of ovulation. All the data was collected and were tabulated and percentages calculated.

## RESULTS

The ratio of primary and secondary infertility was 7:3. Out of 60 patients, 40 patients (60%) presented with primary infertility and 20 patients (40%) presented with secondary infertility.

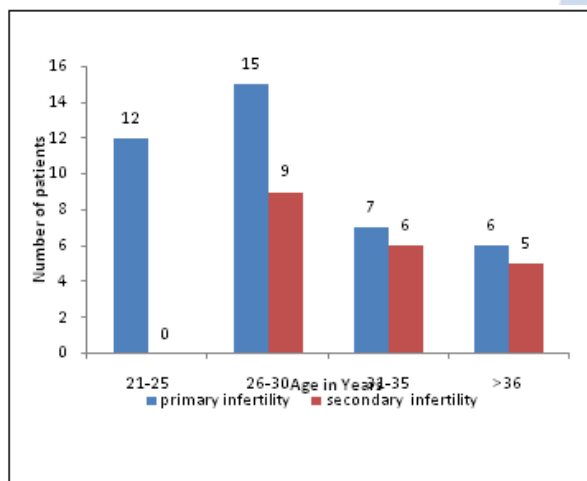


Figure 1: Age Distribution in study

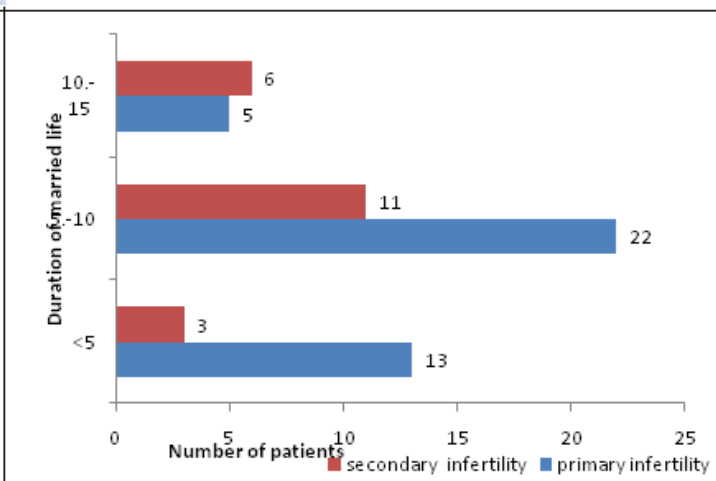


Figure 2: Distribution according to duration of married life

The mean age of presentation was 26-30 years in primary infertility and secondary infertility.

Majority of patients had an average married life of 5-10 years in both primary and secondary infertility in this study. (56.6%)

Table 1: Laparoscopic findings regarding cause of female infertility

Laprosopic Findings	Primary Infertility		Secondary Infertility		Total	
Normal findings	12	20	2	3.4	14	23.4
Tubal block	10	16.6	5	8.3	17	24.9
unilateral	5	50	2	40	6	
bilateral	5	50	3	60	8	
Hydrosalpinx	2	3.4	1	1.6	3	5
TO Mass	1	1.6	2	3.4	3	5
Ovarian problems (PCOS,Ovarian cyst, etc)	5	8.3	3	5	8	13.3
Adhesions	2	3.4	1	1.6	3	5
Endometriosis	2	3.4	1	1.6	3	5

Laparoscopy revealed normal findings in 14 out of 60 patients, 12 (85.7%) patients with primary infertility and 2 patients (14.3%) with secondary infertility. Abnormal findings were present in 46 (76.7%) patients out of 60. It was seen that the most common cause

observed by laparoscopy was tubal blocks 15 (25%) of total, 5 had bilateral tubal block (50%) 5 had unilateral block (50%). This was followed by polycystic ovaries 8 (13.3%).

## DISCUSSION

The role of diagnostic and therapeutic hystero-laparoscopy in women with infertility is well established. It is helpful not only in the identification of the cause but also in the management of the same at that time. The duration of infertility was 5-10 years in majority of patients (56.6%) of primary and secondary infertility. Which is coincidence with Krishna C<sup>9</sup> study Similar results reported from Lahore i.e. 58% of patients had infertility of 2-5 years. In this study, normal pelvic findings and patent tubes on laparoscope was found in 24.9% cases of infertility. normal pelvic findings and patent tubes on laparoscope was found in 23.4% cases of infertility The most commonly found pathologies were tubal blockage, polycystic ovarian disease, endometriosis, uterine anomalies, fibroid uterus. Among ovulatory disorders polycystic ovarian disease was the commonest endocrine disorder associated with anovulation. In the present study the incidence of polycystic ovarian disease was 13.3% was found in cases of infertility. According to WHO, malnutrition, pelvic tuberculosis and puerperal infections leading to tubal blockage is still the major cause of infertility.<sup>10</sup> It is found that 39-41% of tubal factor infertility is associated with tuberculosis, which is more common in developing countries.<sup>11</sup> Geetika Jain<sup>12</sup> study has Tubal disease in 62.8% women with primary infertility and 54.8% women with secondary infertility which is much higher than other similar studies which have found tubal disease ranging from 21% to 30% in both the groups.<sup>13</sup> Bilateral block was found in majority of infertile women in study group, in primary and in secondary infertility, which is again higher than in other similar study.<sup>5</sup> Geetika Jain<sup>12</sup> found that 6.6% women with primary infertility and 6.1% of women with secondary infertility patients had polycystic ovarian disease (PCOD) but the study by Boricha *et al.*, found PCOD as the commonest cause of infertility in both primary and secondary infertility.<sup>14</sup> Tubal occlusion and peritubal or periovarian adhesions are factors responsible for inhibition of ovum pickup and transport. Laparoscopy is thus a definitive way to diagnose them. In India, most of patients usually go to alternative medicine and untrained health practitioners for the treatment of infertility, which leads to further delay in proper management. Laparoscopy not only helps in identification of unsuspected pathology, but also contributes to decision making. It should be considered initially as part of the infertility evaluation in women, especially those with a history of pelvic inflammatory disease, pelvic surgery, and chronic pelvic pain.

## CONCLUSION

Tubal disease is still the major cause for infertility in developing countries; therefore laparoscopy should be considered earlier in the workup of infertility and would prevent empirical ovulation induction. Laparoscopy is very effective method in evaluating these infertile women to prevent delay in management.

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