

“Role of Diagnostic Laparoscopy in Evaluation of Pelvic Organ in Case of Infertile Women”

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Abstract

Aim and Objective: The aim of the study is to present the findings of different pelvic organs by laparoscopy in cases of infertile patient and correlate the infertile patient and correlate the infertility with the following factors: Ovaries – whether ovulation occur or not or any other pathology, Tubes-whether normal or any pathology, If there is any pelvic adhesion, mass or collection, Uterus normal or any abnormalities, Other pathology. **Methods:** The study group comprised 200 cases of infertile patients who were admitted and treated in the department of Gynecology and obstetrics in BIRDEM, Dhaka, Bangladesh during the period of January 2000 to December 2001. This patient includes both primary and secondary infertility cases, and the patients of 20-40 years ages were included in this study. Those patients whose husbands had abnormality in semen analysis were exclude from this study and also the patients whose age were above 40 years and below 20 years were also excluded from the study. Before Admission, assessment of these patients was carried out carefully before starting the endoscopic procedures. A full history was taken which was followed by thorough general, abdominal and pelvic examinations then Laparoscopy was performed under general anesthesia. **Results:** The mean age ranged from 20 to 40 years. Among them 114 (57%) patients were aged between 21 to 30 years. Laparoscopic findings showed that 138 (69%) patients had normal uterus while 62 (31%) had abnormalities of uterus. Among them 18 (9%) had uterine myomas. Right tube One hundred and fourteen (70%) had normal tubes and left tube one hundred and thirty six (68%) had normal tubes. Peritubal adhesions of right tube were 20 (10%) and Peritubal adhesions of left tube were 22 (11%), bilateral tubal block had 6 (3%). One hundred and forty four (72%) patients had normal pelvic peritoneum, 26 (13%) had pelvic adhesions, probably from pelvic inflammatory diseases and 10 (5%) had frank endometriosis. One hundred (50%) had normal ovaries, 48 (24%) in right side & 46 (23%) in left side had polycystic ovaries (PCO), 10 (5%) in ride side & 12 (06%) in left side had periovarian adhesions 10 (5%) in right side & 12 (06%) in left side had simple ovarian cysts and 10 (5%) in right side & 12 (06%) in left side had endometriotic (chocolate) cysts. **Conclusion:** Ovarian pathology was the highest pelvic abnormality (80%) followed by uterine pathology 31% & tubal pathology 24%.

Key words: Diagnostic laparoscopy, infertility.

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I. INTRODUCTION

Infertility is defined as the failure to conceive after 1 year of intercourse without contraception. Sterility implies an intrinsic inability to achieve pregnancy, whereas infertility implies a decrease in the ability to conceive infertility is synonymous with sub-fertility [1, 2]. Eighty percent of couples experiencing unprotected intercourse usually achieve pregnancy within one year. An additional 10% will achieve pregnancy in the second year. As such 10% remain

infertile by the end of second year. In fact the male is directly responsible in 30 percent, the female 40 percent and both are responsible in 20 percent cases. The remaining 10 percent remain unexplained inspire of through investigations with modern technical knowledge. The first step of investigation of an infertility couple is to do a semen analysis. If the semen analysis reveals abnormal or borderline parameter, the test should be repeated at least twice at 2-3 weeks interval. A normal result on a properly collected

specimen invariably excludes a significant male factor. When there is azoospermia or severe oligospermia further investigations are mandatory to establish the diagnosis. On ovulation and its hormonal concomitant may be obtained by periovulatory hormonal and ovarian ultrasound assessment [11]. Laparoscopy is a reliable procedure which improves diagnostic accuracy in pelvic disorders and can reveal information which may make laparotomy unnecessary [3]. Diagnosis of endometriosis is usually based on laparoscopic findings [12]. The timing of laparoscopy is one of the key aspects of the discussion of the place at which the couple and the practitioner feel the investigation should proceed. In a young couple with a negative history, it is usually offered after all other tests are completed and discussed; in older couples or if the history suggests a pelvic factor, it is often indicated as one of the primary methods of evaluation [12].

II. OBJECTIVE

To determine the role of diagnostic laparoscopy in the evaluation of female infertility in BIRDEM and to find out the proportion of different types of pelvic pathologies and conditions in women of infertility.

III. METHODOLOGY

This is a retrospective study for cases of diagnostic laparoscopy that had been carried out in BIRDEM, Dhaka, Bangladesh during the period January 2000 to December 2001. Assessment of these patients was carried out carefully before starting the endoscopic procedures. A full history was taken which was followed by thorough general, abdominal and pelvic examinations. Laparoscopy was performed under general anaesthesia with controlled ventilation. The patients were placed in a modified lithotomy position and then 15° to 20° Trendelenberg tilt was employed. The bladder was catheterized and a pelvic examination was carried out. The uterine canula was secured to the cervix by means of a single toothed tenaculum. After induction of proper pneumoperitoneum with CO₂, laparoscopy was performed using an infra-umbilical entry. Multiple punctures technique was employed and the peritoneal cavity was inspected thoroughly. Methylene blue dye solution was used for the observation of tubal patency with spill of dye in

peritoneal cavity. Then the instruments were removed, pneumoperitoneum was deflated, and the umbilical incision was closed with 3-0 dexton suture.

IV. RESULTS

Two hundred cases were included in this study. The age ranged from 20 to 40 years. (Fig: 1) show the types of infertility, primary or secondary. The infertility of 134 patients (67 %) was primary while 66 patients (33%) had secondary infertility.

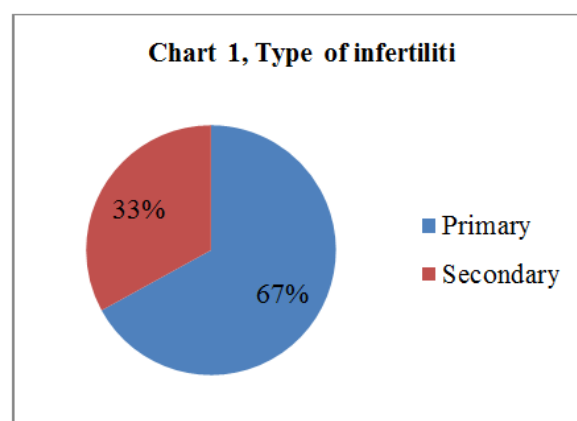


Fig-1: types of infertility

(Table-I) shows the age of the patients. This study show 14.5% of patients were 20 – 25 years age group, 42.5% of patients were 26 – 30 years, 30% patients were 31 – 35 years and 13% patients were 36 – 40 years age group.

Table-I: Incidence according to age distribution (N-200)

Age	No of cases	Percentage
20 - 25	29	14.5%
26 - 30	85	42.5%
31 - 35	60	30%
36 - 40	26	13%

(Table II) shows uterine pathology. In this study 69% of cases uterus was normal in size, 9 % cases there was Fibroid, 2 % cases uterus was Bicornuate, 18% cases uterus was bulky. 2% cases uterus could not be visualized due to adhesion.

Table-II: Laparoscopic Findings of Uterine pathology

Findings	No. of cases	Percentage
Normal Size	138	63%
Fibroid	18	9%
Bicornuate Uterus	4	2%
Bulky Uterus	36	18%
Non-visualization Uterus	4	2%

(Table III) shows tubal pathology Here in 70% cases tubes were normal in table III (a) and 68% cases tubes were normal table III (b), 10% cases there were

peritubal adhesion in table III (a) 11% cases there were peritubal adhesion in table III (b), 3% cases tubo ovarian mass in table III (a) and 2.5% cases tubo

ovarian mass in table III (b), in 6% case hydrosalpinx in table III(a) and 6.5% case hydrosalpinx in table III (b), in 5% cases Kinking in table III (a) and in 4% cases Kinking in table III (b), in 2% cases Tubes were

tortuous in table III (a) and 3% cases Tubes were tortuous in table III (b), 4% cases tubes were not visualized and in 5% cases tubes were not visualized in table III (b) due to H/O Salpingectomy or adhesion.

Table-III (a): Laparoscopic Findings of tubal pathology (Right Fallopian tube) (N-200).

Findings	No. of cases	Percentage
Normal	140	70%
Peritubal Adhesion	20	10%
Tubo ovarian mass	6	3%
Hydrosalpinx	12	6%
Kinking	10	5%
Tortuous	4	2%
Not visualized	8	4%

Table-III (b): Laparoscopic Findings of tubal pathology (Left Fallopian tube) (N-200).

Findings	No. of cases	Percentage
Normal	136	68%
Peritubal Adhesion	22	11%
Tubo ovarian mass	5	2.5%
Hydrosalpinx	13	6.5%
Kinking	8	4%
Tortuous	6	3%
Not visualized	10	5%

(Table IV) shows Patency of Fallopian Tube. In this study 90% of cases there was spillage of dye on right side, 89% of cases spillage of dye on left side.

10% cases no spillage on dye on Right side and 9% cases no spillage of dye on left side. In 3% cases no spillage on both sides.

Table-IV: Patency of Fallopian Tube, seen by Laparoscopy (N-200).

Findings	No. of cases	Percentage
Positiv on Right Side	180	90%
Negative on Right Side	20	10%
Positiv on Left Side	178	89%
Negative on Left Side	18	9%
Bilateral Tubal Block	6	3%

(Table V) shows ovarian pathology. In my study in 50% of cases ovary was normal in both table V, 24% cases there was cystic changes with thick capsule (Poly cystic ovary) in table V (a) and 23% cases there was cystic changes with thick capsule (Poly cystic ovary) in table V (b), 5% cases had small ovary in table V (a) and 6% cases had small ovary in table V

(b), 8% cases had endometriosis in table V (a) and 5% cases had endometriosis in table V (b), 5% cases had adhesion in table V (a) and 6% cases had adhesion in table V (b), 5% of cases had simple cyst in table V (a) and 6% of cases had simple cyst in table V (b) and in 3% in table V (a) and 4% in table V (b) cases ovaries were not seen.

Table-V(a): Laparoscopic Findings of Right Ovary (N- 100).

Findings	No. of cases	Percentage
Normal Ovary	100	50%
PCO	48	24%
Small ovary	10	5%
Endometriosis	16	8%
Adhesion	10	5%
Simple cyst	10	5%
Could not visualized	6	5%

Table-V(b): Laparoscopic Findings of Left Ovary (N- 200).

Findings	No. of cases	Percentage
Normal Ovary	100	50%
PCO	46	23%
Small ovary	12	6%
Endometriosis	10	5%
Adhesion	12	6%
Simple cyst	12	6%
Could not visualized	8	4%

(Table VI) shows peritoneal pathology. In my study, Pouch of Douglas was normal in 72% cases, 13% cases there was adhesion, 5% cases there was

endometriosis, 4% cases there was collection of fluid in Pouch of Douglas and in 6% cases pouch of Douglas was obliterated due to adhesion.

Table-VI: Laparoscopy Findings of Pouch of Douglas (N-200).

Findings	No. of cases	Percentage
Normal	144	72%
Adhesion	26	13%
Endometriosis	10	5%
Collection	8	4%
Dense adhesion with obliteration of POD	12	6%

V. DISCUSSION

Laparoscopy is a minimal invasive procedure, more convenient, and more precise for diagnosis of sub fertility in women [1]. So laparoscopy has achieved widespread use as a valuable diagnostic aid in gynaecology [5]. Trained personnel are the most important safety factor. In this retrospective study laparoscopy was done in 134 patients with primary infertility (67%) and 66 patients with secondary infertility (33%). Nabil *et al.* in a study showed primary infertility in 29.3% patients and secondary infertility in 59.6% cases [3]. Whereas Haider *et al.* in a study of 200 sub fertile patients found 66% with primary and 33% with secondary infertility which is same with the present study [1]. In this study, there are more cases of primary infertility. Peoples are now becoming conscious and they come for treatment earlier. This study shows 57% patient was 20-30 year age group and 43% was 31-40 age group. Ovarian pathology that causes an ovulation causes infertility. Dysfunction of ovulation is responsible for approximately 20-25% of infertility cases [2]. In these study 51% cases of right ovary was normal. Cystic enlargement of one or both of normal ovaries is as common as to be regarded as physiological. Ovarian cyst was found in our study simple cyst in right side was 10 patients (5%) and left side 12 patient (6%). Ovarian cyst was found higher than Nabil *et al.* (3.89%) and slightly higher than Adulsi *et al.* who found that 7.7% of their patients had ovarian cysts. In polycystic ovary syndrome, patient has slight enlarged and polycystic ovaries which have a smooth pearly white colour and thickened capsule. There is an ovulation. So the patient is sub fertile [4]. In our study PCO right side was 48 patients (24%) and left ovary was 46 patients (23%). Endometriosis is an aetiological factor of infertility [5]. In our study endometriosis in right side was 16 patients (8%) and

left side was 10 patients (5%). Pelvic endometriosis was found which is higher than Nabil *et al.* who showed the incidence was 3.69% and Adulesi *et al.* at 1.9%. Pereira *et al.* found 24.4% cases of endometriosis which is much higher. In 50% cases, ovaries of both sides visualized, but capsule was thick and there was adhesion to adjacent structures. In 2% cases both sided ovaries could not visualized due to adhesion. In these cases ovulation usually occur but infertility may be due to disturbed tubal function. By laparoscopy we can find out one anatomical integrity of tube i.e. tubal patency. Incidences of pathology of fallopian tube vary according sexually transmitted disease, post abortal and puerperal infection. In our country it in 25-30%.

Patency of fallopian tube seen by laparoscopy test positive on right side number of patient 180 (90%) and positive on left side number of patient 178 (89%), Negative on right side number of patient 20 (10%) and left side was 18 (9%). Bilateral tubal block 6 patients (3%). In 1995 Adulesi *et al.* found that 52% patients had both tubes patent and 48% patients had tubal block [6]. Nabil *et al.* in 1994 showed 46.06% of studied cases had bilateral tubal patency [3]. Pereira *et al.* found normal tubal patency in 53% cases, unilateral obstruction in 25.3%, and bilateral obstruction in 20.5% cases [7]. Abnormality of the uterus may cause infertility. Fibroid uterus may cause infertility and infertility may cause fibroid. But many women with fibroid succeed in becoming pregnant. In this study uterus was normal size in 69% cases, bulky in 18% cases. In 2% cases uterus could not visualized due to dense adhesion, fibroid was in 9% cases, uterus was smaller than normal size 02 % cases. In 13% cases there was dense adhesion & obliteration of pouch of Douglas. There was collection in 4% of cases. Other pelvic organs were normal in 79% cases, in 5% cases there

was endometriosis, in 06% cases there was dense adhesion. This is noticeably less than Nabil *et al.* who found pelvic adhesions in 35.23% patients in 1994 and 50% found in 1987 by Chang *et al.* [8]. Pereira *et al.* found pelvic adhesions in 18.6% patients [7]. Laparoscopy is very helpful in discovering unsuspected pelvic pathology especially pelvic adhesions [9]. It is superior in evaluation of tubal obstruction, pelvic adhesions and endometriosis than other methods [8]. It has permitted the development of concomitant accessory therapeutic procedures, thus defining the best treatment strategy for the infertile couples [7]. Laparoscopy is an essential step prior to tubal surgery as it may not only preclude the unnecessary operation but may also provide essential information regarding the nature and extent of future surgery [10]. Because of potential diagnostic and therapeutic benefits, patients with unexplained infertility and normal HSG findings should undergo diagnostic laparoscopy prior to ART [10]. The information regarding the pelvic organs can be obtained by laparoscopy [2]. It is now used as a principal method of assessment of pelvic organs [4]. It is an expensive and invasive procedure. But detailed documentation of all laparoscopic findings is important for proper management of infertility. Laparoscopy is an important and well established procedure which can help these patients by diagnosing the exact cause of infertility in time. It is also cost effective in the initial management of young women with infertility [13].

VI. CONCLUSION

In Bangladesh a major portion of our population lives in rural area, they are illiterate and blame female partner they regarded infertility as a disgrace, as a mark of divine displeasure, as a grounds for divorce and even for compulsory suicide. They do empirical treatment- love potions, amulets, prayers, sacrifices and the like. They are not aware of male infertility. Without laparoscopic examination, investigation of female infertility is not completed. It also diagnoses the exact pathology, so proper treatment can be given. In Bangladesh laparoscopy is available only in few centres and peoples cannot afford to come in this centres. Its use requires considerable expertise. Laparoscopy should be available in our country in that level that all infertile couple can get benefit from it so that female partners are not unnecessarily blamed and divorced. Improved maternity service and proper aseptic precaution during M. R. or abortion can reduce pelvic pathology.

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