

Laparoscopic Evaluation of Pelvic Organs In Case of Infertility

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Abstract:

Objective: Evaluation of pelvic organs by laparoscopy in infertile patient.

Background: Despite of absence of any known risk factor for infertility various studies indicate that there may be abnormalities in pelvic organ in about two-third of the cases, as evidenced by laparoscopic study. Present study was done to have an idea about the problem in a group of patients reporting to specialised centre.

Materials and Methods: It was a prospective study which was undertaken in Gynaecology and Obstetric Department at BIRDEM during the period of January 2001 to December 2001.

Results: The study group comprised 100 cases of infertile patients of age between 20 to 40 years. Sixty seven percent patients had primary infertility and 33% patients had secondary infertility. Size and shape of uterus was normal in 76% cases and bicornuate uterus was found in 2% cases.

Right ovary was normal in 51% patient and left ovary was normal in 53%. Polycystic changes of right ovary were observed in 23% and of left ovary in 22% cases. Right fallopian tube was normal in 71% and left fallopian tube was normal in 69% cases. Patency of right fallopian tube was found in 89% and patency of left fallopian tube was found in 90%. Eleven percent patients were found to have peritubal adhesion on right side and 10% on left side. Pouch of Douglas was found to be normal in 69% cases and 9% cases had adhesion with obliteration.

Conclusion: Laparoscopy is an important tool for diagnosing anatomical and pathological abnormalities of internal genital organs which plays a major role in infertility management. For treating infertility, we should give appropriate importance on laparoscopic evaluation of pelvic organs.

Key Words: Infertility, Laparoscopy, Pelvic organs.

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Introduction

Infertility is a public health problem both in developed and developing countries affecting 10 to 15% of couples.¹ It is defined as the inability of a couple to conceive after one year of unprotected and adequate

sexual intercourse. It can be primary in which case the couple or woman has never conceived before or secondary when there is prior conception irrespective of the outcome. Diagnostic laparoscopy is generally accepted as the most accurate procedure to detect pelvic organ pathologies like tubal pathology, endometriosis, PID and other conditions which can affect fertility.² Less invasive diagnostic tests such as chlamydia antibody testing (CAT), ultrasonography and hysterosalpingography (HSG) are available, but it is still a matter of debate how the value of these tests compares with laparoscopy in the infertility work-up.³ Several studies described risk factors for tubal pathology such as previous abdominal surgery and previous pelvic inflammatory disease (PID).⁷ However, up to 68% of patients without any of these risk factors can still possess abnormalities as shown by laparoscopy.^{8,9,10} Several studies have described the accuracy of HSG with diagnostic laparoscopy (DLS) as gold standard. A meta-analysis of studies comparing chlamydia antibody titres and laparoscopy for tubal patency and peritubal adhesions has shown that the discriminative capacity

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of chlamydia antibody titres in the diagnosis of any tubal pathology is comparable to that of HSG in the diagnosis of tubal occlusion.¹¹ Although chlamydia antibody titre can be determined at low cost, it fails to provide information about the severity of tubal pathology, which is of importance to fertility prognosis and subsequently, to infertility treatment. Furthermore, it cannot detect tubal pathology due to other causes or endometriosis.

With this background the present study was undertaken to assess different anatomical and pathological conditions of fallopian tubes and other pelvic organs by laparoscopy in infertile female patients.

Materials and methods

In this prospective study, the respondents comprised infertile patients who were admitted and treated in the department of Gynecology and Obstetrics in BIRDEM, Dhaka during the period of January 2001 to December 2001. Patients suffering from both primary and secondary infertility were included in this study. Age of the patients who participated in this study was between 20 to 40 years. Semen analysis reports of their husbands' were reviewed.

Before admission, detailed history was taken and clinical examination was done. A set of basic investigations were carried out for fitness of anesthesia before laparoscopy. In suspected cases of thyroid disease serum thyroid stimulating hormone level was performed. To evaluate any follicular phase defect serum follicle stimulating hormone, luteinizing hormone and serum prolactin levels were done. Finally, patients selected for laparoscopy were admitted on 18-21 days of their menstrual cycle.

The information collected from the patients and the findings of laparoscopy were put together in the data sheet which was analyzed manually.

The study protocol was approved by the Ethical Committee of Bangladesh College of Surgeons and Physicians (BCPS) as a requirement of fulfillment of examination of Fellow of College of Physicians and Surgeons (FCPS). Informed consent was taken from the participants before collection of any information.

Results

The study group comprised 100 cases of infertile patients of which 81% were having normal regular

menstrual cycle. When assessed for infertility, 67% and 33% patients were observed with primary and secondary infertility respectively. Patients with secondary infertility reported 9% stillbirth, 18% spontaneous abortions, 21.5% menstrual regulations, 9% ectopic pregnancy while 42.5% patients had previous successful pregnancy.

During laparoscopic procedure, normal, bulky and smaller sized uterus were correspondingly observed in 76%, 18% and 2% cases and uterus could not be visualized due to adhesion in 2% cases. Bicornuate uterus was found in 2% cases. Among all the cases, 9% patients had fibroid uterus. The laparoscopic findings of both ovaries and tubes are shown in table I and II respectively. Dye test for detecting the patency of fallopian tubes was positive in 89% on left and 90% on right side.

Table-I

Laparoscopic finding of ovaries (n=100)

Finding	Right ovary		Left ovary	
	No of cases	Percentage	No. of cases	Percentage
Normal Ovary	51	51%	53	53%
Poly cystic ovary	23	23%	22	22%
Endometriosis	7	7%	7	7%
Adhesion	8	8%	8	8%
Simple cyst	9	9%	10	10%
Could not visualized	2	2%	2	2%

Table-II

Laparoscopic finding of fallopian tubes (n=100)

Finding	Right tube (n=100)		Left tube (n=100)	
	No of cases	Percentage	No of cases	Percentage
Normal	71	71%	69	69%
Peritubal adhesion	11	11%	10	10%
Tubo ovarian mass	1	1%	3	3%
Hydrosalpinx	5	5%	6	6%
Kinking	6	6%	5	5%
Tortuous	3	3%	3	3%
Not visualized	3	3%	4	4%

In 79% cases pelvic organs were normal in appearance, 5% cases had endometriosis, and 12% cases showed adhesion of fallopian tubes with the ovary, uterus and intestine and also with bladder. Pelvic organs were congested in 4% cases. Pouch of Douglas (POD) was normal in 69% patients. Mild to moderate adhesion at POD was noted in 11% cases while obliteration of POD due to severe adhesion was seen in 9% patients. In addition, endometriosis was found in 4% cases and pelvic collection of fluid was found in 3% patients.

Regarding complications of laparoscopy, one patient had post-operative abdominal distension. Uterine perforation occurred during tubal patency test in 1 case. Patients with complications were managed appropriately.

Discussion

Introduction of laparoscopy has tremendously improved the ability to investigate long standing infertility. Uterus, tubes, ovaries can be visualized by laparoscopy directly and full information about concurrent pelvic pathologies can be obtained.

Ovarian pathologies that cause anovulation lead to infertility. In present study, 22% ovaries were polycystic, smooth pearly white in colour with thick capsule. There were no sign of ovulation. However, a study conducted by Dhaliwal and colleagues in 1987 found polycystic ovary in only 3.5% cases.¹² A normal fallopian tube is needed for ovum transport, fertilization and for transport of fertilized ovum to the uterus. Any abnormalities of fallopian tube interfere with fertility. Function of the tube may be impaired due to peritubal adhesion, hydrosalpingis, too long or short tube, kinking and increases tortuosity of tubes. In a study conducted in Pakistan by Hamid et al, 1994, tubal block was found 15% in their cases.¹³ But in present study, bilateral tubal block was found in 9% cases, only right sided tubal block was found in 10% and left sided tubal block was found in 11% cases.

Abnormalities of the uterus may cause infertility. Fibroid uterus, uterine hypoplasia, infantile uterus, tubercular endometrites are important causes of infertility. In this study, fibroid uterus was found in 9% cases and bicornuate uterus was found in 2% cases. Normally uterus is freely mobile. Mobility becomes restricted in 24% cases due to endometriosis, PID, tuberculosis, pelvic operation etc. In the current study, POD was normal in 69% cases, 11% cases mild to moderate

adhesion and endometriosis was found in 4% cases and complete obliteration of POD was found in 9% cases. On the contrary, Hamid et al showed endometriosis in 9% cases, adhesion in 29% cases and complete obliteration of POD in 16% cases.¹³

Conclusion

Laparoscopy enables proper evaluation of pelvic organs. It is an important tool for diagnosing anatomical and pathological abnormality of internal genital organs in female patients and plays a major role in infertility management plan. Therefore, laparoscopy should be performed in infertile female patient with suspected pelvic organ abnormality. In Bangladesh laparoscopy is available only in few tertiary centers and private clinics. At the same time laparoscopy requires considerable expertise and is an expensive procedure. As a result most people cannot afford it. Laparoscopy should be made available and affordable at a lower cost at different level of health care facilities so that infertile couples can get benefit of it.

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