



ROLE OF DIAGNOSTIC LAPAROSCOPY IN SECONDARY INFERTILITY

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BACKGROUND: Use of diagnostic in secondary infertility has been a focus of attention in recent years and demonstrated to be very effective method in evaluating these cases. The main objective of the study was to detect the diagnostic efficacy of laparoscopy in uterine, pelvic and ovarian pathologies causing secondary infertility.

METHODS: This prospective study included 40 women with secondary infertility and it was conducted at department of Obstetrics and Gynaecology, Civil Hospital, Ahmedabad during the period between May 2016 to November 2018. After thorough gynecological examination, necessary investigations were made and written consent form was taken from them before laparoscopy. The patients were kept fasting for 24 hours before the laparoscopy and the procedure was performed under general anaesthesia. All the data was collected on pre-designed proforma and the results were tabulated and raw percentages calculated to describe the results.

RESULTS: Among 40 patients, the common age group in which patients presents with complaint of secondary infertility is 26 to 30 years. 65% patients had previous history of abortion. 80% patients had normal uterus on laparoscopic finding. While 20% patients had abnormal laparoscopic findings. 7.5% patients had adhesion on uterus, 5% patients had congested uterus, 5% patients had bicornuate uterus, 2.5% patients had small sub serosal fibroid. 32.5% patients had abnormal laparoscopic findings. 12.5% patients had adhesions around the ovaries, 10% patients had small anovulatory type of ovaries, 5% patients had cystic ovaries and 5% had congested ovaries

CONCLUSIONS: Laparoscopy is safe and cost effective method and should be considered as prime diagnostic tool for evaluating the etiology of secondary infertility in women and for effective treatment decisions.

KEYWORDS : Infertility, Laparoscopy, Primary and secondary infertility**INTRODUCTION**

Infertility is well-defined as failure to conceive during one year of unprotected frequent intercourse.¹ The problem of infertility was affecting approximately 9-16% of married couples.² Leading causes of infertility include tubal disease, ovulatory disorders, uterine or cervical factors, endometriosis and male factor infertility.^{3,4} Major instigates according to WHO are pelvic tuberculosis, malnutrition and puerperal infections leading to tubal blockage.^{5,6}

The traditional method to determine the pelvic cavity was hysterosalpingography but it has now been largely succeeded by hysteroscopy and laparoscopy. Diagnostic laparoscopy was found to be the safe and cost effective in the initial management of young women with infertility, particularly when infertility treatment dropout rates exceed 9% per cycle.⁷

It allows direct visualisation of the abdominal and pelvic organs where clinical evaluation and imaging techniques have failed or are equivocal. Thus, it is considered as an important tool not only in diagnosis of infertility but also in the treatment of selected cases.⁸ In the present study, an effort was made to establish the role of laparoscopy in primary and secondary infertility cases in women and to detect the diagnostic efficacy of laparoscopy in uterine, pelvic and ovarian pathologies

METHODS

This prospective study included 40 cases of women with secondary infertility who underwent diagnostic laparoscopy and chromopertubation. The study was carried out during the period from May 2016 to November 2018 at department of Obstetrics and Gynaecology, Civil Hospital, Ahmedabad. After thorough gynecological examination and with all necessary investigations (human semen analysis, baseline endocrinal investigations, post coital study, cervical mucus study, ovulation study, post menstrual HSG) patients were admitted a day before surgery.

Written consent form was taken from all the patients. All the patients

were kept fasting after 10 pm a day before surgery. Enema was given in morning at 6:00 am. They were advised to void completely before entering the operation room. The diagnostic laparoscopies were performed under general anaesthesia with endotracheal intubation and were maintained on gas, oxygen and halothane.

A bimanual pelvic examination under general anesthesia is done. After measuring uterocervical length Rubins cannula was fixed in position by holding cervix transversely with tenaculum. Cannula was useful for moving internal organ and for patency test as well as for the correction of retroverted uterus. Pneumoperitoneum was created using carbon dioxide gas (inert, safest, readily absorbable, not supporting combustion) through veress needle inserted through lower border of umbilicus keeping in mind not to choose an area adjacent to previous laparotomy scar for fear of damage to adherent bowel. The optimal sign for a successful puncture of abdominal skin is a soft listing sound as the needle enters. The gas flow rate was kept at 1 liter/minute and approx. 1-1.5 liter gas was required for diagnostic laparoscopy to maintain pressure of 12 mm Hg inside the peritoneal cavity. If the needle is attached to carbon dioxide pneumoapparatus, with the machine closed and abdominal wall is elevated a negative pressure indicates correct placement of needle. Pneumoperitoneum should be considered adequate when the abdominal wall is uniformly bulging and the liver dullness is obliterated. The trocar cannula is pushed in at 45 degrees with screwing movement after lifting the lower abdominal wall. The cannula is removed and laparoscope was introduced. The pelvic organs are first inspected by manipulating uterus, tubes, ovaries, pouch of Douglas are visualized for any pathology. Chromopertubation was done to check the patency of tubes by injecting dilute methylene blue through the intrauterine cannula. Any endometriotic implant is ruled out by thorough examination.

Double puncture technique is more reliable to rule out pelvic pathology. After completion of procedure, laparoscope is removed and trocar sleeve is kept open to remove air from abdominal cavity. The trocar is introduced and trocar cannula is removed. The skin was

sutured and sterile dressing was done. After completion of procedure the patients was shifted toward when they are completely out of anaesthesia. They were discharged on the next day. The parameters to be monitored were decided and recorded accordingly.

RESULTS

40 cases of secondary infertility were studied extensively.

TABLE 01: DISTRIBUTION OF CASES ACCORDING TO AGE

Age in years	Total no of patients	Percentage
21 to 25 years	13	32.5%
26 to 30 years	19	47.5%
31-35 years	07	17.5%
>35 years	01	0.25%
Total	40	100%

Thus, it can be observed that the common age group in which patients presents with complaint of secondary infertility is 26 to 30 years.

TABLE 2: DISTRIBUTION OF CASES ACCORDING TO DURATION OF SECONDARY INFERTILITY

Duration(years)	No. of patients	Percentage
2-3yrs	19	47.5%
>3-5yrs	13	32.5%
>5-10yrs	6	15%
>10yrs	2	5%
Total	40	100%

Above table shows that 80% patients presented themselves within 5yrs of earlier conception.

TABLE 3: ANALYSIS OF TYPE OF PREVIOUS OBSTETRIC PERFORMANCE AND THEIR RELATION WITH ABNORMAL LAPAROSCOPIC FINDINGS.

OBSTETRIC HISTORY	NO. OF PATIENTS	PERCENTAGE
Delivery only	12	30%
• Normal	10	25%
• LSCS	02	5%
Abortion only	14	35%
Delivery and abortion both	12	30%
• Normal + Abortion	09	22.5%
• LSCS + Abortion	03	7.5%
Ectopic pregnancy	02	5%
Total	40	100%

From above table, it can be observed that 65% patients had previous history of abortion.

History of previous abortion is important as it may lead to formation of adhesion or infection leading to intra uterine synachia, tubal block which clearly explain the role of evaluation of obstetric history.

Table 4: ANALYSIS OF LAPAROSCOPIC FINDINGS

(A) UTERINE FACTOR

FINDINGS	NO. OF PATIENTS	PERCENTAGE
NORMAL	32	80%
ABNORMAL	03	7.5%
• CONGENITAL ABNORMALITY	02	5%
• FIBROID	01	2.5%
ADHESION	03	7.5%
CONGESTION	02	5%
TOTAL	40	100%

It can be observed from above table that 80% patients had normal uterus on laparoscopic finding. While 20% patients had abnormal laparoscopic findings. 7.5% patients had adhesion on uterus, 5% patients had congested uterus, 5% patients had bicornuate uterus, 2.5% patients had small sub serosal fibroid.

(B) OVARIAN FACTOR

Findings	No. of Patients	Percentage
Normal	27	67.5%
Cystic	02	5%
Congested	02	5%
Adhesions	05	12.5%
Small (Anovulatory)	04	10%
Total	40	100%

It can be observed that 32.5% patients had abnormal laparoscopic findings. 12.5% patients had adhesions around the ovaries, 10% patients had small anovulatory type of ovaries, 5% patients had cystic ovaries and 5% had congested ovaries.

(C) TUBAL FACTOR

Findings	No. of Patients	Percentage
Normal	27	67.5%
Thickened	01	2.5%
Hydro salpinx	02	5%
Adhesions	06	15%
Tubercles	01	2.5%
Congested	03	7.5%
Total	40	100%

(D) PERITONEAL FACTOR:

Findings	No. of Patients	Percentage
Normal	32	80%
Endometriosis	2	5%
Adhesions	5	12.5%
Tubercles	1	2.5%

Peritoneal factor contributes to 20% out of which 12.5% had pelvic adhesion

DISCUSSION:

Common age group in which patients present with complain of secondary infertility was 26 to 30 years. In India, age of marriage is 20 years and couple wait for 5 years for conception. 65% patients with secondary infertility had previous history of abortion. History of previous abortion is important as it may lead to formation of adhesion or infection leading to intra uterine synachia, tubal block which clearly explain proper evaluation of obstetric history. 60% of patients with secondary infertility had abnormal laparoscopic findings which is significant. Diagnostic laparoscopy should be considered as primary tool of investigation in work up of patients with history of secondary infertility. Out of 40 patients, 24 patients (60%) had abnormal laparoscopic findings, out of them 12 patients (30%) had abnormal laparoscopic findings which can be dealt with operative laparoscopy in same sittings

CONCLUSION

Laparoscopy is one of the most useful diagnostic tool in diagnosis of secondary infertility. Tubal pathology and adhesions are the most common factor leading to secondary infertility followed by that of endometriosis and pelvic inflammatory disease. Laparoscopy allows a rapid work up for evaluation of uterine, tubal and ovarian function with single visual inspection in patients with secondary infertility. Peritubal pathology like adhesions, endometriosis etc. are better diagnosed by laparoscopy in secondary infertility. Laparoscopic examination is safer, minor complications are negligible and major complications are rare in expert hands. The importance value of laparoscopy of secondary infertility is that it can define that pelvic cause, and investigate adhesions and the patency of fallopian tube under the direct dynamic observation. As abnormal laparoscopic findings are more commonly found in patients of secondary infertility, Diagnostic laparoscopy should be used as first important diagnostic tool in patients of secondary infertility.

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