ORIGINAL ARTICLE

A study of role of diagnostic laparoscopy in the management of female infertility

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ABSTRACT

BACKGROUND: The objective of this study was to study role of diagnostic laparoscopy in the management of unexplained infertility. **MATERIALS AND METHODS:** 100 cases of infertility (primary +secondary) with unknown etiology that underwent diagnostic laparoscopy in a tertiary care institute. Diagnostic laparoscopy was offered a final option for patients with normal diagnostic workup for infertility like semen analysis, ovulation testing, ultrasound examination, hysterosalpingogram and test for ovarian reserve. Outcome in terms of cause detected and immediate laparoscopic treatment given which was helpful for improving infertility. **RESULTS:** Out of 100 cases studied, in 55 cases we found probable cause of infertility and in remaining 45 cases we did not found any cause of infertility. Out of 55 cases 13 cases had cystic ovary & PCOD, 11 cases had bilateral tubal block, 10 cases had multiple pelvic adhesion,8 cases had endometriosis, 5 cases had combined endometriosis & pelvic adhesion, 4 cases had unilateral tubal block,2 cases had cystic ovary with pelvic adhesion, 1 case had beaded tube and 1 case had fimbrial phimosis. **CONCLUSIONS:** We concluded that laparoscopy has important role in the diagnosis and treatment of unexplained infertility .It also helps in Prediction and improvement of success rate of assisted reproductive technologies like IUI and IVF.

Keywords: Laparoscopy, Diagnostic, ART

INTRODUCTION

Infertility has now a day's became not only a medical problem but a social problem as well. Laparoscopy now a day is the most rapidly developing area in medical science[1]. Laparoscopy provides direct visualisation of inner pelvic organs anatomy without a major abdominal surgery, so that anatomy of uterus, ovaries and fallopian tubes can be studied in more details and abnormalities can be treated at the same time[2].

With recent improvements in the assisted reproductive technology (ART), there has been a tendency that bypasses diagnostic laparoscopy and directly proceeds to ART. Therefore, the value of diagnostic laparoscopy in current fertility practice is under debate[3].

In the present study, we evaluated the usefulness of diagnostic laparoscopy for patients with unexplained infertility with normal diagnostic infertility reports. Between Dec, 2012 to June 2014,100 infertile patients underwent diagnostic laparoscopy revealed pathologic abnormalities.

The objective of this study was to study role of Diagnostic hysterolaparoscopy to detect cause of unexplained female infertility and to evaluate success rate of laparoscopic procedure done at the time of diagnostic hysterolaparoscopy.

MATERIALS AND METHODS

An institution based laparoscopic study was carried out at Darbhanga Medical College And Hospital, Darbhanga, Bihar from Dec, 2012 to June, 2014.

100 cases of primary and secondary infertility with unknown etiology that underwent diagnostic laparoscopy in a tertiary care institute. Diagnostic laparoscopy was offered as a final option for patients with normal diagnostic workup for infertility like semen analysis, ovulation testing, ultrasound examination, hysterosalpingogram and testing for ovarian reserve. Outcomes in terms of cause detected and immediate laparoscopic management done which is helpful in improving fertility.

Inclusion criteria

- Infertile woman with primary or secondary infertility of the age group 18-40 years with normal diagnostic workup for infertility except laparoscopy.

Exclusion criteria

- Infertile women with age less than 18yrs or more than 40 yrs.
- Infertile women with B/L Cornual block on HSG.
- Infertile women with abnormal hormone profile or case of PCOD.

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- Infertile women with mullerian anomaly or any other structural anomaly leading to infertility.
- Couple with male infertility.

Initially all women were examined by taking detailed history, physical examination, basic endocrinolgical investigations, USG pelvis, endometrial biopsy and semen analysis. After that general examination, systemic and genital examinations were carried out on patients selected for the study.

Hysterolaparoscopy was performed in post menstrual phase under general anaesthesia. The chromotubation was carried out in all cases of infertility to test the patency of the tube under laparoscopic vision by using 10-15 ml of 0.5% autoclaved methylene blue dye.

RESULTS

Table 1: Percentage of undiagnosed infertility

Total no of cases	**250**
Number of explained infertility	150
Number of unexplained infertility	100
Percentage	40

PCOD seen in 13%, B/L tubal block in 11% cases, multiple pelvic adhesion 10%.

Table 2: Various findings on hysterolaparoscopy

Findings	No of cases	Percentage
Normal pelvic anatomy with b/l free spillage	45	45
PCOD & Cystic ovary	13	13
B/L Tubal block	11	11
Multiple pelvic adhesion	10	10
Endometriosis	8	8
Combined endometriosis & pelvic adhesion	5	5
U/L Tubal block	4	4
Cystic ovary with pelvic adhesion	2	2
Beaded tube	1	1
Fimbrial phimosis	1	1
Total	100	100

Table 3: Final outcome

Inference	Number of cases	Percentage
Case of unexplained infertility	100/250	40
Cause of infertility detected	55/100	55
Cause undetected	45/100	45
Managed laparoscopically	36/55	65.4
Advantage of laparoscopy in detection of cause	55/205	26.8

We studied 100 patients and performed diagnostic hysterolaparoscopy, in 55 patients we could find significant findings on hysterolaparoscopy which might be most probable cause of infertility.45 patients had normal findings (Table 1)

Table 4: Success rate

Total no of patients conceived after laparoscopy	**16/100**	**16**
No of patients conceived after laparoscopic procedure	5/36	13.88
No of patients conceived with normal laparoscopic finding	11/45	24.44

DISCUSSION

Fatum et al suggested that diagnostic laparoscopy should be omitted in patients with suspected unexplained infertility[6].They stated that these patients should be directly proceed to ART rather than undergoing diagnostic hysterolaparoscopy . Since then role of diagnostic hysterolaparoscopy was under debate. In our study, diagnostic laparoscopy performed for patients with suspected undetected infertility and normal HSG findings revealed abnormality in 55(55%) patients. Our findings are supported by various previous studies. Comparison of our study is given in table-5.

Table 5: Comparison of various studies

Tubal patency	Our study	Tsuji et al4	Curson et al5
Cause detected in	45%	46%	68%
Endometriosis	8%	63%	43%
Pelvic adhesion	17%	8.8%	34%
Tubal occlusion	11%	5.3%	4%

Even though HSG is widely used for assessment of tubal patency, an accurate assessement of tubal status is possible by Diagnostic hysterolaparoscopy which allows for direct visualisation.

Sandra et al suggested that diagnostic laparoscopy may be of considerable value provided change in management is effective[7]. Our case supported this view as out of 55 patients, 36 [65.4%] patients were managed immediately by operative laparoscopy. Various operative procedures done are given in table -3. It is therefore concluded that diagnostic laparoscopy is a reliable procedure in detecting abnormalities and in contributing management plan in this patients.

Nakagawa et al compared the pregnancy rate following laparoscopic surgery with that of following ART by passing hystero laparoscopy8. They obtained significantly higher pregnancy rates in those with laparoscopy then with ART. Our study had six months follow a period in which 16% pregnancy rate which might increase on increasing follow up period.

In conclusion diagnostic laparoscopy is beneficial for patients with suspected undiagnosed infertility and normal HSG findings, because it has been reliable procedure in detecting infertility causes in the pelvic cavity which could be treated immediately or could predict further line of management.

CONCLUSION

Diagnostic hysterolaparoscopy is gold standards in the management of undetected female infertility overcoming the limitations of HSG. Diagnostic hysterolaparoscopy not only helps in diagnosis but also in immediate management of it. It also helps in prediction of success rate of ART. Therefore diagnostic laparoscopy should be performed first in patients with suspected undetected infertility before moving on to ART and ART considered as final resort in the infertility treatment.

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