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Research Article

Role of diagnostic laparoscopy in the management of female infertility

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ABSTRACT

Background: With recent improvements in the assisted reproductive technology (ART), there has been a growing tendency that bypasses diagnostic laparoscopy and proceeds directly to ART. Therefore, the value of diagnostic laparoscopy in current fertility practice is under debate. The objective of this study was to study role of diagnostic laparoscopy in the management of unexplained infertility.
Methods: 50 case of primary or 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.
Results: Out of 50 cases studied, in 27 cases we found most probable cause of infertility and in remaining 23 cases we did not found any cause of infertility. Of the 27 cases, 11 cases had endometriosis, 5 cases had multiple pelvic adhesions, 5 cases of bulky cystic ovaries, 3 cases had combined endometriosis with pelvic adhesions and 2 cases had bilateral tubal blockade contrary to hysterosalpingographic findings, 1 case showed combination of cystic ovaries with pelvic adhesions. Intraoperative adhesiolysis, endometriosis ablation, and ovarian drilling were done in respective cases.
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 days become not only a medical, but a social problem as well. Laparoscopy is the most rapidly evolving area in medicine.[2] Laparoscopy provides direct visual access to inner pelvic 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.[3]

With recent improvements in the assisted reproductive technology (ART), there has been a growing tendency that bypasses diagnostic laparoscopy and proceeds directly to ART. Therefore, the value of diagnostic laparoscopy in current fertility practice is under debate.[1]

In the present study, we evaluated the usefulness of diagnostic laparoscopy for patients with unexplained infertility with normal diagnostic infertility workup. Between June 2014 and December 2015, 50 infertile

patients with normal HSG findings and rest of diagnostic workup for infertility underwent diagnostic laparoscopy at our Hospital. In 54% of these patients, 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 evaluate various causes of infertility in cases of unexplained female infertility. And evaluate success rate of laparoscopic procedure done at the time of diagnostic hysterolaparoscopy.

METHODS

An institution based retrospective study was carried out at CAMA and Albless Hospital from June 2014 to December 2015.

50 case of primary or 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 women 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 18 years or more than 40 years
- Infertile women with B/L Cornual block on HSG
- Infertile women with abnormal hormone profile Or case of PCOD
- Infertile women with mullerian anomaly or any other structural anomaly leading to infertility
- Couples with male infertility.

Initially all women were examined by taking detailed history, physical examination, basic endocrinological 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 anesthesia. The chromotubation was carried out in all cases of infertility to test the patency of the tube under laparoscopic vision by using 10-15ml of 0.5% autoclaved methylene blue dye.

RESULTS

Of 180 patients who attended infertility clinic at our hospital, 50 patients remain undiagnosed after complete infertility workup except hysterolaparoscopy. We studied those 50 patients and performed diagnostic hysterolaparoscopy; in 27 patients we could find significant findings on hysterolaparoscopy which might be most probable cause of infertility. 23 patients had normal findings (Figure 1, Table 1).

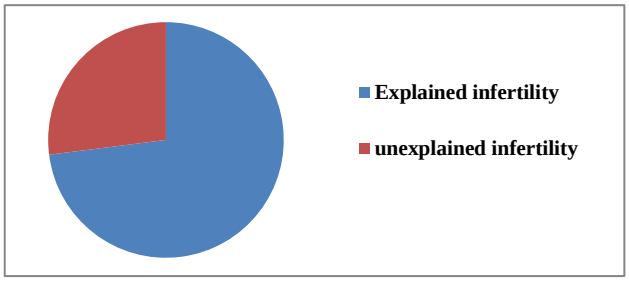

Figure 1: % of undetected infertility.

Table 1: Percentage of undiagnosed infertility.

Total number of cases	180
Number of explained infertility	130
Number of unexplained infertility	50
Percentage	27%

Endometriosis was found in 22% of patients and pelvic adhesions were found in 14% of patients.

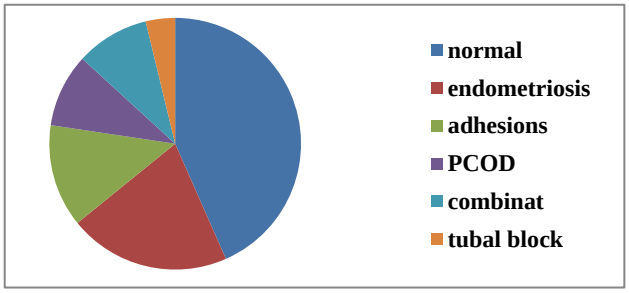

Figure 2: Various findings on hysterolaparoscopy.

Table 2: Various findings on hysterolaparoscopy.

Findings	Number of cases	Percentage
Normal pelvic anatomy with b/l free spill	23	46
Endometriosis	11	22
Pelvic adhesions	7	14
PCOD (bulky cystic ovaries)	5	10
Endometriosis with pelvic adhesions	2	4
PCOD with pelvic adhesions	3	6
Bilateral tubal blockade	2	4

Table 3: Final outcome.

Inference	Number of cases	Percentage
Cases of unexplained infertility	50/180	27%
Cause of infertility detected	27/50	54%
Cause undetected	23/50	46%
Managed laparoscopically	24/27	88%
Advantage of laparoscopy in detection of cause	27/157	17%

Table 4: Success rate.

Success rate		
Total no. of patients conceived after laparoscopy	10/50	20%
No. of patients conceived after Laparoscopic procedure	4/24	16.66%
No. of patients conceived with normal laparoscopic findings	6/23	26%

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 laparocopy preformed for patients with suspected undetected infertility and normal HSG findings revealed abnormalities in 27 (54 %) patients. Our findings are supported by various previous studies. Comparison of our study with other study is given in Table 5.

Table 5: Comparison of various studies.

Tubal patency	Our study	Tsuji et al[4]	Curson et al[5]
Cause detected in	54%	46%	68%
endometriosis	40%	63%	43%
Pelvic adhesions	37%	8.8%	34%
Tubal occlusion	4%	5.3%	4%

Even though HSG is widely used for assessment of tubal patency,an accurate assessment of tubal status is possible only by Diagnostic hysterolaparoscopy which allows for direct visualisation. In our study we detected 2 (4%)cases with normal HSG findings showed bilateral tubal blockade.

Sandra et al suggested that diagnostic laparoscopy may be considerable value provided change in management is effective.[7] Our case supported this view as out of 27 patients, 24 (88%) patients were managed immediately by opearative 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 bypassing hysterolaparoscopy.[8] They obtained significantly higher pregnancy rates in those with laparoscopy than with ART. Our study had 6 months follow up period in which we had 20% 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 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 should be considered as final resort in the infertility treatment.

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Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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