

An observational study of the use of hystero-laparoscopy in the diagnosis and management of infertility patients

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Abstract

Background: Infertility is a major, but often a belittled problem in a developing country like India. It is important for gynaecologists to make an accurate diagnosis of the cause of infertility, which sometimes becomes difficult with routine examination and routine imaging techniques. Hystero-laparoscopy is like the “Third eye of the gynaecologist” for diagnosis of infertility. **Materials and Methods:** A total of 100 infertile couple were taken for diagnostic Hystero – laparoscopy after a routine workup for infertility was done and male factor was excluded. All the patients underwent the procedure during follicular phase. Intraoperative findings were recorded and were analysed. **Results:** In the present study of 100 cases, most common age group was 26 to 30 years in both primary and secondary infertility, though majority of cases were of primary infertility. Majority of cases had an infertility period of 1 – 5 years. Hysteron – laparoscopic findings were normal in almost 53% of cases and adhesiolysis was the most common intervention performed. **Conclusions:** Hystero-laparoscopy is a GOLD STANDARD in diagnosis and management of infertility. It is a feasible and acceptable procedure and it can be used as “ONE TIME APPROACH” in the assessment of female infertility caused due to pelvic pathology.

Keywords: Infertility, Laparoscopy, Hysteroscopy, Diagnostic Laparoscopy, Adhesiolysis.

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INTRODUCTION

As Per the International Committee for Monitoring Assisted Reproductive Technology and the World Health Organization, infertility is a disease of the reproductive system defined by the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse¹. NICE guidelines state that: “A woman of reproductive age who has not conceived after 1 year of unprotected vaginal sexual intercourse, in the absence of

any known cause of infertility, should be offered further clinical assessment and investigation along with her partner.” It is recommended that a consultation with a fertility specialist should be made earlier if the woman is aged 36 years or over, or there is a known clinical cause of infertility or a history of predisposing factors for infertility². The prevalence of infertility ranges from 3.5% to 16.7% in more developed nations and from 6.9% to 9.3% in less developed nations, with an estimated overall median prevalence of 10%.^{3,4} Given that India has a population of over 1.3 billion, the number of Indians suffering from infertility is huge. Infertility may be caused by male and/or female factors. Female factor infertility can be divided into several categories: cervical or uterine, ovarian, tubal, and other⁵. A complete examination of a woman’s internal pelvic structures can provide important information regarding infertility and common gynaecologic disorders⁶. Laparoscopy and hysteroscopy can be used for both diagnostic (looking only) and operative (looking and treating) purposes⁶. Studies have shown that in infertile couples laparoscopy

reveals abnormal findings in 21.68% of cases after normal hysterosalpingography ⁷.

MATERIALS AND METHODS

Place of study:

The proposed study “Study of the Use of Hystero-Laparoscopy in The Diagnosis and Management of Infertility patients (An Observational Study) ” was conducted in OBGY department at Lokmanya Tilak Municipal Medical College and General Hospital, a Tertiary Care Medical Centre over a period of two years from January 2013 to December 2015.

Study Design

The proposed study had a sample size of 100 patients. It was a prospective observational study. Ethical approval of the study protocol was obtained from the ethics committee of institute.

Inclusion Criteria

Women of age group 20 to 40 having no conception after 1 year of unprotected intercourse. Only cases with no male factor involving infertility were taken for this study.

Exclusion Criteria

- Large pelvic mass
- Diaphragmatic or abdominal wall hernia
- Bowel obstruction
- Generalized peritonitis
- Severe cardio-pulmonary disease

Methods

Patients following up in gynaecology OPD and admitted in ward were studied with a detailed record of age, parity, medical and obstetric history, symptomatology, physical signs, systemic and gynaecological examination and routine investigations. The schedule of investigations consisted of initial routine examinations of blood especially haemoglobin percentage, total WBC count, DLC, ESR, urine routine, serological test for Syphilis, HIV, HbsAg, Blood grouping and Rh typing, TVS, hormonal tests such as FSH, LH, prolactin levels and thyroid profile was done. Patients were admitted one day

prior to the procedure and pre-anaesthetic check-up was done. The hysteron-laparoscopy was done in the follicular phase. An informed consent was obtained from all the patients participating in study. Hystero-laparoscopy was performed under general anaesthesia and the patients were kept for a period of 24 hours in the hospital post-operatively. Intraoperative findings were recorded and surgical interventions were carried out where ever required.

RESULTS AND OBSERVATIONS

Table 1: Type of infertility

Type of infertility	Number of patients	Percentage (%)
Primary infertility	87	87
Secondary infertility	13	13
Total	100	100

Out of total 100 cases for infertility evaluated, primary infertility was 87 (87%) and secondary infertility was 13(13%).

Table 2: Age Wise Distribution

Age in years	Primary Infertility (N)	Secondary Infertility (N)	Total
21-25 Yrs	24	02	26
26-30 Yrs	46	03	49
31-35 Yrs	16	07	23
36-40 Yrs	01	01	02
Total	87	13	100

In the present study the most common age group was between 26 to 30 years and amongst them 46 (46%) were with primary infertility and 3 (3%) were with secondary infertility, followed by age group between 21 to 25 years where primary infertility was amongst 24 (24%) and secondary infertility was amongst 2 (2%), followed by age group b/w 31 to 35 years where primary infertility was amongst 16 (16%) and secondary infertility amongst 7 (7%) and in b/w the age group 36 to 40 years 1 (1%) patients had primary infertility and 1 (1%) with secondary infertility were revealed.

Table 3: Duration of infertility

Type of infertility	Primary Infertility		Secondary Infertility		Total number of patients	Percent (%)
Duration of Infertility	Total number of patients	Percentage (%)	Total number of patients	Percentage (%)		
1-5 Yrs	53	53	07	7	60	60
6-10 Yrs	31	31	06	6	37	37
10-15 Yrs	03	3	00	0	03	3
Total	87		13		100	100

In 60 (60%) cases, the duration of infertility was from 1 to 5 years. Amongst 60 cases primary infertility were 53(53%) and secondary infertility were 7 (7%).In 37 (37%) cases, the duration of infertility was from 6 to 10 years. Amongst 37 cases primary infertility were 31

(31%) and 6 (6%) were with secondary infertility. In 3 (3%) case, the duration of infertility was from 10 to 15 years where all the were primary infertility. The menstrual pattern in the present study shows 67 (67%) cases had regular cycles followed by 33(33%) had

infrequent cycles, and out of 13 cases of secondary infertility, 4 (30.76%) of them had previous vaginal delivery, 9(69.23%) of them had previous miscarriages. Out of the total 100 patients only 11 had significant past history. Amongst which 7 (7%) had history of tuberculosis while 1(1%) had diabetes while 3 (3%) of the patients had history of check curettage done for missed abortions.

Table 4: Per Speculum Findings

Per speculum	Number of patients	Percent (%)
Normal	77	77
White discharge	12	12
Cervical Pinpoint OS	04	4
Candid discharge	02	2
Cervical erosion	02	2
Short cervix	01	1
2 cervices seen	01	1
Cervix deviated to left	01	1
Total	100	100

Total 77 (77%) out of 100 patients had normal speculum examination. 12 (12%) of patients had white discharge and 2(2%) had candid discharge.4 (4%)of patient had pinpoint cervical os, 2 (2%) had cervical erosion,1 (1%) had short cervix, 1 (1%) patient had 2 cervices while 1 (1%) had cervix deviated to left side.

Table 5: Per Vaginal Findings

Per vaginal	Number of patients	Percent (%)
Normal	83	83
Bulky uterus	07	7
Fornix tenderness	04	4
Mass felt in fornix	03	3
Cervix deviated to left	01	1
Retroverted uterus	01	1
Multiple fibroid	01	1
Total	100	100

Out of 100 patients 83 (83%) patients had normal vaginal examination,7 (7%) patients had bulky uterus, 4 (4%) patients had fornicial tenderness, 3 (3%) patients had mass felt in fornixes, 1 (1%) patient had cervix deviated to left, 1 (1%) patient had retroverted uterus and 1 (1%) patient had multiple uterine fibroids. Total 91(91%) patients had normal chromopertubation test that is spill of dye present bilaterally, while 5(5%) patients had unilateral spill of dye and remaining 4 (4%) patients had no spill that is complete block on chromopertubation test.

Table 6: Hysteroscopic findings

Hysteroscopic finding	Number of patients	Percent (%)
Normal	74	74
Thickened endometrium	05	5
Endometrial polyp	04	4
Cervical stenosis	06	6
Asherman syndrome	03	3
Narrow cavity	02	2
Adhesions	02	2
Uterine Septum	01	1

Bicornuate uterus 01 1
Complete vaginal septum 01 1
Endometriotic spot 01 1
Total 100 100
Out of 100 patients, total 76 (76%) had normal findings on hysteroscopy, 5 (5%) patients had thickened endometrium, 4 (4%) patients had endometrial polyp, 4 (4%) patients had cervical stenosis, 3 (3%) patients had ashermans syndrome, 2 (2%) patients had narrow cavity, 2 (2%) had adhesions, 1 (1%) patient had uterine septum, 1 (1%) patient had bicornuate uterus, 1 (1%) patient had complete vaginal septum while 1 (1%) patient had endometriotic spot.

Table 7: Laparoscopic findings

	Number of patients	Percent (%)
Normal	53	53
PCOS	08	8
Unilateral fallopian block	05	5
Bulky ovaries	05	5
Ovarian cyst	05	5
Bilateral fallopian block	04	4
Endometrial cyst	04	4
Subserosal fibroid	04	4
Adhesions	04	4
Endometriotic spot	02	2
Tubovarian mass	02	2
Dermoid cyst	01	1
Bicornuate uterus	01	1
Uterus didelphy	01	1
Peritubular adhesion	01	1
Total	100	100

Out of total 100 patients 8 (8%) patients had PCOS, 5 (5%) patients had ovarian cyst, 5 (5%) patient had bulky ovaries, 4 (4%) patients had endometrial cysts, 4 (4%) patients had subserosal fibroids in uterus, 4 (4%) patients had adhesions, 2 (2%) patients had endometriotic spots, 2 (2%) patients had tubo ovarian mass, 1 (1%) patient had bicornuate uterus, 1 (1%) patient had uterus didelphys while 1 (1%) patient had peritubular adhesions.

Table 8: Surgical Intervention

Procedure	Number of patients	Percent (%)
Only diagnostic	53	53
Adhesiolysis	10	10
PCOS drilling	08	8
Cervical dilatation	06	6
Dilatation and curettage	05	5
Endometrial Polypectomy	04	4
Endometriod /chocolate Cystectomy	04	4
Ovarian Cystectomy	03	3
Myomectomy	02	2
Endometrial ablation	02	2
Dermoid cystectomy	01	1
Hysteroscopic resection of septum	01	1
Resection of complete vaginal septum	01	1
Total	100	100

Out of total 100 patients 47 (47 %) patients required operative interventions and were managed in the same sitting while remaining 53 % of patients had normal hystero- laparoscopic findings. 10 (10%) required adhesiolysis, 8 (8%) patients required PCO drilling, 6 (6%) patients required cervical dilatation, 5 (5%) patients required dilatation and curettage, 4 (4%) patients required endometrial polypectomy, 4 (4%) patients underwent endometriod / chocolate cystectomy, 3 (3%) patients required ovarian cystectomy, 2 (2%) required myomectomy, 2 (2%) patients required endometrial ablation, 1 (1%) patient underwent cystectomy for dermoid cyst, 1 (1%) patient had resection of uterine septum hysteroscopically, 1 (1%) patient had resection of septum in vagina.

DISCUSSION

Diagnostic hysteroscopy offers a reliable evaluation of the uterine cavity and subsequent detection of intrauterine disease⁸. Complications rates of diagnostic hysteroscopy are as low as 0.012%⁹. With the view of the low complication rates, minimal time requirement operability in the same sitting and a negligible effect on the post-operative course hysteroscopy could be performed on all infertile patients undergoing laparoscopy. Laparoscopy is the standard means of diagnosing the tubal pathology, peritoneal factors, endometriosis and intra-abdominal causes of infertility and operating the same. Laparoscopy often reveals pelvic pathology as endometriosis, PCOD, pelvic and periadrenal adhesions that result in change of treatment. In the present study, primary infertility was 87(87%) and secondary infertility was 13 (13%), which was consistent with the findings of Borchia Y.G *et al* (2011), where primary infertility was 35(70%) and secondary infertility were 15 (30%) out of 50 patients studied¹⁰. In India often matters like infertility are considered shameful to be discussed, leading to long periods of infertility. Stressful and exhausting lifestyle is a major cause of infertility in young age as depicted by the study as 26 – 30 years Age group was the most common age group for Primary fertility and 31- 35 years for secondary infertility. Hystero – Laparoscopy findings were normal in majority of cases as seen in previous studies like Godinjak Z *et al* (2008) Shakya *et al* (2009) and Singh R, *et al* (2012). 47% of cases required surgical interventions for which prior concerned was taken in anticipation. Thus, hysteroscopy is a comprehensive tool in dealing with infertility, as it provides a holistic view of the female reproductive

anatomy while providing a fortuitous opportunity of dealing with the pathology in the same sitting.

CONCLUSION

Hystero-laparoscopy is a GOLD STANDARD in diagnosis and management of infertility. It is a feasible and acceptable procedure and it can be used as "ONE TIME APPROACH" in the assessment of female infertility caused due to pelvic pathology. It is concluded that while treating the causes of female infertility combined simultaneous diagnostic laparoscopy and hysteroscopy should be performed in all infertile patients as "seeing is believing" and if any pathologies found to be operable the gynaecologist can perform operative hystero-laparoscopy at that time, hence anticipating the pathologies after pre-operative work up is very important.

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