

Role of Hysteroscopy in the Evaluation of Female Infertility in Tertiary Care Centre

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ABSTRACT

Introduction: Inability to conceive bears a social stigma which causes societal repercussions and personal suffering. Hysteroscopy is effective safe method to diagnosed infertility. Study aimed to assess the role of Hysteroscopy in work up of female infertility and to analyse that this is primary method in evaluation of infertility.

Material and Methods: This retrospective study was conducted at the department of gynaecology (ESIC model hospital, MUMBAI) for duration of three years from January 2012 to December 2014. The data of the prevalence of different lesions was collected to analyse.

Results: 85 infertile patients were included, 67(78.82%) women had primary infertility and the rest 18 (21.17%) had secondary infertility. Tubal pathology (43.2%) and pelvic Adhesion (40%) were the most common abnormalities detected in laparoscopy in both primary and secondary infertility. Uterine septum was major intrauterine pathology seen in both groups. Out of 8 patients having malformation of uterus, most common uterine malformation in both the groups was uterine septum 5 and 1 unicornuate and 1 bicornuate and 1 was didelphys. In chromopertubation, primary infertility group and secondary infertility group have tubal blockage in 22.38% and 27% cases respectively.

Conclusion: Diagnostic Hysteroscopy is not only effective in evaluation of infertility but also detecting peritoneal endometriosis, adnexal adhesions, and uterine malformations. These are correctable abnormalities that are missed by routine pelvic examination and usual imaging procedures. Thus, hysteroscopy may be considered as gold standard and definitive investigative day-care procedure for evaluation of female infertility.

Keywords: hysteroscopy, hysteroscopy, laparoscopy, infertility.

INTRODUCTION

10-15% of reproductive ages couples are affected by infertility.¹ Female factors contribute 40-45% in aetiology of infertility.² Tubal pathology and block, intraperitoneal adhesions, ovarian causes, any unsuspected pelvic pathology, and uterine cavity abnormalities can be resolved in single setting.³ Experience has shown that routine examination and diagnostic procedures is not enough to evaluate pelvic pathology of infertile women. The ability to see and treat uterine, fallopian tubes, and ovarian causes during laparoscopy increases infertility evaluation and hysteroscopy also equally play major role by visualising the uterine cavity and diagnosing the possible pathology. Additionally, definitive surgical procedures like adhesiolysis; ovarian drilling, ovarian cystectomy, myomectomy, polypectomy and release of uterine synechiae can safely be combined together with HLscopy. Hence, it is more cost effective and if laparoscopic interventions for intraabdominal

abnormalities are effective in terms of higher pregnancy rates after treatment. Therefore, the aim of study was to assess the role of hysteroscopy in work up of female infertility and to analyse that this is primary method in evaluation of infertility.

MATERIAL AND METHODS

This retrospective study was done at gynaecology department (ESIC model hospital, MUMBAI) for duration of three years from January 2012 to December 2014. Infertile women with age group 20-43 years with normal hormone profile and without male factor infertility were selected and written informed consent was taken. Women with abnormal ovulation who were treated with six cycles but failed to conceive are included in this study.

Patients with active pelvic infections and hormonal abnormalities known to cause anovulation like thyroid dysfunction, hyperprolactinemia and polycystic ovarian syndrome were excluded and couples with male infertility were excluded.

Hysteroscopy was performed in early follicular phase under general anaesthesia. The tubal patency test in all cases of infertility. it carried out under laparoscopic vision by 10-15ml of 0.5% autoclaved methylene blue dye. The data of the prevalence of different lesions was collected to analyse.

STATISTICAL ANALYSIS

Results of the study were based on descriptive statistics like mean and percentages. Microsoft office 2007 was used for making tables and statistical analysis.

RESULTS

85 infertile patients were included, 67(78.82%) women had primary infertility and rest 18 (21.17%) had secondary infertility. Table 1- shows that maximum number of primary infertility cases 35.82%, belonged to the age group 26-30 years and secondary infertility cases 38.88%, belonged to age group of 31-35 years.

Tubal pathology (43.2%) and pelvic Adhesion (40%) were the most common abnormalities detected in laparoscopy in both primary and secondary infertility. The most common intrauterine pathology in both the groups was uterine septum

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(5.88%) and synechiae (5.88%) in both infertility groups. In chromopertubation, primary infertility group and secondary infertility group have tubal blockage in 22.38% and 27 % respectively. Laproscopically diagnosed major cause is tubal pathology in primary infertility and adhesions in secondary infertility (table-2). Hysteroscopically diagnosed major cause was septum in both types of infertility (table-3). Chromopertubation test result was negative in 15 primary infertility cases and 5 secondary infertility cases (table-4).

DISCUSSION

Diagnostic Hystero-Laparoscopy is essential for Evaluation of the uterine cavity and subsequent detection of intrauterine disease. Abnormalities detected on laparoscopy were more common than those in hysteroscopy both in primary infertility group and in secondary infertility group.⁴

Laparoscopy helps the direct visualisation of pathology of fallopian tubes and dye instillation through the cervix allows visualisation of tubal patency. False positives results may be due to tubal cornual spasm.⁵ Tubal pathology (43.2%) and pelvic Adhesion (40%) were the most common abnormalities detected in laparoscopy in both groups. This can be due to previous pelvic infection, endometriosis or surgery. Tubal and peritoneal

pathology account for the primary diagnosis in approximately 30 to 35% of infertile couples.⁶ This is because of high prevalence of pelvic tuberculosis.⁷ Laparoscopy is gold standard technique for evaluation of infertility and it is a better predictor of future spontaneous pregnancy in unexplained infertility couples.⁸

The most common intrauterine pathology in both the groups was uterine septum (5.88%) and synechiae (5.88%) in both infertility group. The synechiae formation is more seen in secondary infertility women because of this group had previous history of dilatation and curettage⁹; Out of 8 patients of uterine malformations, 5 was uterine septum and 1 unicornuate and 1 bicornuate and 1 was didelphys.

In chromopertubation, primary infertility group and secondary infertility group have tubal blockage in 22.38% and 27 % respectively. Out of each tubal block cases 60% is unilateral and 40% is bilateral seen.

Tubal patency can be detected by hysterosalpingography (HSG). However, HSG has several disadvantages, inherent in the technique, including infection, exposure to ionizing radiation, exposure to contrast material, and often a great deal of discomfort for the patient.¹⁰

Hysteroscopy, such allowing direct visualization of the uterine cavity and cervical canal, is of help in diagnosis of abnormalities

Sr. No.	Age in years	Primary infertility cases (67)	Percentage (%)	Secondary infertility cases (18)	Percentage (%)	Total cases (85)	Percentage (%)
1	20-25	22	32.83	2	11.11	24	28.23
2	26-30	24	35.82	5	27.77	29	34.11
3	31-35	10	14.9	7	38.88	17	20
4	36-40	10	14.9	3	37.5	13	15.29
5	>40	01	1.49	01	5.55	02	2.35

Table-1: Distribution of infertility cases according to age

Sr. No.	Laparoscopic finding	Primary infertility cases (67)	Percentage (%)	Secondary infertility cases (18)	Percentage (%)	Total cases	Percentage (%)
1	Normal pelvic organ	11	16.4	3	16.66	14	16.47
2	Tubal pathology	30	44.77	7	38.88	37	43.52
3	Adhesion	26	38.80	8	44.44	34	40
4	Endometriosis	4	5.97	2	11.11	6	7
5	PCOD	7	10.44	2	11.11	9	10.58
6	Mayoma	2	2.9	0	00	2	2.35
7	Anomalous uterus	3	4.47	0	00	3	3.52

Table-2: Laparoscopic finding

Sr. No.	hystrosopic findings	Primary infertility cases (67)	Percentage (%)	Secondary infertility cases (18)	Percentage (%)	Total cases	Percentage (%)
1	Normal	47	70.14	12	66.67	59	69.41
2	Septum	5	7.46	0	0	5	5.88
3	Polyp	2	2.98	1	5.55	3	3.52
4	Mayoma	2	2.9	1	5.55	3	3.52
5	Synechiae	1	1.49	4	22.22	5	5.88
6	Osteal block	3	4.47	0	0	3	3.52

Table-3: Hysteroscopic finding

Primary infertility(67)			Secondary infertility(18)		
Present	Absent(15)		Present	Absent(5)	
	Unilateral(9)	Bilateral(6)		Unilateral(3)	Bilateral(2)
52	9	6	11	3	2

Table-4: Chromopertubation

of uterine cavity as polyps, submucous myomas, and endometrial adhesions.¹¹ Although hysteroscopy is the screening method to be used whenever an intrauterine abnormality is suspected, in the case of infertility HSG becomes the screening procedure, because Hysteroscopy is inadequate to assess the tubal patency. However, Hysteroscopy remains an excellent additional tool for evaluating the uterine characteristics in infertile women.¹²

The advantage is finding an exact etiological factor/factors and definitive surgical procedures like adhesiolysis; ovarian drilling, ovarian cystectomy, myomectomy, polypectomy and release of uterine synechiae can safely be combined together with Hysteroscopy to increase the fertility rate at a short interval of time.¹³

There was no major surgical or anaesthetic complication in any of our patients, other than mild abdominal pain.

CONCLUSION

Diagnostic Hysterolaparoscopy is most effective and safe method of evaluation of female infertility, mainly in detecting endometriosis, intraperitoneal adhesions and uterine malformation. These are all correctable abnormalities that can be missed by routine pelvic examination and usual imaging procedures. It is a very useful method that diagnose and treat multiple abnormalities in tubal, ovarian, peritoneal and uterus at single setting, especially in couples with normal hormonal profiles and male factor. Thus, hysterolaparoscopy may be considered as gold standard and definitive investigative day-care procedure for evaluation of female infertility.

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