



ISSN: 0975-833X

Available online at <http://www.journalcra.com>

INTERNATIONAL JOURNAL
OF CURRENT RESEARCH

International Journal of Current Research
Vol. 11, Issue, 02, pp.1387-1389, February, 2019

DOI: <https://doi.org/10.24941/ijcr.34422.02.2019>

RESEARCH ARTICLE

ROLE OF HYSTEROSCOPY IN EVALUATION OF INFERTILITY

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ARTICLE INFO

Article History:

Received 09th November, 2018

Received in revised form

27th December, 2018

Accepted 09th January, 2019

Published online 28th February, 2019

Key Words:

Infertility,
Intrauterine adhesion,
Hysteroscopy.

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Citation: Dr. Chandra Jyoti and Dr. Manojkumar and Dr. H. H. Sinha. 2019. "Role of hysteroscopy in evaluation of infertility", *International Journal of Current Research*, 11, (02), 1387-1389.

ABSTRACT

Background: Hysteroscopy is gold standard procedure for uterine cavity evaluation (1). There are many randomized controlled trials on technical feasibility and patient compliance demonstrating that the procedure is well tolerated and effective in treatment of intrauterine pathology. **Objective:** To review the role of hysteroscopy in evaluation of infertility. **Method:** The study group includes 100 infertile women presenting to OPD during the period January 2017 -July 2018. This retrospective study was conducted at Department of Gynecology in AIIMS Patna. Patients aged 21-42 years with infertility were included in this study. **Results:** Among 100 infertile women, abnormal hysteroscopic finding were seen in 52% of cases. The most common abnormality was intrauterine adhesion (46.4%). Cervico-isthmic abnormalities were present in 7.1%. Observed abnormalities were septate uterus 12.5%, submucous myoma 7.1 %, endometrial polyp was seen in 23.4 %. Uterine cavity was normal in 88% cases, deformed cavity in 12 % of cases. **Conclusion:** Intrauterine adhesion were the most frequent abnormal finding in patient evaluated for infertility. Hysteroscopy is valuable diagnostic and therapeutic modality in management of infertility. **Subject Area:** obstetrics and Gynaecology.

INTRODUCTION

According to the National Centre for Health Statistics, it was tabulated that between 2006 and 2010, rates of infertility were to range 8-30% between age 15-44 years (Chandra, 2005). The introduction of hysteroscopy in gynaecologic practice revolutionized the diagnosis and treatment of intrauterine disease. Evaluation of the uterine cavity is a basic step in female infertility workup. Classically, hysterosalpingography and transvaginal sonography are most commonly used for this purpose. Hysteroscopy, however, is considered the gold standard for diagnosis of intrauterine lesions (Bakour, 2006). Hysteroscopy allows direct visualisation of endometrial lining and evaluation of the potential implantation site which is important step in management of women with infertility. Many studies have concluded that whenever laparoscopy is performed, it should be combined with hysteroscopy in order to complete the assessment before starting the infertility treatment.

MATERIAL AND METHODS

The study group includes 100 infertile women presenting to OPD during the period January 2017 -July 2018. This retrospective study was conducted at Department of Gynaecology in AIIMS Patna. Patients aged 21-42 years with infertility were included in this study. Hysteroscopy was performed to look for and evaluate the presence of intrauterine

abnormalities. Diagnostic hysteroscopy was performed using 4mm hysteroscope, under short general anesthesia. Hysteroscopy was performed with standard sequence, inspecting the endocervical canal, uterine cavity, endometrium and tubal ostia. A result of $p < 0.05$ was considered significant.

RESULTS

Hysteroscopy was performed in 100 infertile women, 78% were diagnosed with primary infertility and 22% with secondary infertility. Hysteroscopy was normal in 44% of cases. In our study 46% were of age <30 years and 54% were of age >30 years. In 70% of patient duration of infertility was <5 years, majority (60) of them were with primary infertility and 30% cases duration of infertility was >5 years. Patients with secondary infertility 6 had >2 parity, 10 had one abortion, 6 had one parity. Table 2 shows hysteroscopic finding in primary and secondary infertility. In our study 56 women had abnormal intrauterine finding, in which intrauterine adhesion were most common finding. Majority of were with primary infertility with age >30 years. 44% had normal finding with age <30 year. Cervico-Isthmic abnormalities seen 7.1% cases, 5.8% had cervical polyp, cervical stenosis seen in 1.3% of women. Intrauterine synechia seen in 26% of cases, Mullerian anomaly seen in 14.3%, Deformed cavity (9.7%), Ostial fibrosis (12.9%). Endometrial polyp seen in 3.9 % of patient with primary infertility.

Table 1. Percentage distribution of primary/secondary infertility, age of presentations and duration of infertility

Primary infertility	78%
Secondary infertility	22%
Age<30 years	46%
Age >30 years	54%
Duration of infertility<5 years	70%
Duration of infertility>5 years	30%

Table 2. Distribution of hysteroscopic findings according to age and primary/secondary infertility

	Normal finding	Abnormal finding
Primary infertility	35(80%)	43(75.6%)
Secondary infertility	9(20%)	13(24.4%)
Ag<30 year	24(54%)	22(40%)
Age >30 year	20(46%)	34(60%)

Table 3. Distribution of abnormal hysteroscopic findings in primary /secondary infertility

Abnormal finding	Primary infertility	Secondary infertility
Cervical polyp	1 (1.3%)	1 (4.5%)
Cervical stenosis	1 (1.3%)	0
Synechia	16 (20.8%)	10 (45%)
Grade-1	12 (15.6%)	4 (18%)
Submucous myoma	2 (2.6%)	1 (4.5%)
Mullerian anomaly	7 (9.8%)	1(4.5%)
Deformed cavity	4 (5.2%)	1 (4.5%)
Ostial fibrosis	3(3.9%)	2(9%)
Endometrial polyp	3(3.9%)	1 (4.5%)

Table 4. This shows the comparison of distribution of abnormal hysteroscopic findings by different studies

	Martin koskas <i>et al</i> 2010	Lasmar <i>et al</i> 2010	Ugboja Jo <i>et al</i> 2019
Abnormal finding	40.4%	54.2%	70.4%
Synechia	3.9%	19.4%	47.8%
Submucous myoma	2.3%	4.9%	11.9%
Mullerian	3.5%(unicornuate)	3.4%	10.7(arcuate)
Endometrial polyp	9.7%	12.1%	17.6%
Cervico-ithmus	4.3%	6%	
Deformed cavity	3.1%		

DISCUSSION

Hysteroscopy is valuable diagnostic and therapeutic modality in the management of infertility. The role of hysteroscopy in infertility has been changing as its capabilities are increased while other diagnostic modalities has been replaced from its former uses. Evaluation of uterine cavity is a basic step in infertility workup. Initially, hysterosalpingography and transvaginal sonography are most common used for this purpose. According to the American Society for Reproductive Medicine (ASRM), hysteroscopy is the definitive method for the diagnosis of intrauterine lesions. In our study abnormal finding seen in 56 % of cases. According to Martin Koskas *et al* (40.4%), Lasmer RB *et al* (54.4%), Ugboja *et al* (70.4%) had abnormal finding (Martin Koskas *et al.*, 2010; Lasmar *et al.* 2010; and Ugboaja, 2008).

Table 1 shows that 78% had primary infertility and 22% presented with secondary infertility which correspond with study by Lasmar RB *et al* (73.4%). It has been reported that mild intrauterine adhesion can cause infertility due to changes in the functional aspects of the endometrium. Pregnancy outcome in women with synechia was significantly lower than that of women with normal cavity (Yu, 2008). 14.3% had mullerian anomaly, most common anomaly was septate uterus,

according to Ugboja *et al* 10.7% had arcuate uterus. Intrauterine adhesions are the common finding in our study 26%, but according to Hucke *et al* Mullerian anomalies are the most frequently found disorders (Hucke, 2000). The septate uterus is most common anomaly associated with the highest incidence of reproductive failure (Taylor, 2008). Submucous fibroids interfere with fertility and should be removed in infertile women regardless of size or presence of symptoms (Bosteels, 2013). According to the ASRM 2008, hysteroscopic myomectomy is indicated for intracavitary and submucous Myoma having at least 50% of their volume within the uterine cavity. Endometrial polyp were diagnosed in both primary and secondary infertility groups with no statistically significant difference. Implantation and pregnancy outcome were significantly increased after hysteroscopic removal of polyp Stamatellos *et al* 2008 (Stamatellos, 2008). Many studies describe the incidence of abnormal findings with hysteroscopy in infertile women but none give the proportion of these women who could benefit from an adapted treatment based on hysteroscopic findings.

Conclusion

The study shows that 56% had abnormal findings in hysteroscopy. Intrauterine adhesion was the most common finding. Evaluation of the uterine cavity is a basic step in the investigation of infertile women. Hysteroscopy is used as a therapeutic method in many conditions that may affect fertility, such as uterine septum, intrauterine adhesions, endometrial polyps, submucous myoma and tubal fibrosis.

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