

Hysteroscopic Evaluation of Uterine Factors in Subfertile Couple Presenting to A Tertiary Care Centre: A Prospective Descriptive Study

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ABSTRACT

Objectives: Evaluation of uterine factors is an essential step in the diagnostic workup of subfertile couple. Intrauterine pathologies can impair implantation and hence reduce the endometrial receptivity. The advantage of hysteroscopy is that it not only allows direct observation and accurate localization of pathology but also provides therapeutic treatment for some pathologies in a single setting. This study aims to evaluate the intra uterine condition of the subfertile couple presenting to our centre using hysteroscopy. **Materials and Methods:** This was a Prospective descriptive study and sixty three cases of subfertility were enrolled during the study period. Hysteroscopy was scheduled in the follicular phase of the menstrual cycle. The detailed hysteroscopic findings were noted. Data was entered in Microsoft excel format and appropriate statistical test was applied. **Results:** Sixty three patients underwent hysteroscopy, among them forty-eight patients (72.2%) had primary subfertility and fifteen patients (23.8%) had secondary subfertility. Thirty-nine (61.9%) patients had normal hysteroscopic findings whereas twenty-four (38.1%) patients showed abnormal hysteroscopic findings. Common abnormal pathologies were stromal oedema (n=3, 54.16%) followed by intrauterine adhesions (n=8, 19%). Twenty-two (45.8%) patients with primary subfertility showed abnormal hysteroscopic findings as compared to only two (13.3%) patients of secondary subfertility which was statistically significant (p value= 0.03). **Conclusion:** Stromal oedema was the most common hysteroscopic finding followed by intrauterine adhesions which could have been missed during routine diagnostic investigations for subfertility workup.

Key words: Hysteroscopy, Intrauterine adhesions, Subfertility, Uterine factors.

INTRODUCTION

Evaluation of uterine factors is an essential step in the diagnostic workup of subfertile couple. The prevalence rate ranging 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 9% in reproductive age group (1). Intrauterine pathologies can impair implantation and hence reduce the endometrial receptivity. There may be intrauterine adhesions, fibroids, endometrial polyps, endometritis and congenital uterine anomalies. In fact, infertility related to uterine cavity abnormalities has been estimated to be the

causal factor in as many as 10% to 15% of couples seeking treatment (2). The advantages of hysteroscopy as an accurate diagnostic technique are that it not only allows direct visual observation and accurate localization of pathology but also provides therapeutic treatment option for some pathologies in a single setting. Direct view of the uterine cavity offers a significant advantage over other blind or indirect diagnostic methods (3). Hysteroscopy is a low-risk technique that uses the endocervical canal, the natural passageway of the body to gain intrauterine access. This study aims to evaluate the intra uterine condition of the subfertile couple presenting to our centre using hysteroscopy.

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MATERIALS AND METHODS

This was a Prospective descriptive study and sixty three cases including both primary and secondary subfertility were enrolled during the study period from February 2020 to January 2021 at BPKIHS, a tertiary care centre of Eastern Nepal. Acute Pelvic inflammatory Disease, Lower Genital tract infection and Patients with suspected and untreated malignancy were excluded from the study. The study was started after obtaining ethical clearance from Institutional Ethical Review committee with written informed consent. Along with basic evaluation of infertile couple which includes semen analysis, trans-abdominal ultrasonography of the pelvis, Day 2 hormonal profile i.e Serum LH, FSH, TFT, Prolactin, AMH, hysteroscopy was scheduled in the follicular phase of the menstrual cycle (day 6 –day 10) for evaluation of uterine cavity. It was performed using a 5 mm sheath rigid hysteroscope with a 30-degree optic lens and with a normal saline solution 0.9% as a distention media at 100mmHg pressure bag by vaginoscopic approach. The detailed hysteroscopic findings were noted. Data was entered in MS Excel 2010 and converted into Statistical Package for Social Science (SPSS) version 11.5 for statistical analysis. For descriptive analysis mean ($\pm$ SD), frequency and percentage were calculated to describe the characteristics of variables. Categorical variables

were analyzed using Chi-square test or Fischer's test for analysis of data. The p value <0.05 was considered statistically significant.

RESULTS

Sixty-three patients underwent hysteroscopy for evaluation of uterine cavity. Among them, forty-eight patients (72.2%) had primary subfertility and fifteen patients (23.8%) had secondary subfertility. Mean age of patients was 29.3 years. Thirty patients (47.6%) had normal body mass index (BMI), twenty-six patients (41.27%) were overweight, and six patients (9.52%) were obese. Most patients (84.1%) had regular menstrual cycles. Only ten patients had irregular menstrual cycle. Out of these eight who had irregular menstrual cycles, six patients had primary subfertility and four had secondary subfertility. Sixty-one patients (96.82%) had normal trans abdominal ultrasonography (USG). Most common abnormality detected on trans abdominal USG was uterine fibroid.

On hysteroscopic evaluation, thirty-nine (61.9%) patients had normal findings whereas twenty-four (38.1%) patients showed abnormal hysteroscopic findings. The most common abnormal findings were stromal oedema which was present in 54.16% of the cases as shown in Table 1.

Table 1: Hysteroscopic Findings

Hysteroscopic Findings	Frequency	Percentages
Stromal oedema	13	54.16%
Intrauterine adhesions	8	33.33%
Hyperemia	6	25%
Polyps	3	12.5%
Septae	1	4.16%
Abnormal endocervical canal	1	4.16%%

Note: Eight patients had overlapping findings

Twenty-two (45.8%) patients with primary subfertility showed abnormal hysteroscopic findings as compared to only two (13.3%) patients of sec-

ondary subfertility which was statistically significant (p value=0.03) as shown in Table 2.

Table 2: Hysteroscopic Findings compared in Primary and Secondary subfertility

Abnormal hysteroscopic findings	Primary sub-fertility	Secondary sub-fertility	p value
Stromal Oedema	12	1	0.047
Intrauterine adhesions	8	0	0.054
Hyperemia	5	1	0.67
Polyps	3	0	1.0
Septae	1	0	1.0
Abnormal endocervical canal	1	0	1.0

DISCUSSIONS

Hysteroscopy, with the development and miniaturization of equipment, is currently simple, outpatient cost-effective exploration and it is considered the gold standard for diagnosis of intrauterine lesions (4). Most patients reported for subfertility within first five years of inability to conceive and incidence was higher in primary subfertility patients, similar to a study by Meena et al. where 48.0% patients reported within 1-5 years of inability to conceive after unprotected sexual intercourse (5). 84.1% patients had regular menstrual cycles which were similar to a study by Meena et al. (5). Only ten patients had irregular menstrual cycle. Out of these eight irregular menstrual cycle patients, six patients had primary subfertility and four had secondary subfertility.

Thirty-nine (61.9%) patients had normal study whereas twenty-four (38.1%) patients showed abnormal reports which is in agreement with the study done by Koskas et al where he reported abnormal findings on hysteroscopy to be 40% (6). Pansky et al. in their study also reported incidence of abnormal report on hysteroscopy to be 31% (2). In our study 45.8% patients of primary subfertility and 13.3% patients of secondary subfertility had hysteroscopic abnormality whereas in a study done by Pansky et al. have found 26% and 31% abnormality in hysteroscopy among primary and secondary infertility patients respectively (2). Another study done by Praveen et al. reported Primary infertility group (I) had 13.19% (811 pa-

tients), and secondary infertility group (II) had 16.4% (189 patients) abnormal uterine cavities (7).

The most common uterine cavity abnormality seen on hysteroscopy in our study was stromal oedema which was present in 54.16% of the cases followed by intrauterine adhesions in twelve patients (33.33%), polyp in three patients (12.5%) and uterine septa in one (1.58%) case. Cosmin et al. reported the most common abnormalities to be endometrial polyps ($n = 78$; 39.4%, 95%CI = 32.9–46.3) and uterine synechiae ($n = 21$; 10.6%, 95%CI = 7.0–15.7) (8). Similarly Huseiny et al. in their study reported the most common hysteroscopic abnormality was intrauterine adhesions 31.81% (28/88) followed by endometrial polyp 13% (23/88) (9).

With the view of the low complication rates, minimal time requirement and a negligible effect on the postoperative course, hysteroscopy could be performed on all patients of subfertility undergoing diagnostic laparoscopy. The hysteroscopy showed a normal cavity in 88% cases. Routine diagnostic hysteroscopy should be a part of subfertility work up in patients of primary and secondary subfertility (10).

CONCLUSIONS

Diagnostic hysteroscopy is a very safe and effective tool for the evaluation of subfertility. Our study found stromal Oedema, a feature of chronic endometritis to be the most common finding followed by intrauterine adhesions which could have been missed during routine diagnostic investigations

done for subfertility workup such as hysterosalpingography and ultrasonography.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interests regarding the study or this article.

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