

Evaluation of Infertile Women and Correlation of Hysteroscopic with Histopathological Finding

Anshika Agarwal¹, Diksha Sharma², Manmeet Kaur³¹Senior Resident, Dept of Obstetrics & Gynaecology, Government Medical College Datia (MP)^{2,3}MBBS, MS, MBBS MS, Muzaffarnagar Medical College, Muzaffarnagar

Received: 25-02-2024 / Revised: 23-03-2024 / Accepted: 26-04-2024

Corresponding Author: Dr. Anshika Agarwal

Conflict of interest: Nil

Abstract:

Background: Aim To study the evaluation of infertile women and correlation of hysteroscopic with histopathological finding.**Objectives:** (1). To evaluate various etiological factors in infertility by hysteroscopy. (2). To correlate the hysteroscopic findings with histopathology.**Methodology:** The study was carried out at the Department of Obstetrics and Gynaecology at Muzaffarnagar Medical College, Muzaffarnagar; U.P. Women with infertility attending the OPD were included in the study based on simple random sampling. Sample size was 100. Hysteroscopy was used to obtain a comprehensive view of the uterus, ostia, and endocervical canal, and systematic observations were made followed by Histopathological review.**Results:** In the current study, hysteroscopy determined that 60% of the women were normal, whereas 40% had intrauterine lesions, disease, or uterine anomalies. 39% of patients with histopathology showed normal findings, while 61% of cases had abnormal ones.**Conclusion:** Hysteroscopy and histopathology's overall agreement was found to be excellent ($\kappa=0.81$), and there was a strong correlation between the two ($\chi^2=14.93$, $p\text{-value}<0.05$).**Keywords:** Infertility, Hysteroscopy, Histopathology.

This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

Introduction

World Health Organization defines infertility as a reproductive system disorder that cannot produce a clinical pregnancy after 12 months or more of ongoing, unprotected sexual contact. Infertility in a couple that has never had a child is known as primary infertility. Failure to conceive after a prior pregnancy is known as secondary infertility [1].

20-30% of cases of infertility are caused by male infertility, 20-35% by female infertility, and 20-40% by combined causes [2,3]. In 10–20% no cause is identified. Ovulatory issues are the most frequent cause of female infertility.

Since the 1980s, the prevalence of infertility has grown by 4%, primarily because of issues with fecundity brought on by an increase in age [4]. WHO estimates the prevalence of infertility in India to be between 3.9% and 16.8%. Prevalence of primary infertility increases by aging, higher BMI, irregular menstrual pattern, and family history. Physical examinations, blood tests, radiographic and surgical exams are used for studying infertile couples. TVS, sonohysterography, HSG, hysteroscopy, magnetic resonance imaging (MRI), and computed tomography are the diagnostic

techniques that are utilized to assess the uterine cavity. The majority of endometrial disorders linked to infertility cause both structural and functional problems. 10% to 15% of couples seeking therapy for infertility have anomalies in the uterine cavity. Today, hysteroscopy is regarded as the gold standard for examining the uterine cavity [5,6]. The purpose of hysteroscopy is to identify any intrauterine alterations that would prevent the conceptus from implanting, and to assess the effectiveness of various treatment modalities in re-establishing a normal endometrial environment. Hysteroscopy helps in taking endometrial biopsies.

The current study was conducted to assess the efficacy of hysteroscopy in identifying infertile women and to compare hysteroscopic findings with histopathologic findings.

Material and Methods

This prospective study was carried out at the Department of Obstetrics and Gynaecology at Muzaffarnagar Medical College, Muzaffarnagar; U.P. Women with infertility attending the OPD were included in the study based on simple random

sampling. Sample size was 100. Patients were explained about the study, consent was taken and their details regarding age, blood group and medical history was obtained.

Inclusion Criteria:

1. Women with primary infertility
2. Women with Secondary infertility
3. Women willing for hysteroscopy

Exclusion Criteria:

1. Active pelvic infections
2. Active Genital T.B
3. Infertility due to male causes

Various investigations done were hemoglobin, WBC count, DC, and ESR, routine urine tests, serological tests for syphilis, HIV, HbsAg, blood

grouping and Rh typing, TVS, and hormonal tests such as FSH, LH, prolactin levels, and thyroid profile.

Comprehensive medical history of every woman was documented followed by thorough medical examination and a pertinent evaluation of the husband.

Hysteroscopy was used to obtain a comprehensive view of the uterus, ostia, and endocervical canal, and systematic observations were made followed by Histopathological review.

Data Analysis: Suitable statistical tests were used. It was deemed statistically significant when the p-value was 0.05.

Results

Table 1: Hysteroscopic findings among the study subjects

| Findings | | Number of women (n=100) | Percentage (%) |
|---|---|-------------------------|----------------|
| Absence of intrauterine pathology, lesion or anomaly | | 60 | 60.0 |
| Presence of intrauterine pathology, lesion or anomaly | | 40 | 40.0 |
| Presence of intrauterine pathology, lesion or uterine anomaly | Submucous Fibroids | 12 | 30.0 |
| | Endometrial polyp | 10 | 25.0 |
| | Cervical stenosis | 08 | 20.0 |
| | Intrauterine Adhesions | 06 | 15.0 |
| | Blocked ostia | 02 | 5.0 |
| | Uterine anomaly including septate and subseptate uterus | 02 | 5.0 |
| Total | | 100 | 100.0 |

Table 2: Histopathological findings among the study subjects

| Findings | | Number of women (n=100) | Percentage (%) |
|---|--------------------------|-------------------------|----------------|
| Absence of intrauterine pathology or lesion | | 39 | 39.0 |
| Presence of intrauterine pathology or lesion | | 61 | 61.0 |
| Presence of intrauterine pathology, lesion or uterine anomaly | Polyp | 17 | 27.87 |
| | Tubercular granuloma | 16 | 26.23 |
| | Endometritis | 08 | 13.11 |
| | Fibrosis | 05 | 8.20 |
| | Pale endometrium | 05 | 8.20 |
| | Submucosal fibroids | 06 | 9.83 |
| | Calcified endometrium | 01 | 1.64 |
| | Hyperplastic endometrium | 01 | 1.64 |
| | Atrophic endometrium | 01 | 1.64 |
| | Edematous endometrium | 01 | 1.64 |
| Total | | 100 | 100 |

Table 3: Correlation of Histopathology and Hysteroscopy

| Variables | | Histopathology | | Total |
|--------------|----------|----------------|----------|-------|
| | | Normal | Abnormal | |
| Hysteroscopy | Normal | 22 | 38 | 60 |
| | Abnormal | 17 | 23 | 40 |
| | Total | 39 | 61 | 100 |
| Kappa Value | | 0.81 | | |
| Chi square | | 14.93 | | |
| P value | | <0.05 | | |

Discussion

On Hysteroscopy 60% of the women were normal, whereas 40% had intrauterine lesions, disease, or uterine anomalies. Fibroids, endometrial polyps, cervical stenosis, adhesions, blocked ostia, and uterine anomalies were discovered in 12(30%), 10(25%), 8(20%), 6(15%), 2(5%) and 2(5%) of the 40 women who had intrauterine pathology, lesions, or uterine anomalies, respectively. The results are in accordance with the study conducted by Shukla P et al on 60 participants over the course of 13 months between August 2014 and September 2015 [7]. In this study, 65% of cases had abnormal hysteroscopic findings, while 35% had normal uterine cavity findings.

In this study histopathology diagnosed 39% to be normal while 61% were detected with intra uterine pathology or lesion. Out of 61 women with intrauterine pathology or lesion :polyp, Tubercular granuloma, endometritis, fibrosis, pale endometrium, and submucosal fibroids, calcified endometrium, hyperplastic endometrium atrophic endometrium and calcified endometriosis was found in 17 (27.87%), 16(26.23%), 08(13.11%), 05(8.20%), 05(8.20%), 06(9.83%), 1(1.64 %), 1(1.64%), 1(1.64%) & 1(1.64%) women respectively.

In the current study, hysteroscopy determined that 60% of the women were normal, whereas 40% had intrauterine lesions, disease, or uterine anomalies. 39% of patients with histopathology showed normal findings, while 61% of cases had abnormal ones. Hysteroscopy and histopathology's general agreement was determined to be excellent ($\kappa=0.81$), and there was a strong association between the two ($\chi^2=14.93$, $p < 0.05$).

Conclusion

In the current study, hysteroscopy determined that 60% of the women were normal, while 40% had intrauterine lesions, pathology, or uterine anomalies. 39% of cases with histopathology showed normal findings, while 61% of cases had abnormal ones. Hysteroscopy and histopathology's overall agreement was found to be excellent ($\kappa=0.81$), and there was a strong correlation between the two ($\chi^2=14.93$, $p < 0.05$).

References

1. WHO | Infertility". Who.int. 19 March 2013. Archived from the original.
2. Chowdhury SH, Cozma AI, Chowdhury JH. Infertility. Essentials for the Canadian Medical Licensing Exam: Review and Prep for MCCQE Part I. 2nd edition. Wolters Kluwer. Hong Kong. 2017.
3. "ART fact sheet (July 2014)". European Society of Human Reproduction and Embryology. July 2014.
4. Maheshwari, A. Human Reproduction. 2008; 538–542.
5. Brown SE, Coddington CC, Schnorr J, Toner JP, Gibbons W, Oehninger S. Evaluation of outpatient hysteroscopy, saline infusion hysterosonography and hysterosalpingography in infertile women: a prospective, randomized study. Fertil Steril. 2000; 74: 1029– 1034.
6. Shushan A, Rojansky N. Should hysteroscopy is a part of the basic infertility workup? Hum Reprod. 1999; 14 (8): 1923– 1924.
7. Shukla P, Yadav K, Mishra S. Hysteroscopic evaluation of uterine cavity in cases of infertility and its correlation with transvaginal ultrasound and hysterosalpingography. Int J Reprod Contracept Obstet Gynecol. 2016; 5: 3843- 8.