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Dr. Gunjan Goyal

Associate Professor, Department of
Obstetrics and Gynaecology, World
College of Medical Sciences
Research and Hospital, Gurawar,
Jhajjar, Haryana, India

Dr. Aditi Sangwan

Senior Resident, Department of
Obstetrics and Gynaecology,
World College of Medical Sciences
Research and Hospital, Gurawar,
Jhajjar, Haryana, India

Dr. Naiya Devgan

Associate Professor, Department of
Obstetrics and Gynaecology, World
College of Medical Sciences
Research and Hospital, Gurawar,
Jhajjar, Haryana, India

Dr. Shyam Sunder Nagpal

Associate Professor, Department of
General Surgery, World College of
Medical Sciences Research and
Hospital, Gurawar, Jhajjar,
Haryana, India

Dr. Ishita Mehra

Intern, World College of Medical
Sciences Research and Hospital,
Gurawar, Jhajjar, Haryana, India

Corresponding Author:

Dr. Aditi Sangwan

Senior Resident, Department of
Obstetrics and Gynaecology,
World College of Medical Sciences
Research and Hospital, Gurawar,
Jhajjar, Haryana, India

Hysteroscopy in daily practice

**Dr. Gunjan Goyal, Dr. Aditi Sangwan, Dr. Naiya Devgan, Dr. Shyam
Sunder Nagpal and Dr. Ishita Mehra**

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Abstract

Background: During the last many years, hysteroscopy has become the gold standard while evaluating the vagina, cervix, cervical canal, and uterine cavity. It is the process of viewing and operating in the endometrial cavity from a transcervical approach, offering the advantage of direct visualization of the uterine cavity while giving the option of collecting histological biopsy samples under visual control. Some of the common indications for hysteroscopy have been in the evaluation of abnormal uterine bleeding, infertility, recurrent pregnancy losses, uterine anomalies and suspected Asherman's Syndrome.

Aims and Objectives: To assess the effectiveness and safety of screening, diagnostic and therapeutic hysteroscopy in sub-fertile, infertile, premenopausal and postmenopausal patients.

Material and Methods: A total of 50 patients were included in the study.

Results: Maximum number of women belonged to 25-35 years age group. A total of 5(10%) women found to be in elderly age group i.e. between 66-75 years. Mean age of the study population was 37.04±14.59 years. Majority of women were suffering from heavy menstrual bleeding and uterine septum i.e. 7(14%) each followed by endometrioma with fibroid, Asherman's syndrome i.e. 6(12%) women. Recurrent abortions, ovarian cyst, endometrial hyperplasia and submucous fibroid were observed in 2(4%) women, respectively.

Conclusion: Hysteroscopy has replaced blind diagnostic procedures and is now considered the gold-standard technique for the diagnosis and management of intrauterine pathology. We recommend that Gynecologists in clinical practice should be familiar with the use of hysteroscopy in the diagnosis and treatment of the sub-fertile, infertile, premenopausal and postmenopausal patients.

Keywords: Hysteroscopy, practice

Introduction

Hysteroscopy word is derived from Latin word "haustera," i.e., womb. Hysteroscopy is considered the gold standard for endoscopic evaluation of the uterine cavity [1]. It is most frequently used to evaluate intracavitary pathology associated with both pre and postmenopausal patients with complaints of abnormal uterine bleeding and the workup of infertility patients with suspected cavity abnormalities [2, 3].

Hysteroscopy was first described by Bozzini in 1807 [4]. It is the oldest endoscopic procedures known in medical literature. However, for more than 150 years it was not thought to be clinically useful, but with last decade's technical innovations, hysteroscopy is now a safe and cost-effective tool for intrauterine surgery [5]. Diagnostic hysteroscopy offers a reliable evaluation of the uterine cavity and subsequent detection of intrauterine disease [6]. The benefits of hysteroscopy as an operative tool together with women's desire to preserve their uterus in spite of dysfunction, has led to replacement of hysterectomy as a therapeutic procedure in specific cases of abnormal uterine bleeding [7]. Complication rates of hysteroscopy found to be low which is varied from 0.012% for diagnostic hysteroscopy to 0.8% for operative procedures [8, 10]. In gynaecological practice, doing our best in including screening, diagnosis, therapeutic and operative procedures lead to cost effectiveness, better outcomes and more patient's satisfaction.

Hysteroscopy, a very innovative, cost effectiveness, handy and better skill in itself in accurately evaluating of female reproductive tract and cover broad spectrum of gynaecological interventions with accurate visualisation of uterine cavity, its anomalies, its diseases, and interventions in it. It is an eagle eye technology for diagnosis and management of intrauterine pathologies in both premenopausal and postmenopausal women compared to other diagnostic modalities such as TVS, blind procedures like D & C it gives us a benefit of minimal patient discomfort, excellent visualisation and very low complication and failure rates [11].

Using technology and technique in diagnosing various diseases in day care with short anaesthesia and minimal invasive techniques leading to less painful and better tolerated procedures [12, 16].

Keeping in view the above mentioned facts, the present study was conducted to assess the effectiveness and safety of screening, diagnostic and therapeutic hysteroscopy in sub-fertile, infertile, premenopausal and postmenopausal patients with following objectives:

- 1) A routine screening hysteroscopy, with or without treatment of any detected uterine cavity abnormalities versus no hysteroscopy in subfertile women wishing to conceive spontaneously.
- 2) A routine diagnostic and therapeutic hysteroscopy, to detect causes of AUB and do targeted biopsy.
- 3) A routine screening hysteroscopy, with or without treatment of any detected uterine cavity abnormalities, versus no hysteroscopy and before IUI.
- 4) A routine screening hysteroscopy with or without treatment of any detected uterine cavity abnormalities with concurrent diagnostic laparoscopy versus no hysteroscopy before IVF.

Material and Methods

The present study was conducted in the Department of Obstetrics and Gynaecology, World College of Medical Sciences Research and Hospital, Gurawar, Distt. Jhajjar, Haryana (India). A total of 50 patients were included in the study.

Instrumentation

Diameter of scopes: Instrument final diameter is considered the main factor influencing pain, together with the operative time spent [17]. Practically, patients' tolerance and acceptability would be higher the smaller the diameter [18] and the better visualisation during the procedure would be. The latter is connected to the less traumatic manoeuvres passing the scope through the cervical canal [19]. The 4.2 mm final diameter (including an external sheath for the instruments) or 4.7 mm (including an external sheath for the irrigation system) are considered today to be most suitable. As for the diagnostic tool only, a final diameter is little more than 2 mm. We do not think that these final diameters used today can change, as they depend upon the start diameter of the lens, which cannot be less than 1.9 mm. Fibre optics have been proven inferior to the lens systems of the rigid hysteroscopes in terms of optical quality, visualisation and accuracy, providing lower success rates at much higher cost [20, 21].

Jacobs *et al.* [16] described a 2.67 mm outer diameter with straight zero-degree scope, 70-degree vision field and two working channels, 1.2 and 0.55 mm, allow suction-irrigation and introduction of a 1.0 mm biopsy forceps.

The Royal College of Obstetrics and Gynaecology (RCOG) guidelines [22] recommend the use of miniaturized hysteroscopes (2.7 mm with a 3–3.5 mm diameter of the external sheaths) for outpatient diagnostic hysteroscopy, as they significantly reduce patient discomfort. Accordingly, Giorda *et al.* found that the use of a 3.5-mm diameter hysteroscope was associated with lower pain compared to a 5-mm instrument, specifically in postmenopausal women [23].

Technique

The operator should cautiously insert the hysteroscope into the vagina and drive the instrument to the posterior fornix until the external cervical OS is clearly visualized. This technique, known

as vaginoscopy, or the 'no touch technique', allows the atraumatic insertion of the hysteroscope into the external cervical os, without the aid of a speculum or tenaculum. This method reduces patient discomfort, allowing completion of the procedure also in cases of severe vaginal atrophy and in most cases of cervical stenosis [24].

Distension media

Currently, normal saline (N/S 0.9%) is the most-used distension medium of the uterine cavity, usually instilled from a 500 ml bag wrapped in a pressure bag connected to a manometer and pumped to 120–200 mmHg.

In addition, the role of an electronic pump for irrigation and aspiration has to be emphasised, which keeps the intrauterine pressure (together with patient's discomfort) low, while improving the hysteroscopic view.

During hysteroscopy, the distension pressure should be ideally kept at values lower than 70 mmHg (i.e. the pressure at the fallopian tube entry), minimizing the risk of extravasation of distention media into the peritoneal cavity. These precautions reduce discomfort during the hysteroscopic procedure, especially in postmenopausal patients.

The only grey area found in the literature had to do with the possibility of cancer cell dissemination through the transtubal fluid leakage. The assumption is logical: the medium through the high-intrauterine pressure could spread cancer cells in the peritoneal cavity through the tubes. Reports disagree that the fluid leakage is linked to cancer cell dissemination, in cases of endometrial cancer. Furthermore, they suggest that when cancer is suspected, the reduction of the pressure of the pump to 40 mmHg appears to be safe.

Energy sources used for operative part

Apart from the mechanical instruments, bipolar energy has been widely used. Versa point is the most common 5-Fr electrode. As it can be used through the working channel, it does not require cervical dilatation. It could be considered as a safe alternative to the resectoscope, being associated with shorter operating time and lower complication rates, comparatively.

There are still some worries, though, on the safety and efficacy of bipolar energy used during surgery as compared to monopolar.

Statistical analysis

Data were presented in number and percentage followed by Mean±SD (wherever applicable).

Results

The present study was conducted in the Department of Obstetrics and Gynaecology, World College of Medical Sciences Research and Hospital, Gurawar, Distt. Jhajjar, Haryana (India). A total of 50 patients were included in the study. Following observations were noted as under:

Table 1: Distribution of patients

Age Group (Years)	Number of patients (%)
< 25	5(10%)
25-35	24(48%)
36-45	11(22%)
46-55	2(4%)
56-65	3(6%)
66-75	5(10%)
Total	50(100%)
Mean±SD	37.04±14.59

In the present study, maximum number of women belonged to 25-35 years age group i.e. 24(48%) followed by 11(22%) women between age group of 36-45 years. A total of 5(10%) women found to be in elderly age group i.e. between 66-75 years. Mean age of the study population was 37.04±14.59 years.

Table 2: Distribution of patients according to diagnosis / indication of hysteroscopy

Diagnosis/Indication of Hysteroscopy	Number of patients (%) (n=50)
Submucous fibroid	2(4%)
RPOCs	1(2%)
Asherman's syndrome	6(12%)
Primary infertility	1(2%)
Secondary infertility	1(2%)
Acute pain abdomen	2(4%)
Post-menopausal bleeding	3(6%)
Heavy menstrual bleeding	7(14%)
Endometrioma with fibroid	6(12%)
Ovarian cyst	2(4%)
Endometrial hyperplasia	2(4%)
Polyp	3(6%)
Transverse vaginal septum	5(10%)
Uterine septum	7(14%)
Recurrent abortion	2(4%)

Table 2 demonstrate distribution of patients according to their diagnosis / various indications observed for hysteroscopy. Majority of women were suffering from heavy menstrual bleeding and uterine septum i.e. 7(14%) each followed by endometrioma with fibroid, Asherman's syndrome i.e. 6(12%) women. Recurrent abortions, ovarian cyst, endometrial hyperplasia and submucous fibroid were observed in 2(4%) women, respectively.

Discussion

In the present study, main objective of examination was to exclude the presence of structural abnormalities, premalignant or malignant lesions, endometrial hyperplasia, endometrial polyps, endometritis, endometrial atrophy, uterine fibroids, cervical polyps and cervical cancers. Doing biopsies as a blind procedure, results in misinterpretation and misdiagnosis or non-representative biopsy specimens of endometriosis, so, therefore, direct visualisation, noting down the thickness, colour, depending upon the pre or postmenopausal status and patient's body mass index. Hysteroscopist should skilfully evaluate and diagnose the endometrial thickness, colour, vascularisation and homogeneity. Any focal lesion should be carefully examined for its size, colour, consistency and vascularisation.

In suspicion of malignancy, look for necrotic areas, a crumbly consistency, easy bleeding at contact, abnormal vascularisation and architectural distortion of uterine cavity. All suspicious areas were biopsied, excised and sent for pathological evaluation. Biopsy was taken with "grasp biopsy" technique. In some patients 5-Pr scissors was used and precise cuts were made, allowing tissue samples to be collected and finally removed with alligator forceps. AUB can affect women's health with negative impact on their social, sexual mental wellbeing.

Evaluation of all the factors of infertility, intrauterine lesions, fallopian tube abnormalities, ovarian issues could be resolved with diagnostic laparoscopy with minimal discomfort and cost incurred in day care admission with accuracy of primary workup and excellent results.

Conclusion

With the increase in life expectancy, today's women live up to 1/3rd of their life in menopause. Gynecologic care of the sub-fertile, infertile, premenopausal and postmenopausal woman is an important part of clinical practice. Hysteroscopy has a most important role in the diagnosis and treatment of the patient with gynecologic disease. Vaginal bleeding found to be common symptom of gynecologic pathology during menopause. Complete general history and physical examination must be performed in every woman who presented with vaginal bleeding. Various imaging examination and hysteroscopy found to be most important for the diagnosis and management of patients with gynecologic conditions. Hysteroscopic findings of various gynecologic pathologies needed to provide adequate diagnosis. Hysteroscopy has replaced blind procedures and is now considered the gold standard technique for the diagnosis and management of intrauterine pathology. We recommend that Gynecologists in clinical practice must be familiar with the use of hysteroscopy in the diagnosis and treatment of the patient presenting with gynecologic complaints.

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