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A Prospective Study of Diagnostic Hysteroscopy in Abnormal Uterine Bleeding and its Correlation with Histopathology in Rural Tertiary Care Hospital of Central India

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Abstract: Abnormal uterine bleeding is the most common complaint in gynecology. Dilatation and Curettage is a blind procedure. Hysteroscopy has ushered in a new era in the evaluation of abnormal uterine bleeding. By direct visualization of the uterine cavity it is able to pin point the etiology. This study evaluates the role of hysteroscopy in the diagnosis of Abnormal Uterine Bleeding and its correlation with histopathological findings. The Prospective study was conducted in Department Of Obstetrics and Gynecology, Mahatma Gandhi Institute of Medical Sciences, a rural tertiary Hospital of Central India over a period of one year. A total of 50 subjects ,women of age group 30-60 years, in one year, having abnormal uterine bleeding were included in study .Prospective study was done to know hysteroscopic correlation with histopathology. In this study abnormal findings on hysteroscopy were found in 26 patients (52%), while in the remaining 24 patients (48%) no abnormality was detected. The results of hysteroscopy and dilatation and curettage were in agreement in 84% patients; hysteroscopy revealed more information than curettage in 12 % patients and curettage revealed more information than hysteroscopy in 4% patients. Hysteroscopy is an important diagnostic tool in evaluation of AUB and can be considered superior to curettage. It is a safe, reliable, feasible and quick procedure.
Keywords: uterine bleeding, gynecology, hysteroscopy, dilatation

INTRODUCTION

Any deviation from normal pattern of menstrual bleeding is called abnormal uterine bleeding (AUB) [1]. More than one-third of gynecologic consultations and nearly two-thirds of hysterectomies are performed for the complaint of menstrual dysfunction. The proportion of women seeking gynecological consultation for AUB rises to more than 2/3rd when peri & postmenopausal age group is considered [2]. AUB causes discomfort, inconvenience and disruption of healthy lifestyle and affects millions of women in both developed and developing world. Traditionally, after history taking and clinical examination, ultrasonography and dilation and curettage were used for diagnostic evaluation of AUB. But this detects the cause in less than 50% of the cases[3]. Since Gimpelson and Rappold reported that hysteroscopy combined with guided biopsy was more accurate than dilatation and curettage, hysteroscopy is considered an accurate 'gold standard' in uterine cavity evaluation[4].

Hysteroscopy offers a valuable extension of the gynecologist's armamentarium. It permits direct visualization of the cervical canal and uterine cavity, enabling observation of intrauterine abnormalities and improves the diagnostic accuracy permitting better treatment of uterine diseases [5]. Use of hysteroscopy in abnormal uterine bleeding is almost replacing blind curettage, as uterine cavity can be observed and abnormal area curetted under vision[3]. An accurate diagnosis results in surgical or medical treatment directed at the specific pathology and avoids the need for major surgery. Different kinds of benign pathologies can be treated in the same sitting by using operative hysteroscope [2]. Diagnostic hysteroscopy and simple operative hysteroscopy can usually be done in an office setting [6].The sensitive innervations in the uterus start

from the myometrium out, whereas the endometrium and any fibrotic tissue present are not sensitive. This is the rationale ensuring that the hysteroscopic procedure can be performed without any analgesia or anesthesia [1]. This study was carried out to study the accuracy of hysteroscopy in evaluation of abnormal uterine bleeding and to correlate hysteroscopic findings with histopathologic findings.

METHODS

A prospective study was carried out over a period of one year from Jan 2017-Dec 2017 in the Department of Obstetrics and Gynecology, Mahatma Gandhi Institute of Medical Sciences ,a rural tertiary institute in central India A total of 50 women of age group 30-60 years having abnormal uterine bleeding were included in study. Women with obvious, demonstrable pelvic pathology like fibroids, cancer of cervix, vagina or endometrium, active pelvic infection, coagulation disorder, thyroid disorder, pregnancy, patients on hormonal drugs like tamoxifen, women with active profuse uterine bleeding and history of recent intrauterine perforation were excluded from the study. Detailed history was taken and clinical examination, and investigations were done. Hysteroscopic examination was done in all patients post-menstrually, whenever possible, except in those cases where menstrual cycles were grossly irregular or patients came with continuous bleeding per vaginum (PV). The procedure was performed in operation theatre under intravenous anesthesia after proper informed consent. Normal saline was used as a distending medium. Systematic evaluation of cervical canal, internal os and uterine cavity was done & findings noted. Finally dilatation and curettage was performed and tissue collected in formalin and sent for histopathological examination. The correlation between findings on hysteroscopy and histopathologic examination was done. Further management of the patient was decided according to age, parity, severity of the disease, hysteroscopic and histopathologic report. Data were recorded on a predesigned proforma. The results of hysteroscopy and endometrial histopathology were studied and analyzed

RESULTS

A total of 50 women were studied with age ranging from 30-60 years and mean age of 41.8 years. Abnormal uterine bleeding was most prevalent among women aged 41–45 years (38%). followed by 30-35 years (19 %). Most of the women were para 2 (46 %) and belonged to lower middle socioeconomic class (32 %). This hospital catering to rural masses, most of the women were from rural area (72 %). Maximum women reported with menorrhagia (30 %) followed by continuous bleeding per vaginum (12 %) and post-menopausal bleeding (12 %) (Table1). Around 52 percent women presented after 6 months to one year of abnormal bleeding pattern, and 20 percent after one year of AUB, conforming that women neglect their health and report only after severe and prolonged illness. Dysmenorrhea (32 %), pain in lower abdomen (22 %) and infertility 19 %) were the most frequent associated conditions. In 45 % of the cases, cervix was found to be normal, in 32 % cases hypertrophied and in 23 % cervical erosion was found.

Abnormal findings were seen in 26 patients (52%), while in the remaining 24 patients (48%), no abnormality was detected (negative hysteroscopic view). The most common abnormality was endometrial hyperplasia (10 cases, 20%), followed by endometrial polyps (7 cases, 14%). There were also 2 cases (4%) of sub mucous myomas, 3 cases (6%) of endometrial hypertrophy, 1 case (2%) of endometritis and 1 case (2%) endometrial carcinoma. In the 24 cases (48 %) of negative hysteroscopic view, 2 abnormal findings were detected on histopathology, 1 case each of endometrial atrophy and endometritis. 1 case of endometritis reported on hysteroscopy was diagnosed as normal. One of the most consistent findings in this study has been the detection of intra uterine pathology like endometrial hyperplasia (10 cases, 20%), endometrial polyp (7 cases, 14%) and submucous myoma (2 cases, 4 %) with 100% accuracy by hysteroscopy. Out of 21 cases of proliferative endometrium on histopathology, in 20, proliferative endometrium was deduced on hysteroscopy. The 7 cases of endometrial polyp, 2 cases of myoma and one case of misplaced Cu-T were missed by histopathology but were diagnosed on hysteroscopy along with proliferative endometrium.

Table-1: Type of Menstrual disorder at the time of clinical presentation

Menstrual Disorder	No	%
Menorrhagia	15	30
Polymenorrhea	4	8
Polymenorrhagia	4	8
Metrorrhagia	5	10
Continuous bleeding PV	6	12
Metropathia hemorrhagica	2	4
Hypomenorrhea	3	6
Oligomenorrhea	5	10
Post-menopausal bleeding	6	12

Table-2: Findings at Hysteroscopy

Findings	No	%
Normal	24	48
Endometrial hyperplasia	10	20
Endometrial polyps	7	14
Submucous myoma	2	4
Endometrial atrophy	3	6
Endometritis	1	2
Endometrial carcinoma	1	2
Misplaced IUCD	1	2

Table-3: Findings at Histopathology

Findings	No	%
Normal	29	58
Endometrial hyperplasia Simple Cystic glandular Adenomatous	10 5 4 1	20 10 8 2
Endometrial polyps	3	6
Submucous myoma	1	2
Endometrial atrophy	1	2
Endometritis	1	2
Irregular ripening	1	2
Endometrial carcinoma	1	2

DISCUSSION

Abnormal uterine bleeding is a very common complaint in reproductive, peri-menopausal and post-menopausal age group and forms major bulk of gynecological consultations, management of which depends on diagnostic accuracy. History, clinical examination, ultrasonography and hysteroscopy are part of the diagnostic evaluation.

The age group in this study was between 30-60 years and the maximum age incidence of AUB was between 41-45 years. Gianninoto *et al.* found AUB to be common between 30-45 years while Allameh et al between 40-50 years [7]. In the study by Gazal *et al.* of the 26 cases of menorrhagia, 57.69% cases were of reproductive age group (26-45 years), polymenorrhagia was seen in 14 cases, 71% of which belonged to reproductive age group [1].

The present study found menorrhagia to be the most common type of AUB (30 %) followed by continuous bleeding per vaginum (12 %) and post-menopausal bleeding (12 %). Almost all the authors found menorrhagia as the common presenting complaint .Madan *et al.* found menorrhagia in 62 % and postmenopausal bleeding in 14% [8], Rafaie *et al.* found menorrhagia in 46 % and postmenopausal bleeding in 35.7 % women presenting with AUB[9]. Gazal *et al.* reported similar findings [1]. Menorrhagia as the primary indication for hysteroscopy was found in in 49.6% by Sciarra *et al.* [10] and 37.5% by Hamou[11] while Pasqualotto et al found postmenopausal bleeding (43.7%) as the commonest indication [12] .

In the present study, abnormal findings were seen in 26 patients (52%). Incidence of positive findings on hysteroscopy ranges from 52% in studies of Baggish *et al.* [13] and Schwarzler *et al.* [6] (similar to present study), 66% in Bhattacharya [14] and 74% in study by Guin *et al.* [2] and 94.6% in study by Hamou [11]. Patient selection, technique of hysteroscopy and skill of surgeon decides the incidence of positive findings. Negative findings too are reassuring as option of conservative management can be given to the patient [2].

Hysteroscopy is minimal invasive simple technique allowing the direct visualization of uterine cavity. So, in patients with abnormal uterine bleeding, hysteroscopy gives the immediate diagnosis and prompt and effective treatment. Focal source of bleeding may be identified and directed biopsy performed. In the present study, the most common abnormality was endometrial hyperplasia (20%), followed by endometrial polyps (14%), endometrial hypertrophy (6%), submucous myomas (4%), endometritis (2%) and endometrial carcinoma (2%).

Sharma *et al.* too found menorrhagia with hyperplastic endometrium as the most common finding [15]. Brooks *et al.* performed hysteroscopy on 29 patients of AUB, with negative curettage results in 20 and found that 19 had myoma, five had polyp, and two had endometrial atrophy while true negatives were only

three[16]. Guin *et al.* found hyperplastic endometrium in 30%[2] and Gazal *et al*. in 11 %[1]. A similar incidence of 15.2% was reported by Allameh *et al*. [7]. It is very important to take a guided biopsy in these patients especially those in perimenopausal age group. Hysteroscopic guided biopsy, assures that any suspicious area can be scanned and then decision can be taken depending on the findings. The finding of atrophic endometrium , 6% in Sciarra *et al*. study[10] and 14.6% in Hamou *et al.* [11] is particularly reassuring in women with postmenopausal bleeding. Directed biopsies of suspicious areas even when the endometrium looks atrophic can drastically exclude the risk of endometrial carcinoma[2]. Hysteroscopy guided biopsy and its reports are considered as new gold standard in evaluating a case of abnormal uterine bleeding.

Endometrial carcinoma was recognized via hysteroscopic examination in only 1 patient, (1.67%) by Gazal *et al*. comparable to studies done by Madan *et al*. (0.5%) [8] and Refaie *et al*. (1.9 %) [9] and present study (2%). As the age of patient advances, greater incidence of malignancy will be noted as seen in Gianninoto's study (16.4% with carcinoma) where age ranged from 38 to 80 years[17]. However, there have been concerns that endometrial cells could be flushed into the fallopian tubes and the peritoneal cavity. Dissemination of endometrial glands could occur after hysteroscopy as well as after endometrial biopsy and D&C. Hysteroscopic distension media and intrauterine pressure plays an important role in endometrial cell dissemination. Hysteroscopy may be an additional tool in the diagnosis of endometrial cancer; however, its use in the initial workup is still controversial. In order to minimize the small risk of cancer dissemination, hysteroscopy should be performed with an intrauterine pressure of less than 80 mmHg, and the duration of the procedure should be as short as possible.

Hamou found endometrial polyps in 9.1%, Guin *et al*. in 28% and Pasqualotto in 45.9 % whereas present study found polyps in 14 %. Hysteroscopy can easily diagnose and treat polyps in the same sitting thus negating the need for more radical surgery like hysterectomy, thus reducing costs and associated morbidity[2].

Submucus myomas were seen by Gazal *et al*. in 23.3% [1] and 4 % in the present study. In the study by Madan *et al*. of 556 patients, 53 were diagnosed to have endometrial polyp's hysteroscopically, however only 13 patients (24.5%) were confirmed to have polyps histologically. Hysteroscopy had revealed submucous leiomyoma in 33 women but none of these were diagnosed histologically[8]. In Pasqualottos study, main findings were endometrial polyps (172, 45.9%) and submucous myomas (105, 28%). Submucous myomas may be easily missed during dilatation and curettage and abnormal bleeding may persist because the myoma got eroded by scraping. Hysteroscopy, on the other, can easily diagnose and treat submucous myomas.

In the present study, hysteroscopy was performed under intravenous anesthesia in an operating room. Gazal *et al*. too performed the procedure in the operating room, although anesthesia was not required, however many prefer office hysteroscopy with availability of flexible hysteroscope. More studies are needed for evaluating patients who present with AUB by using office hysteroscopy[1].

In the present study, Hysteroscopy was highly specific for diagnosisg endometrial hyperplasia, endometrial carcinoma, endometrial polyp and submucous myoma. (Specificity was 87 % for endometrial hyperplasia and 100 % for endometrial carcinoma). Madan et al however found the sensitivity of hysteroscopy for diagnosing endometrial cancer was 40% and 30% for endometrial hyperplasia [8]. Gazal *et al*. found that the diagnostic accuracy, sensitivity, and specificity of hysteroscopy for endometrial polyps were 96.0%, 100%, and 95%, respectively. In Pasqualotto's study ,sensitivity of preoperative diagnostic tools for all intrauterine abnormalities and specifically for myomas and polyps was TVS 74% and 39%, hysteroscopy 100% and 99%, and Pipelle biopsy 24% and 10% [12]. Diagnostic value of hysteroscopy in evaluation of uterine cavity showed 100% sensitivity, 80.5% specificity, 88.9% positive predictive value (PPV) and 100% negative predictive value (NPV). Sensitivity, specificity, PPV and NPV of the procedure for endometrial polyp were 93%, 100%, 100%, and 95.4%, respectively. These results were respectively 100%, 96.4%, 88% and 100% for submucosal myoma, and 25%, 89.7%, 12.5% and 93.3% for endometrial hyperplasia [7]. Allameh *et al*. [7] compared hysteroscopic findings with pathology reports in women with AUB and found detection of endometrial polyps with hysteroscopy had a sensitivity of 93%, a specificity of 100%, a positive predictive value (PPV) of 100%, and a negative predictive value (NPV) of 95.4%.

The relatively poor sensitivity of both endometrial biopsy and transvaginal ultrasound for detecting intrauterine focal pathology is stressed by many authors [1], thus suggesting that office hysteroscopy be utilized as a first-line investigation in evaluations of patients with AUB. Hysteroscopy however has intermediate accuracy for detecting premalignant lesions and mandates directed endometrial biopsy for confirmation. Endometrial biopsy, thus, has a definite place in the diagnostic workup of postmenopausal patients as well as premenopausal

patients who are at high risk for endometrial hyperplasia.

Thus, there is a need to establish the role of hysteroscopy as a very early diagnostic tool in the evaluation of AUB in appropriately selected patients so that intrauterine lesions are not missed and patient can be offered proper management choices. Office hysteroscopy has to be promoted so that need for anesthesia is rendered unnecessary and length of hospital stays and costs decrease. Hysteroscopy easily allows for a directed biopsy, ensuring provision of a representative specimen of the focal pathology for evaluation. Thus, diagnosis and management becomes easier, safer and cost effective. Polyps and myomas can be removed in the same setting, avoiding hysterectomy and its associated morbidity.

CONCLUSION

Hysteroscopy is an important diagnostic tool in the evaluation of abnormal uterine bleeding and provides valuable insights into planning the management options. It is simple, feasible and low-risk technique which allows an adequate exploration of the uterine cavity under vision. It ensures speed and safety with the diagnosis and treatment and the results are immediately available. It can be used as a first line diagnostic method for primary evaluation. Hysteroscopy easily allows for a directed biopsy, ensuring provision of a representative specimen of the focal pathology for evaluation. It affords a more accurate diagnosis than dilatation and curettage for intrauterine pedunculated pathologies. Lesions like endometrial polyps and sub mucous myomas can be removed under direct vision with the hysteroscope. Hysteroscopy can be easily learnt. It gives a clue to diagnosis in AUB and can reduce the burden of hysterectomy in many cases which can be treated by simple procedures. Office hysteroscopy has to be promoted so that need for anesthesia is rendered unnecessary and length of hospital stays and costs decrease.

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REFERENCES

1. Garg, G., Patvekar, M., Agarwal, K., Bhatia, I., & Sanghi, S. (2017). A Study of the Role of Hysteroscopy in Abnormal Uterine Bleeding. *Journal of Gynecologic Surgery*, *33*(6), 226-230.
2. Guin, G., Sandhu, S. K., Lele, A., & Khare, S. (2011). Hysteroscopy in evaluation of abnormal uterine bleeding. *The Journal of Obstetrics and Gynecology of India*, *61*(5), 546-549.
3. Patil, S. G., Bhute, S. B., Inamdar, S. A., Acharya, N. S., & Shrivastava, D. S. (2009). Role of diagnostic hysteroscopy in abnormal uterine bleeding and its histopathologic correlation. *Journal of gynecological endoscopy and surgery*, *1*(2), 98.
4. Van Dongen, H., De Kroon, C. D., Jacobi, C. E., Trimbos, J. B., & Jansen, F. W. (2007). Diagnostic hysteroscopy in abnormal uterine bleeding: a systematic review and meta-analysis. *BJOG: An International Journal of Obstetrics & Gynaecology*, *114*(6), 664-675.
5. Cohen, M. R., & Dmowski, W. P. (1974). Modern hysteroscopy: diagnostic and therapeutic potential.
6. Schwärzler, P., Concin, H., Bösch, H., Berlinger, A., Wohlgenannt, K., Collins, W. P., & Bourne, T. H. (1998). An evaluation of sonohysterography and diagnostic hysteroscopy for the assessment of intrauterine pathology. *Ultrasound in obstetrics & gynecology*, *11*(5), 337-342.
7. Allameh, T., & Mohammadizadeh, F. (2007). Diagnostic value of hysteroscopy in abnormal uterine bleeding compared to pathology reports. *International Journal of Reproductive BioMedicine*, *5*(2), 61-64.
8. Madan, S. M., & Al-Jufairi, Z. A. (2001). Abnormal uterine bleeding. Diagnostic value of hysteroscopy. *Saudi medical journal*, *22*(2), 153-156.
9. Refaie, A., Anderson, T., & Cheah, S. S. (2005). Out-patient hysteroscopy: findings and decision making for treatment of abnormal uterine bleeding in pre-and post-menopausal women.
10. Sciarra, J. J., & Valle, R. F. (1977). Hysteroscopy: a clinical experience with 320 patients. *American journal of obstetrics and gynecology*, *127*(4), 340-348.
11. Hamou, J. E. (1981). Microcolpohysteroscopy; a new procedure and its original application in gynecology. *J Reprod Med*, *26*, 375-382.
12. Pasqualotto, E. B., Margossian, H., Price, L. L., & Bradley, L. D. (2000). Accuracy of preoperative diagnostic tools and outcome of hysteroscopic management of menstrual dysfunction. *The Journal of the American Association of Gynecologic Laparoscopists*, *7*(2), 201-209.
13. Taylor, P. J., & Hamou, J. E. (1983). Hysteroscopy. *The Journal of reproductive medicine*, *28*(6), 359-389.
14. Bhattacharya, B. K. (1992). Hysteroscopy for gynaecologic diagnosis. *J Obstet Gynecol India*, *42*, 373-5.
15. Sharma, J., & Tiwari, S. (2016). Hysteroscopy in Abnormal Uterine Bleeding vs Ultrasonography and Histopathology Report in Perimenopausal and Postmenopausal Women. *women*, *3*, 4.

16. Brooks, P. G., & Serden, S. P. (1988). Hysteroscopic findings after unsuccessful dilatation and curettage for abnormal uterine bleeding. *American Journal of Obstetrics & Gynecology*, *158*(6), 1354-1357.

17. Gianninoto, A., Morana, C., & Campione, C. (2003). Diagnostic hysteroscopy in abnormal uterine bleeding. Five-years' experience. *Minerva ginecologica*, *55*(1), 57-61.