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Diagnostic hysteroscopy in assessing patients with abnormal uterine bleeding: An observational study

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Abstract
Background and Aim: Use of hysteroscopy in abnormal uterine bleeding is almost replacing blind curettage, as it "sees" and "decides" the cause. Aim of current study was to evaluate the role of hysteroscopy as a screening method in patients with AUB as compared to their USG findings and to the histopathological reports of the endometrial biopsy.
Material and Methods: This is an observational study conducted at tertiary healthcare centre over a period of 12 months in 100 females in pre, peri and post-menopausal age group. Sampling was done based on selection criteria after obtaining valid consent from the study group. Obstetric history was noted. This was followed by detailed general examination and systemic examination. All 100 patients with complaint of abnormal uterine bleeding were first evaluated with sonography followed by hysteroscopy and dilatation and curettage. The pathological findings were then correlated with ultrasound finding and diagnosis by hysteroscopy.
Results: The most common presenting complaint according to this study was menorrhagia which contributed to 42%, this was followed by polymenorrhagia (18%) and dysmenorrhea (12%). Hysteroscopy has a definitive role in evaluation of patients presenting with abnormal uterine bleeding with high sensitivity, specificity, PPV and NPV with immediate results. Endometrial hyperplasia was found to be the most common cause of AUB which was followed by endometrial polyp.
Conclusion: Hysteroscopy is a safe, reliable and quick procedure in the diagnosis of cases with abnormal uterine bleeding with high sensitivity, specificity and negative predictive value. Hysteroscopy and histopathology complement each other in the evaluation of patient with abnormal uterine bleeding thus helping in further treatment of patients presenting with abnormal uterine bleeding as the accuracy of diagnosis in finding the cause of abnormal uterine bleeding is more.

Keywords: Abnormal uterine bleeding, dysmenorrheal, hysteroscopy, polymenorrhagia

Introduction

Abnormal uterine bleeding is defined as any type of uterine bleeding in which the duration, frequency or amount is excessive for individual patients. Almost one third of gynecological consultation and two-thirds of hysterectomies are due to abnormal uterine bleeding (AUB) [1]. The prevalence of abnormal uterine bleeding (AUB) is estimated to be 11-13% in the general population & affects 10-30% of women from reproductive age group and up to 50% of perimenopausal age group women [2]. The International federation of gynaecology and Obstetrics working group on menstrual disorders has developed a classification system (PALM-COEIN) for causes of AUB in non-gravid women. There are nine main categories, which are arranged according to the acronym PALM-COEIN: polyp; adenomyosis; leiomyoma; malignancy and hyperplasia, coagulopathy; ovulatory dysfunction; endometrial; iatrogenic; and not yet classified [3]. The common causes of AUB depends on the age of the patient and the likelihood of serious endometrial pathology increases with age. Also, the line of management changes as per the cause of AUB.

Hysteroscopy has ushered a new era in the evaluation of abnormal uterine bleeding. Use of hysteroscopy in abnormal uterine bleeding is almost replacing blind curettage as it " visualize" and "confirm" the cause. A proper use of hysteroscopy to manage AUB adds a new dimension in handling this often perplexing problem. Hysteroscopy offers a valuable extension of the gynecologist's armamentarium. It can improve the diagnostic accuracy and can permit better treatment of uterine diseases. After hysteroscopy, the elective surgery of the patient can be planned better [4]. Use of hysteroscopy in abnormal uterine bleeding is almost replacing blind curettage, as it "sees" and "decides" the cause.

This is because the uterine cavity can be observed and the area in question can be curetted. In fact, it is an eye in the uterus [5].
The primary role of endometrial sampling in patients with AUB is to determine whether carcinomatous or premalignant lesions are present by evaluating histological samples. Ultrasonography is a convenient, inexpensive, and noninvasive way to indirectly visualize the endometrial cavity. It is a painless, safe and convenient way to visualize the pathologies of endometrial cavity indirectly. The parameters that can be assessed on USG includes uterine size, endometrial thickness, endometrial and myometrial consistency and morphological abnormalities such as submucosal fibroids, polyp, congenital uterine anomalies, PCOS, endometrial carcinoma. Thus, USG has an important role in diagnosing certain disorder of the endometrium.
Aim of current study was to evaluate the role of hysteroscopy as a screening method in patients with AUB as compared to their USG findings and to the histopathological reports of the endometrial biopsy.

Material and Methods

This is an observational study conducted at tertiary healthcare centre over a period of 12 months in 100 females in pre, peri and post-menopausal age group.
Inclusion criteria: Patient of reproductive, perimenopausal and post-menopausal age group who are admitted with history of abnormal uterine bleeding.
Exclusion criteria Patients with pregnancy/abortion/ectopic pregnancy, intrauterine infections/PID/STDs, lower genital tract malignancies, pelvic deformities and medical contraindications for medical procedures were excluded from the study.
Our study includes 100 women, ages varying between 20 to 60 years with abnormal uterine bleeding who were admitted. These 100 patients were subjected to a detailed history taking which includes age, parity, date of last menstrual cycle was taken. A detailed history for ruling out any major medical or surgical illness was asked for. History to rule out bleeding disorders including history of any drug intake was taken. Patients were also asked if they had any history of intrauterine device insertion or usage of oral contraceptive pills, regular drug or hormonal preparation usage. Former gynaecological procedures and operations were recorded. A detailed menstrual history was taken and UPT was done to rule out pregnancy. Obstetric history was noted. This was followed by detailed general examination and systemic examination. A Pap smear was obtained and pelvic examination i.e., per speculum and per vaginal examination was done. Routine investigations were then conducted which included a complete hemogram, liver function and renal function test and urine routine was done. Coagulation disorders were ruled out using BT/CT, PT INR. Thyroid function test was also done to rule out endocrinological causes of abnormal uterine bleeding. All 100 patients with complaint of abnormal uterine bleeding were first evaluated with sonography followed by hysteroscopy and dilatation and curettage. The pathological findings were then correlated with ultrasound finding and diagnosis by hysteroscopy.

Statistical analysis

The recorded data was compiled and entered in a spreadsheet computer program (Microsoft Excel 2007) and then exported to data editor page of SPSS version 15 (SPSS Inc., Chicago, Illinois, USA). For all tests, confidence level and level of significance were set at 95% and 5% respectively.

Results

The most common presenting complaint according to this study was menorrhagia which contributed to 42%, this was followed by polymenorrhagia (18%) and dysmenorrhea (12%). Majority of these patients with abnormal uterine bleeding presented to the OPD within 1 year of onset of symptoms. The most common duration of symptoms as per our study was 6-12 months with a mean of 8.12 months and SD of 4.20. 18% of these patients presented within 3-6 months of onset of the symptoms. Only 4% of these patients presented after one year of onset of symptoms rest presented within 3 months of suffering.
Chi square test was applied and considering 10gm% as cut off value for anaemia it was observed that patients with symptoms of menorrhagia and polymenorrhea had significant blood loss so as to present with anaemia due to blood loss (Table 1). On Ultrasonographic findings the most common findings were polyp in 18 patients (18%), this was followed by fibroid in 8 patients (8%). 66% of these patients showed normal findings. Rest showed adenomyosis (4%), IUCD (2%) and atrophy (2%). (Figure 1)
According to as the present study, endometrial hyperplasia was encountered to 32% of patients. Thus, endometrial hyperplasia was found to be the most common cause of AUB which was followed by endometrial polyp. On histopathological examination, there were 44 patients with normal histopathological findings, 10 patients showed polyp, 34 showed hyperplastic changes while 6 had features suggestive of fibroids.
The present study was carried out amongst 100 patients in a tertiary care center with complaint of abnormal uterine bleeding with the objective to study the role of diagnostic hysteroscopy in evaluating abnormal uterine bleeding. The patients with abnormal uterine bleeding vary as per the age. In this study the most common age group was between 40 to 49 years contributing to 40%. And the mean age was 37.10 years with a standard deviation of 7.6. Thus, abnormal uterine bleeding was more commonly seen in reproductive age group and was slightly more common in perimenopausal age group.

Table 1: Association between presenting complaints and anemia (N=100)

Presenting Complaints	Anemia		P value
	Present	Absent	
Menorrhagia	32	10	0.05*
Anaemia	18	0	0.001*

* indicates statistically significance at p≤0.05

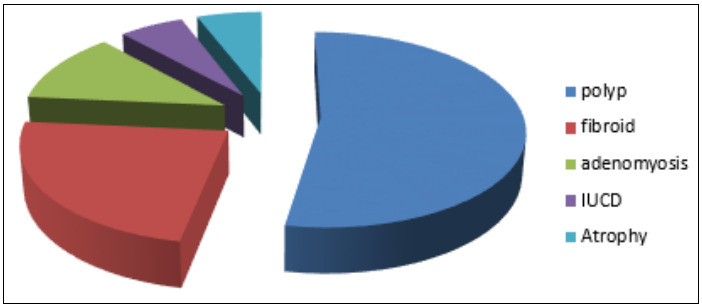

Fig 1: Distribution of study subjects according to USG findings (N=100)

Discussion

Abnormal uterine bleeding is one of the most frequently encounter condition among patients visiting gynecology OPD. Hysteroscopy helps to inspect the uterine cavity under direct vision as compared to blind curettage.

As per the present study the most common age group to present with abnormal uterine bleeding was between 40 to 49 years. Swati Singh *et al.* [6] found that maximum age incidence was between 31- 40 years in range between 22 - 70 years. V Radha Lakshmi *et al.* [7] reported maximum age incidence between 46-50 years. In Gazal Garg *et al.* [8] series among 60 patient commonest age incidence was between 46-55 years. Parul Sinha *et al.* [9] reported that mean age of patients was 36.4 ± 7.6 years.

Most common duration of symptoms as per our study was 6-12 months with a mean of 8.12 months and SD of 4.20.These results could be correlated to a study conducted by Singh *et al.* in March 2017 on 150 patients presenting with AUB, 42.7% of patients presented within a duration of 6 months to 1 years.10 On ultrasonographic findings, the most common finding was polyp diagnosed in 18 patients (18%), this was followed by fibroid in 8 patients (8%). As per a study conducted by Naik *et al.* in 2017 on 350 patient USG detected abnormality in 65.6% of cases and 34.4% were normal on USG but majority of these were fibroids and ovarian cysts [10].

According to the present study, the most common finding on hysteroscopy was endometrial hyperplasia which was seen in 32 patients contributing to 32%, followed by endometrial polyp and uterine fibroids being 12% and 8% of the patients respectively. These results were comparable to other studies with endometrial hyperplasia being most common finding ranging from 14.6% to 27% of patients Firdous *et al.*, Naik *et al.*, Valson *et al.*, Singh *et al.* [10-12] V Radha Lakshmi *et al.* [7] found endometrial hyperplasia in 20%, endometrial polyp in 13% and submucosal myoma in 11% of cases; Gazal Garg *et al.* [8] found that endometrial polyps were most common cause of AUB, comprising 26.67% of total cases, followed by submucous myoma attributing to 23.33% of cases, fuctional endometrium with normal appearance was seen in 18.33% of the cases, followed by endometrial hyperplasia in 11.66%; Parul Sinha *et al.* [9] found endometrial polyp in 16.1% and submucous myoma in 10% of cases.

There were sixty six patients who showed normal ultrasonographic findings of which 40 were found to be normal on histopathological examinations while 24 (24%) patients were suggestive of hyperplasia. Of the 18 patients with evidence polyp on ultrasonography, 8 showed polyps on histopathological examination, other 8 showed features suggestive of hyperplasia. Of the 8 fibroids detected on ultrasonography, six patients showed fibroid on histopathological examination, one was found to be polyp on histopathology.

Eight patients were diagnosed with submucosal fibroid on hysteroscopy of which one was diagnosed with hyperplasia on histopathology. Rest 6 patients showed same findings on histopathological examination. 12 patients showed submucosal polyp on hysteroscopic findings of which 10 patients with endometrial polyp on hysteroscopy showed consistent findings on histopathology while one showed endometrial hyperplasia. These results are comparable with studies conducted by Firdous *et al.* in 2017 with sensitivity and specificity of 93.2% and 83.9% respectively [11]. Also, the positive and negative predictive values were comparable with this study.

As per this study there were 44 and 66 patients with normal findings on hysteroscopy and USG respectively. Of these 38 patients with normal findings on hysteroscopy had normal findings on USG as well. Remaining 30 patients with normal ultrasonographic findings, 22 had features suggestive hyperplasia, 2 patient showed evidence of polyp on hysteroscopy while, two patients with multiple adhesions on hysteroscopy while three were suggestive of submucosal myoma. Eight patients were diagnosed with submucosal fibroid on USG, of these 6 were diagnosed as fibroid on hysteroscopy and one was diagnosed as endometrial polyp. Hysteroscopy has more sensitivity and PPV as compared to USG for diagnosing patients with abnormal uterine bleeding.

Conclusion

Hysteroscopy is a safe, reliable and quick procedure in the diagnosis of cases with abnormal uterine bleeding with high sensitivity, specificity and negative predictive value. Hysteroscopy and histopathology complement each other in the evaluation of patient with abnormal uterine bleeding thus helping in further treatment of patients presenting with abnormal uterine bleeding as the accuracy of diagnosis in finding the cause of abnormal uterine bleeding is more.

Hysteroscopy offers an invaluable advantage of direct visualization of any abnormality within the uterine cavity. It does not substitute other diagnostic procedures; rather, it complements them. Hysteroscopy is a safe, simple, quick and economic technique, well-accepted by the patient, with great potential in gynecology.

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