

Assessment of Abnormal Uterine Bleeding and Histological Relations Using Hysteroscopy-guided Biopsy: An Observational Study Over a Decade in a Tertiary Care Center

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ABSTRACT

Objective: Assessing the findings of hysteroscopy and histologic diagnosis in women who have abnormal uterine bleeding (AUB). The scenario is a sequential retrospective series of patients in a tertiary care hospital.

Patients: From January 2012 to December 2022, 1,090 individuals with AUB had hysteroscopies with biopsy.

Methods: Hysteroscopies were performed using 2.9- or 4-mm telescopes, and the distension solution was glycine or saline. With a 5-mm grasper or resectoscope, biopsies were performed. Histologic evaluation of biopsies and prevalence of hysteroscopic findings are the primary outcome measures.

Results: Normal uterine cavity and cervical canal were found in 759 (69.62%) patients. Submucous fibroids were diagnosed in 22 women. Endometrial polyps were discovered in 26 (2.38%) of the patients. Endometrial hyperplasia was detected in 166 (15.22%) of the women, while endometrial cancer was diagnosed in 4 of them (0.36%).

Conclusion: The most common histologic diagnosis was normal endometrium.

Keywords: Abnormal uterine bleeding, Biopsy, Hysteroscopy.

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INTRODUCTION

Any sort of bleeding that is deemed abnormally excessive for a certain patient in terms of length, frequency, or volume is known as abnormal uterine bleeding (AUB). Abnormal uterine bleeding accounts for almost two-thirds of hysterectomies and even more than one-third of gynecologic referrals.¹ On top of being bothersome, AUB is thought to be an indication of probable uterine sickness. Recent studies²⁻⁶ illustrate how benign, premalignant, and malignant origins have different prognoses and treatment consequences. For the treatment of AUB, a comprehensive history and physical examination are essential.⁷ Although endometrial hyperplasia and benign uterine disorders account for at least 70% of cases of AUB, a gynecologist can provide the most effective treatment by examining the uterine cavity.⁸ The safe and effective diagnostic method of hysteroscopy has gained popularity. It has a reduced prevalence of clinically significant consequences. In the presence of organic lesions, hysteroscopy allows visualization of the likely uterine source of bleeding, increasing the probability that tissue collected during guided biopsy will offer an acceptable histologic diagnosis.³ For endometrial cancer, hysteroscopic vision provides a very accurate diagnosis, but only to a modest extent for other endometrial disorders.^{9,10} Nevertheless, guided biopsy during hysteroscopy has shown to be more effective than curettage at finding lesions, especially small ones.¹¹ The diagnostic efficacy of hysteroscopy and hysteroscopic-guided biopsies has increased as a result of technological and distention medium advancements. Due to the development of tiny diameter devices,¹²⁻¹⁴ it is now possible to thoroughly and conveniently examine the uterine cavity in

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outpatient settings without the need for anesthesia.¹⁵⁻¹⁷ As a result, the procedure's prices and fees have decreased. Hysteroscopy-guided biopsy is the "gold standard" for diagnosing endometrial abnormalities in people with AUB.^{18,19} Fluid hysteroscopy, unlike dilatation and curettage, did not increase the risk of microscopic intraperitoneal spread in individuals with endometrial cancer.²⁰ Fluid hysteroscopy and guided biopsies may increase the chance of early endometrial cancer progression, although these treatments do not appear to influence prognosis.²¹ We discuss the histological and hysteroscopic findings of a large consecutive cohort of AUB-positive women who underwent hysteroscopy with biopsy.

Table 1: Age and incidence of AUB

Age	Number of patients with AUB in each age group	%
18–40	535	49.1
41–50	357	32.7
>50	198	18.16
Total	1090	100
Mean age ± SD (range) in years	52 ± 6.68	

Table 2: Parity of women with AUB

Parity	Number	%
Infertility	228	20.91
P1L1	246	22.56
P2L2	183	16.79
P3L3	156	14.31
P4L4	187	17.15
P5L5	90	8.25
Total	1090	100

METHODS

A prospective observational study was conducted in the Department of Obstetrics and Gynaecology at our hospital from January 2012 to December 2022 with approval from the Institute Ethics Committee. The study comprised 1,090 individuals with AUB problems between the ages of 20 and 70 years, of any parity, and who did not need emergency care. Women who were pregnant had a history of vaginitis, endometritis, or cervicitis, had current pelvic infection, were on OC pills, had cervical cancer, or had medical risks to surgical interventions were excluded from this research. Patients were scheduled for a diagnostic hysteroscopy-guided biopsy after a complete history-taking, examination, investigations, and informed consent. Hysteroscopy was done on all patients in the operating room under complete intravenous anesthesia using a rigid hysteroscope following dilatation of the cervix serially using Hegar’s dilators. Distending media included normal saline and glycine. Endometrial biopsy was done with scissors, a resectoscope, or biopsy forceps, and the samples were submitted for histological evaluation. Myomas and polyps were excised at the same sitting and sent for histological testing. All patients were discharged from the hospital 6–8 hours following surgery. No cases of complications were noted among these particular patients. The histopathological reports were collected and data was entered. The data collected regarding age, parity, diagnosis, and histopathological findings were statistically analyzed using the statistical package for the Social Sciences (SPSS) software, version 22. Frequency and percentage were used to summarize the variables.

RESULTS

Of the 1,090 patients, 535 (49.1%) were less than 40 years old, 357 (32.7%) were between 41 and 50 years, and 198 (18.16%) were 50 years or older which is shown in [Table 1](#). [Table 2](#) presents the parity of women with AUB without the histologic diagnosis. [Table 3](#) presents histopathological findings of the hysteroscopy-guided

Table 3: Histopathological findings of the hysteroscopy-guided biopsies

Endometrial abnormalities detected	Total number of patients	%
Proliferative	336	30.82
Secretory	423	38.80
Endometrial hyperplasia without atypia	112	10.27
Endometrial hyperplasia with atypia	54	4.95
Polyp	26	2.38
Myoma	22	2.02
Atrophic	113	10.3
Ca endometrium	4	0.36
Total	1090	100

Table 4: Distribution of cases of presentation of AUB

Symptoms	Number (%)
Menorrhagia	274 (25.13)
Metrorrhagia	301 (27.61)
Polymenorrhagia	227 (20.82)
Polymenorrhoea	118 (10.82)
Continuous bleeding	170 (15.61)
Total	1090 (100)

Table 5: Pap smear findings in cases

Pap smear findings	Number (%)
Normal	1036 (95.04)
Abnormal	54 (4.95)

biopsies. The most common hysteroscopic finding was normal endometrium, which was recorded in 759 (69.62%) of the cases. 166 cases were found to be having endometrial hyperplasia. Four cases found endometrial carcinoma, 26 of them had polyps and 22 cases had submucosal myoma. [Table 4](#) shows the presentation of patients. The highest number of cases had metrorrhagia 301, 227 cases had polymenorrhagia, and 274 cases had menorrhagia. A total of 1036 patients had normal pap smear findings done before the procedure. Pap smear findings are depicted in [Table 5](#).

DISCUSSION

Unusual uterine bleeding is regarded as a crucial indicator of either benign or malignant uterine illness. In this study, 52% of the 1090 hysteroscopic exams were conducted with AUB as the major explanation. This percentage is consistent with studies in the literature, where AUB is likewise the most common reason for hysteroscopy.^{22–24} Endometrial polyps, which are most frequently seen in individuals with AUB, were the most prevalent hysteroscopic findings in those patients. In 2.39% of the exams, endometrial polyps were noted during the hysteroscopic impression, and 3% of those exams had histological confirmation. We are aware that the evaluation and characterization of lesions seen during hysteroscopy may contain inaccuracies and subjectivity. Nevertheless, this lower number of normal outcomes occurred with the histologic



diagnosis but not with the hysteroscopic findings, in contrast to those described in previous investigations.^{25–27} Given that our endometrial polyp prevalence falls within the same 10–33% range as that of earlier studies, it is likely that more cases of other bleeding-related illnesses have been diagnosed. In our study, there were more aberrant histopathological findings than usual, and we think there are two key reasons for this. First, we were better able to pinpoint suspicious-looking sites where guided biopsy could be used to collect tissue indicative of the pathology thanks to hysteroscopic vision. Second, using the liquid distension medium allowed for improved imaging of tiny lesions, particularly in circumstances when glycine distension would have been obstructed by mucus or small amounts of blood. In certain cases, the sight of blisters and blood may lead to an inaccurate hysteroscopy diagnosis.²⁷ We have been using a liquid distension medium instead of a gaseous medium since 2011 (saline). The liquid medium aids in the identification of endometrial polypoid formations and is especially effective in the identification of endocervical formations since it allows the examination to be performed with bleeding or secretions in the uterine cavity. This reduces the likelihood that tiny polyps may go undetected. This is crucial because tiny polyps, especially those in the cervical canal, which can form crypts when in touch with glycine and when cervical mucus is present, may be the cause of bleeding. The view with a “clearer” field and fewer residues makes it simpler to identify more disease-representative regions (such as small patches of fluffy endometrium, changes in the consistency of polyps, or changes in vascularization), which makes it simpler to select the best location for biopsy and ultimately boosts the histopathological yield. When endometrial polyps include localized neoplasias or when endouterine visibility is not excellent, endometrial cancer may go unnoticed.²⁸ In diseases that result in uterine hemorrhage, we think that guided biopsy of the region with significant alterations can improve the diagnostic yield. Directed biopsy is less painful and can be performed repeatedly until enough tissue is recovered for histologic analysis. These advantages, in our opinion, are crucial for accurately identifying endometrial hyperplasia and malignancy in polyps identified by hysteroscopy. In addition, hysteroscopic guided biopsy allows for more accurate detection of hyperplasia in the endometrium with small localized vascular anomalies, whether it is healthy or unhealthy. The guided biopsy method is well respected in our facilities for the investigation of very small localized lesions. Therefore, we believe it is dangerous to presume that the discovery of endometrial polyps using hysteroscopic visualization or other imaging modalities is conclusive. It is crucial to perform a biopsy or full excision for histological analysis.^{29,30} Our study has a number of restrictions. This research like any retrospective study, this one had difficulties with medical record abstraction, and some data were just not available. Tissue samples were not examined to confirm the histological diagnosis; only histopathology reports were used. Our retrospective investigation spanned a decade. During this period, hysteroscopic technology advanced, and the study’s distension medium was changed halfway through. Together, these elements undoubtedly enhanced the precision of guided biopsy and hysteroscopic imaging over time. We point out that the ladies who participated in this study came from a particular group, thus our conclusions might or might not be generalizable. This study emphasizes the value of methodically linking tissue

histology to hysteroscopic results. Future studies have to look for relationships between hysteroscopic and histological findings; future gynecologic examinations; and long-term clinical results.

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