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Original Research Article

Study of Histopathological Pattern of Endometrial Lesion in Abnormal Uterine Bleeding

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Abstract

Background: One of the most frequent presenting symptoms in the gynaecology out-patient department is abnormal uterine bleeding (AUB). When there is aberrant uterine bleeding without a known reason, it is referred to as dysfunctional uterine haemorrhage. For the patient with abnormal uterine bleeding to be managed effectively, an assessment of the endometrium's histological pattern is necessary. Endometrial biopsy may be utilised successfully as the initial step in DUB diagnosis.

Methods: In order to determine the endometrial aetiology of DUB, this study examined the endometrium's histology. This prospective study is being conducted by the pathology department. This study used 150 cases of endometrial scrapings and hysterectomy specimens that were received at the pathology lab of the Nalanda Medical College and Hospital in Patna, Bihar. The trial lasted a full year, from March 2020 to February 2021. For the final analysis, 150 endometrial lesions with histopathological diagnoses were chosen.

Results: The age range of 40 to 49 years represented the majority of DUB cases (49.3%). Proliferative endometrium (29.3%), secretory endometrium (14%) and simple cystic hyperplasia (9.3%) were the most prevalent patterns in these patients. Endometrial polyp, complex hyperplasia without atypia, endometrial cancer, pill endometrium, complicated hyperplasia with atypia, endometritis, atrophic endometrium, and adenomatous hyperplasia were some of the other patterns found. Age pattern and endometrial causes of DUB were statistically significant with a P value <0.05. In order to rule out cancer, a thorough histopathological examination of the endometrium should be performed on women who report with abnormal uterine bleeding, especially after the age of 40.

Conclusion: In situations of dysfunctional uterine haemorrhage, it is helpful for diagnosis, to evaluate therapeutic response, and to understand the pathological incidence of organic lesions before surgery.

Keywords: Abnormal uterine bleeding, Endometrial hyperplasia, Endometrial carcinoma, Endometrium.

Introduction

The endometrium is a hormonally responsive and sensitive tissue that constantly goes through changes while a woman is actively trying to get pregnant. Numerous gynaecological illnesses affect women. One of them is dysfunctional uterine haemorrhage, which has a serious morbidity since it affects people's social, familial, and personal lives. One of the most frequent ailments for which patients visit the gynaecological outpatient clinic is abnormal uterine bleeding. When there is aberrant uterine bleeding without a known reason, it is referred to as dysfunctional uterine haemorrhage. It is a widespread issue with a lengthy list of potential causes in all age groups; therefore, knowledge of age, menstrual history, and clinical examination are necessary before evaluating endometrial samples. Histopathology, which is still the gold standard for making a clinical diagnosis of endometrial pathology, can assess AUB, which can manifest in a variety of ways. An abnormal amount of uterine bleeding affects 9 to 30 percent of reproductive-age women, according to estimates. Age-related increases in prevalence peak right before menopause. Women in their teen years and during menopause are particularly at risk because the majority of cases are linked to anovulatory menstrual cycles. When there is no other obvious medical explanation, it is an exclusionary diagnosis. The endometrial biopsy is selected over other diagnostic techniques for evaluating irregular uterine bleeding because it has a number of benefits. By examining histological results in endometrial tissue samples, the goal of this study was to identify the most prevalent age group and common pathology causing abnormal uterine bleeding.

Materials and Methods

This prospective study was conducted at the Nalanda Medical College and Hospital in Patna, Bihar, on the histology of endometrium in patients who presented with abnormal uterine bleeding. The trial lasted a full year, from March 2020 to February 2021. Endometrial tissue from patients who presented with abnormal uterine bleeding and were either seen in the OPD or admitted to the Obstetrics and Gynecology department of our hospital served as the study's source of material. This tissue was sent for histopathological analysis to the department of Pathology. This study includes endometrial tissue from patients of all ages who have been clinically diagnosed with AUB (without any organic pathology), including Normal Ovulatory AUB, Anovulatory AUB like insufficient follicular development, and Ovulatory AUB like in Persistent Corpus Lutum.

Patients with AUB who have had hysterectomy specimens, organic lesions of the genital tract and organs like leiomyomas and adenomyosis, genital tract infections, systemic causes, and other lesions. After being fixed in 10% formalin, the endometrial tissue was removed in its entirety for standard processing. Haematoxylin and Eosin (H & E) staining was used to examine sections with a thickness of 0.5 microns under a microscope. From the hospital and lab records, pertinent clinical data was gathered. Pathologists performed a microscopic inspection, and a second opinion was obtained to lessen observer bias.

Results

According to Table 1, there were 150 cases of endometrial lesions in the current investigation. The dilatation and curettage (D&C) procedure was used to collect all of the endometrial samples included in the study. The patients' ages ranged from 21 to 78 years old, with a mean of 49.5 years. The age range of 40-49 was found to have the highest frequency of DUB. Menorrhagia was the most frequently reported ailment in

73 participants (48.6%). According to table 2, proliferative endometrium (29.3%), secretory endometrium (14%) and simple cystic hyperplasia (9.3%) were the most prevalent pathologies in these individuals. Endometrial polyp (9.3%), complex hyperplasia without atypia (8%), endometrial cancer (6%), pill endometrium (5.3%), complicated hyperplasia with atypia (4.7%), endometritis (4.7%), atrophic endometrium (4%) and adenomatous hyperplasia (2%), among other patterns, were also found. Proliferative endometrium was discovered in 44 cases (29.3%) of patients under the age of 40, and secretory endometrial in 21 cases (14%) of patients. In the fourth decade, endometrial polyp (9.3%), pill endometrium (5.3%), and endometritis (4.7%) were also prevalent.

Table 1: Age distribution of cases

Age group (in years)	No. of cases	Percentage
20-29	6	4%
30-39	42	28%
40-49	61	40.7%
50-59	22	14.7%
60-69	15	10%
70-79	4	2.6%
Total	150	100%

Table 2: Histopathological Lesions of Endometrium

Endometrium Pattern	No. of cases	Percentage
Proliferative Endometrium	44	29.3%
Secretory Endometrium	21	14%
Pill Endometrium	8	5.3%
Atrophic Endometrium	6	4%
Endometritis	7	4.7%
Endometrial Polyp	14	9.3%
Simple Cystic Hyperplasia	19	12.7%
Adenomatous Hyperplasia	3	2%
Complex Hyperplasia without Atypia	12	8%
Complex Hyperplasia with Atypia	7	4.7%
Endometrial carcinoma	9	6%
Total	150	100%

The incidence of endometrial hyperplasia and endometrial cancer peaked after the fourth decade of life, indicating that the incidence of both conditions rises with advancing age. The majority of cases with atrophic endometrium were in elderly patients, and endometrial cancer and postmenopausal haemorrhage were the two most frequent findings.

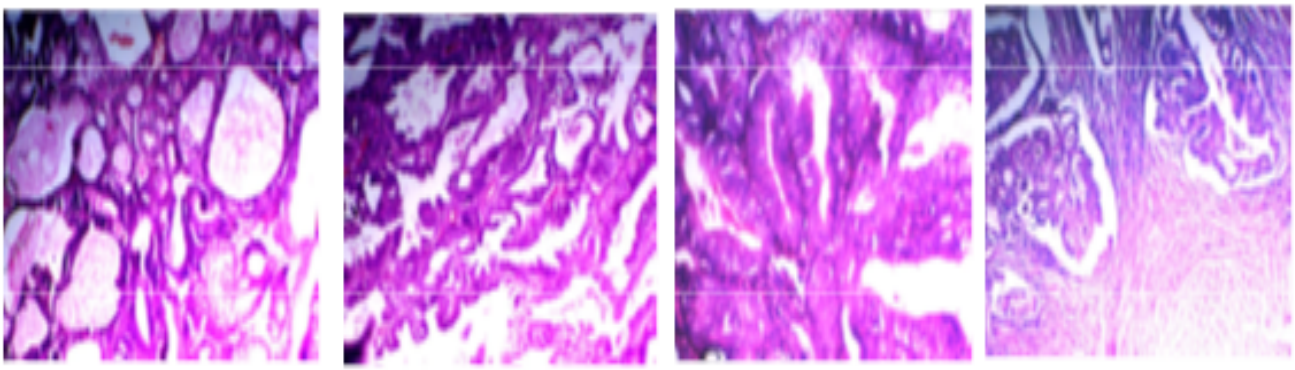

Figure 1: H & E 100 X: Cystic glandular Endometrial Hyperplasia
Figure 2: H & E 100 X: Complex Endometrial Hyperplasia without Atypia
Figure 3: H & E 400 X: Complex Endometrial Hyperplasia with Atypia
Figure 4: H & E 100 X: Endometrioid Adenocarcinoma with Tumor Cells in Glandular Pattern & Desmoplastic Stroma

Discussion

Any bleeding from the uterus that is not monthly menstruation is referred to as abnormal uterine bleeding. AUB secondary to organic pathology or dysfunctional uterine haemorrhage has long been the classification [1]. All reproductive women of childbearing age can experience abnormal uterine bleeding without structural pathology, but adolescents and perimenopausal women experience it more frequently [2].

The most frequent anovulatory cycles occur during the perimenopausal years, which alter the endometrium and leads to irregular bleeding [3]. Chronic anovulation is accompanied by an unexpected and erratic pattern of bleeding that can range from brief cycles with meagre bleeding to protracted periods with erratic high loss. When progesterone and oestradiol are stopped, normal bleeding happens. In the absence of ovulation, progesterone prevents the endometrium from secreting changes and causes anomalies in the production of prostaglandins, steroid receptors, and other locally active endometrial products. Unopposed oestrogen causes prolonged proliferative or hyperplastic endometrium, and the bleeding associated with oestrogen discontinuation is typically asymptomatic and erratic [4].

150 endometrial samples from women between the ages of 21 and 78 who had been seen by the Nalanda Medical College and Hospital, Patna, Bihar, were included in the current study. The case sheets and request forms contained pertinent clinical information that was gathered. The age range between 40 and 49 years old had the highest incidence of AUB in the current study. AUB was rarer in people above the age of 49 compared to people between the ages of 40 and 49.

The perimenopausal age group [5-9], has the highest incidence of AUB in our study and previous investigations. The number of ovarian follicles declines and the quantity of estradiol fluctuates as women approach menopause, which causes periods to shorten and frequently become intermittently anovulatory [10]. Menorrhagia was identified as the most typical complaint in our study and previous investigations [5]. Our patients tended to fall into the multiparity category. The majority of

investigations found that as parity increased, the incidence of AUB increased as well [5,11]. The proliferative endometrium was the most prevalent endometrial pattern among non-organic reasons in perimenopausal women. The blood loss Anovulatory cycle may be the cause of the proliferative phase. These results concur with those of Sahid Khan, Sadia Hameed, and Aneela Umber [1] and Vijay Kumar *et al* [12]. The second-most frequent pattern in our study, secretory phase endometrium, was seen in 14% of cases, coinciding with studies by Bhosle *et al*. and Sajitha *et al*. (16.6% and 26%, respectively) [1,13]. Bleeding in the Secretory phase is due to adulatory dysfunctional uterine bleeding [14].

Endometrial hyperplasia is the most frequent pathology we have seen among the organic causes. In 27.4% of instances, endometrial hyperplasia was discovered. Due to the age group and number of cases in their study, K. Sajitha *et al*. determined it to be 56.4%, which is higher than our findings. Because they are regarded to be the antecedents of endometrial cancer, endometrial hyperplasia is significant [15].

The likelihood of hyperplasia developing into cancer is 5–10% overall [16], Simple (SH) [Figure 1], Complex (CH) [Figure 2] , simple atypical (SAH), and complex atypical hyperplasia (CAH) [Figure 3], have different progression risks of 1%,3%, 8% and 29% respectively to carcinoma [16]. The different types of hyperplasias observed in this study were SH -19 (12.7%), Adenomatous hyperplasia-3 (2%), CH -12 (8%), and CAH -7 (4.7%).

Our study's 9.3% endometrial polyp incidence is comparable to the 9.65%, 9.8%, and 10% reported by Junu *et al*., Khans *et al*., and Acharya *et al* [1,17,18] 4.7% of cases had endometritis, which is consistent with the study of Junu *et al*, which reported 5.2% of instances to have the condition [17].

Pill endometrium was found in 5.3% of the patients in our analysis, which is consistent with the 7.6% found in Sajitha *et al* study's [5]. The endometrium displays a combination of dormant glands, ectopic secretions, decidual response, and thin blood vessels in this pattern [19]. The perimenopausal age range was where this tendency was most prevalent. This was most likely brought on by an upsurge in people of this age seeking out early medical treatment for bleeding.

The most frequent reason for bleeding in the postmenopausal stage is atrophic endometrium [20]. Veins with thin walls that are superficial to growing cystic glands are more prone to damage and cause excessive uterine bleeding. In 4% of the instances, the endometrium was atrophic, which is comparable to the findings of studies by Cornitescu *et al* and Sajitha *et al* [5-20]. which found 4.3% and 5.1%, respectively.

Endometroid type endometrial carcinoma made up 6 out of the 9 cases of endometrial carcinoma, making it the most common form [Figure 4]. villoglandular variety, two cases of endometroid cancer with squamous differentiation, three cases of endometroid adenocarcinoma. Postmenopausal bleeding was the most frequent presenting symptom in these individuals, which was consistent with the findings of the Baral R *et al* study [21].

Conclusion

The age of the patient affects the type of endometrial lesions. Particularly in premenopausal women, anovulatory haemorrhage was prevalent. Dilatation and curettage endometrial sample is a reliable and efficient diagnostic procedure. Its interpretation can be difficult, and there might be a lot of interobserver variability.

The interpretation of endometrial samples necessitates the clinical knowledge of age, menstrual history, parity, and imaging investigations. In different types of AUB, D&C reveals endometrial patterns and also aids in ruling out any organic pathology. The endometrium should therefore be histopathologically examined in women over 40 to rule out preneoplastic lesions and cancer.

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