

ORIGINAL RESEARCH

A study of the histopathological spectrum of the endometrium in hysterectomised specimens from women who had abnormal uterine bleeding

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ABSTRACT

Aim: The aim of the present study was to assess the histopathological spectrum of endometrium in hysterectomy specimens from cases of abnormal uterine bleeding.

Methods: The present prospective study was conducted in the Department of Pathology and Out of 280 hysterectomy specimens, a total of 200 women presenting with AUB on whom hysterectomy was performed for 2 years were studied.

Results: AUB was most frequent in women aged 41-50, with 90/200 (45%). Heavy menstrual bleeding affected 60 (30%) of 200 women. Histomorphological findings in 16 postmenopausal haemorrhage instances demonstrated proliferation. Dual endometrial histopathology alterations were found in 4 women. Two ladies had endometrial hyperplasia with chronic endometritis, one had polyp and one had chronic endometritis. Dual results were most common in reproductive age.

Conclusion: Women often have abnormal uterine bleeding as they age. Medical therapy and conservative operations are available; however, hysterectomy is the only option for abnormal uterine bleeding in developed nations. Even grossly normal hysterectomy materials should be histopathologically examined independently of the preoperative diagnosis since incidental abnormalities may be identified.

Key words: Abnormal uterine bleeding, hysterectomy, endometrial histopathological examination

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INTRODUCTION

The endometrium refers to the inner lining of the uterine cavity. It experiences dynamic physiological and morphological changes during the menstrual cycle in response to the sex steroid hormones produced by the ovary¹. A typical monthly cycle lasts for around 28 days, with a variation of plus or minus 7 days. The period of menstruation itself typically lasts for around 4 days, with a possible variation of plus or minus 3 days. The volume of blood lost during each cycle ranges from 30 ml to 80 ml. Abnormal uterine bleeding (AUB) is not an illness but rather a symptom that occurs when there are variations in the frequency, length, and volume of bleeding during the regular menstrual cycle or after menopause.

Previously, AUB was characterized by terminology such as menorrhagia, dysfunctional bleeding, and

oligomenorrhea; however, these labels are no longer used. Currently, AUB has undergone updates to standardize its terminology². In early 2011, FIGO released a revised categorization for the causes of irregular uterine bleeding in women of reproductive age³. There are three main reasons of abnormal uterine bleeding (AUB): anatomic factors, hormonal imbalances, and other factors such as infections, systemic disorders, drugs, and pregnancy difficulties⁴. The incidence of women experiencing Abnormal Uterine Bleeding (AUB) in India is around 17%⁵. The female reproductive system is a complex but fascinating anatomy including the exterior and internal genitalia, uterus, ovaries, fallopian tubes, and vagina. The uterus, sometimes referred to as the womb and cervix, is one of the most important female

reproductive organs. They are prone to both cancerous and non-cancerous disorders.

The uterus consists of the endometrium and myometrium, both of which are influenced by hormones, serve as a dwelling for fetuses, and experience a monthly shedding of the endometrial mucosa.⁶ Endometrial and corpus of the uterus, together with cervical lesions, are the primary reasons for patients seeking gynaecological care⁷. Although there are other therapeutic alternatives available, including medicines and conservative surgical procedures, hysterectomy continues to be the most often done gynaecological surgery worldwide⁸. Charles Clay performed the first partial hysterectomy in Manchester, England, in 1843. The first whole abdominal hysterectomy was done in 1929⁹.

A wide range of medical issues, including irregular uterine bleeding, pelvic discomfort, pelvic inflammatory disease (PID), uterine prolapse, adenomyosis, endometriosis, fibroids, gynaecological cancers, and complications during pregnancy have been documented. It is necessary to do histological examination on every hysterectomy sample since histology is the only means of obtaining the final diagnosis¹⁰. During a typical menstrual cycle, which typically lasts 28±7 days and has a length of 4±3 days, the amount of blood lost is usually between 30 and 80 mL every cycle. Abnormal uterine bleeding (AUB) is the term used to describe any noticeable divergence from normal menstruation in terms of frequency, regularity, duration, and volume. AUB encompasses a range of characteristics and categories, including oligomenorrhea, menorrhagia, menometrorrhagia, polymenorrhagia, and spotting^{11, 12}. Postmenopausal women are characterised by experiencing any kind of bleeding one year following the cessation of menstruation¹³. AUB, or abnormal uterine bleeding, is a prevalent gynaecological condition that affects women of reproductive age who are not pregnant. It is responsible for about 33% of visits to gynaecological clinics¹⁴.

The aim of the present study was to assess the

histopathological spectrum of endometrium in hysterectomy specimens from cases of abnormal uterine bleeding.

Materials and Methods

This prospective research was undertaken at the Department of Pathology and A study was conducted on 200 women who had sequential hysterectomy over a period of 2 years, out of a total of 280 hysterectomy specimens. These patients were selected because they presented with abnormal uterine bleeding (AUB). The tissue samples were treated in an automated tissue processor and then embedded in paraffin. Thin slices measuring 5 microns were stained with Haematoxylin and Eosin (H & E). A total of 10 sections were examined and analysed.

Inclusion Criteria

This research includes women of all age groups who have been clinically diagnosed with abnormal uterine bleeding and are having hysterectomy.

Exclusion Criteria

Women who had abnormal uterine bleeding due to pregnancy reasons, cervical or vaginal pathology, coagulopathy, or other systemic causes were not included in the study.

The comprehensive clinical history, together with the findings of pertinent tests, was gathered from the patient's case file and histopathological request forms that were received along with the specimens. The hysterectomy specimens were received in a solution of 10% formalin. The uterus was examined thoroughly following the surgical grossing procedure for hysterectomy outlined by Rosai & Ackermann and Robert Kurmann^{15, 16}.

Results

Table 1: Distribution of cases according to age groups and bleeding pattern

Age groups in years	N	Percentage (%)
<30	40	20
31-40	90	45
41-50	70	35
Type of bleeding		
Heavy menstrual bleeding	60	30
Heavy prolonged menstrual bleeding	10	5
Intermenstrual bleeding	52	26
Frequent menstrual bleeding	40	20
Postmenopausal bleeding	38	19
Total	200	100

The most common age group of females presenting with AUB was found in the age group of 41-50 years; in this group 90/200 (45%) female were found. Heavy

menstrual bleeding was the most common presenting symptom accounting 60 (30%) out of 200 women.

Table 2: Histomorphology of endometrium in females with heavy menstrual bleeding

Histomorphology of endometrium	N
Proliferative phase	16
Secretory Phase	12
Hormonal imbalance	5
Endometrial hyperplasia	12
Endometritis	10
Endometrial polyp	3
Endometrial stromal sarcoma	2

The histomorphological patterns in postmenopausal phase. bleeding were found in 16 cases showed proliferative

Table 3: Dual histomorphological findings in endometrium

Patterns	31-40	41-50	Total
Endometrial hyperplasia+ chronic endometritis	2	-	2
Polyp+ chronic endometritis	-	1	1
Endometrial hyperplasia +polyp	1	-	1
Total	3	1	4

The result showed dual histopathological changes in endometrium in 4 women. These are endometrial hyperplasia with chronic endometritis in two females, endometrial hyperplasia with polyp, polyp with chronic endometritis in one case each. The most frequent dual findings were in reproductive age group.

Discussion

The endometrium is a dynamic and hormonally responsive tissue that undergoes cyclic changes throughout the reproductive lifespan. Abnormal uterine bleeding (AUB) is a frequently reported issue that often prompts the need for endometrial sample during endometrial curettage. It affects 10-30% of women of reproductive age and up to 50% of women in the perimenopausal stage. Seventeen Abnormal uterine bleeding is characterised by a bleeding pattern that deviates in terms of frequency, length, and quantity from the typical bleeding pattern found during a normal menstrual cycle or after menopause. Eighteen Abnormal uterine bleeding may manifest as several types of bleeding, including menorrhagia (excessive menstrual bleeding), metrorrhagia (irregular bleeding between periods), polymenorrhea (frequent menstrual cycles), metromenorrhagia (excessive and irregular bleeding), as well as bleeding occurring during the perimenopausal and postmenopausal periods¹⁹.

The predominant age group for females presenting with AUB was between 41 and 50 years, with 90 out of 200 (45%) females falling into this category. Other research on AUB revealed that 33-59% of individuals presented with the condition between the age of 41-50 years²⁰⁻²⁴. The higher occurrence of abnormal uterine bleeding in the age range of 41-50 years may be attributed to the fact that these individuals are experiencing their climacteric stage²¹. This trend was often seen in our research, as well as in other investigations, among women in the late reproductive and perimenopausal stages. It is likely caused by hormonal imbalance in this population, resulting in

intermittent cycles without ovulation. Doraiswami *et al.*²⁵ demonstrated that the majority of instances of Abnormal uterine bleeding (AUB) were attributed to typical physiological stages, including proliferative, secretory, and atrophic menstrual patterns. Anovulatory cycles may cause bleeding during the proliferative phase, whereas ovulatory dysfunctional uterine haemorrhage may result in bleeding during the secretory phase. The bleeding that occurs during the secretory phase is caused by dysfunctional uterine bleeding related to ovulation. The primary issue is in the regulation of processes that limit the amount of blood loss during the shedding of the endometrium in the menstrual cycle. Bleeding is defined as the occurrence of frequent bouts of excessive menstrual blood loss, often known as menorrhagia.

The most prevalent presenting symptom among the 200 women was heavy menstrual bleeding, accounting for 60 cases (30%). Heavy menstrual bleeding is described in 45-54% of patients in alternative research^{26, 27}. Out of the total number of cases, 16 displayed histomorphological patterns indicating the proliferative phase in postmenopausal bleeding. The findings revealed concurrent histological alterations in the endometrium of four individuals. Two females have been diagnosed with endometrial hyperplasia accompanied by chronic endometritis. Additionally, there is one instance each of endometrial hyperplasia with polyp and polyp with chronic endometritis. The reproductive age group had the highest frequency of dual results. Endometrial hyperplasia occurs when the lining of the uterus thickens due to long-term exposure to oestrogen, either from internal factors like persistent anovulation or external factors like hormone replacement medication. From a clinical perspective, endometrial hyperplasia presents as excessive uterine bleeding. Endometrial hyperplasia, characterised by structural and functional changes in the glands and stroma of the endometrium, may occur before or alongside endometrial cancer²⁸.

The majority of hysterectomies are performed to address benign gynaecological conditions, such as fibroids, dysfunctional uterine haemorrhage, and uterine prolapse. Hysterectomy in India has been a prominent topic in recent health policy discussions²⁹. The catalyst for heightened attention is a succession of media stories that have emphasised an atypical upswing in the quantity of women receiving hysterectomy in various regions of the nation, with a noteworthy proportion of instances involving young and pre-menopausal women from economically disadvantaged households³⁰. The increasing prevalence of young women having hysterectomy has prompted concerns over unethical activities among healthcare practitioners. Therefore, the topic of hysterectomy continues to be a subject of varied discussion because to its multifaceted impact on women, including physical, emotional, economic, sexual, and medical aspects³¹.

Conclusion

Abnormal uterine bleeding is a pathological condition that is connected to age and often experienced by women. Hysterectomy is the most effective therapy for abnormal uterine bleeding in both developing and rich nations, despite the availability of medical treatment and conservative operations. It is necessary to do histological investigation on all hysterectomy specimens, even if they seem normal, independent of the preoperative diagnosis. This is because unexpected incidental discoveries might be discovered in these specimens.

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