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Correlating Histopathological Findings with Clinical Features in Hysterectomies Performed for Abnormal Uterine Bleeding- A Record Based Study in A Tertiary Care Hospital

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ABSTRACT

Abnormal uterine bleeding (AUB) is defined as Any deviation in terms of cycle, duration of bleeding, amount of bleeding, or combination of all". Clinical diagnosis is based on symptoms and signs. The purpose of this study is to detect most common pathology causing abnormal uterine bleeding by studying histopathological findings in hysterectomy specimens and correlate various indications of abdominal hysterectomy with the histopathological findings of the specimens, thus determining the percentage of the pre-operative clinical diagnoses that were confirmed on histopathological examination. This was a retrospective record based 6 month study conducted from January 2023 to June 2023. A total of 168 (62.2%) AUB cases were examined out of 270 hysterectomy specimens sent for histopathology examination. Final histopathological diagnosis was compared with clinical and ultrasonography findings. Most of the patients belonged to the age group of 41-50 years and were multiparous. Most common symptom was heavy menstrual bleeding (HMB) 50%. The final histopathological diagnosis of hysterectomy specimens exhibited leiomyoma as the most common lesion in 31.5 % (53) cases followed by adenomyosis in 10.7% cases. Preoperative clinical diagnosis were confirmed in 87.5% of cases on histopathological examination. According to this study, benign disorders are more common than their malignant counterparts and leiomyoma is the most common pathology. Histopathological examination is the gold standard investigation for patients presenting with AUB.

INTRODUCTION

Menstruation is the cyclic uterine bleeding experienced by all women of reproductive age group. Abnormal uterine bleeding (AUB) is one of the most frequently encountered and perplexing condition in adult women[1]. Abnormal uterine bleeding (AUB) is defined as "any deviation in terms of cycle, duration of bleeding, amount of bleeding, or combination of all". AUB is the most common complaint that reproductive-age women bring to their gynaecologist[2]. AUB constitutes 9-14% of women between menarche and menopause in both ovulatory and anovulatory cycles, significantly impacting quality of life and imposing financial burden[2,3]. It is just a symptom not a disease. It occurs in various forms such as menorrhagia, polymenorrhagia, metrorrhagia and menometrorrhagia[4]. The two most important underlying pathology of AUB are leiomyoma and adenomyosis[5].

Clinical diagnosis is made on the basis of symptoms and signs but confirmation is done on histopathological examination of the representative tissue from the lesion[6]. The treatment for AUB includes both medical therapies and surgical procedures. Surgical options include Hysteroscopic polypectomy, Endometrial ablation, Myomectomy and Hysterectomy. Hysterectomy is one of the most commonly performed surgeries in the world[1]. Hysterectomy is the definitive treatment for excessive uterine bleeding in women who no longer wish to conceive[7]. Histopathological study of the hysterectomy specimen is mandatory for ensuring and confirming diagnosis, which has great impact on the management of the patient[8].

The study was conducted to detect the most common lesions leading to abnormal uterine bleeding by histopathological examination of hysterectomy specimen. And to correlate various clinical indications / preoperative clinical diagnosis of hysterectomy with final histopathological diagnosis.

Objectives of the Study:

• To Describe most common pathology causing abnormal uterine bleeding histopathologically.
• To validate provisional and radiological diagnosis against histopathological finding of abnormal uterine bleeding in hysterectomy patients.

MATERIALS AND METHODS

This was a record based retrospective study, conducted in the department of Pathology at Mandya Institute of medical sciences, Mandya for a period of 6 month from January 2023-June 2023. All reports of patient who underwent hysterectomy for abnormal uterine bleeding were included in the study. Hysterectomy performed for abnormal uterine bleeding with obstetrical causes were excluded.

Patient demographic and clinical data collected from patient records and documented in the prepared performa. Histopathological slides were collected from archives and reviewed and data was collected in the performa. Final diagnosis were compared with preoperative diagnosis.

The data was entered in a Microsoft Excel spread-sheet and was analysed using Statistical Package for the Social Sciences (SPSS) trail version 20.0 software. Frequency and proportion was used for descriptive statistics. Pearson's coefficient was used to find the correlation between two variables.

Ethical Consideration: Prior approval from the Institutional Ethics Committee (No. MIMS/IEC/2023/801) of MIMS, Mandya was obtained for the study

RESULTS AND DISCUSSIONS

In a 6 month study a total of 270 hysterectomy specimens were received in the department of pathology. Out of 270 cases,168 cases presented with AUB, with patients spanning a wide age range from 21 to over 60 years. A majority of the cases, 57.1% (96 cases) were found to be in the perimenopausal age range of 41-50 years, as indicated in Table 1 and 49 % of cases were with para 2 as described in table 2.

Heavy menstrual bleeding (HMB) was found to be the most common symptom, accounting for 50% of cases, followed by other lesions as mention in table 3.

The most common preoperative (clinical/provisional) diagnosis was fibroid, accounting to 52.4% of cases, followed by other lesions as tabulated in table 4

On histopathological examination leiomyoma was the most common finding (31.5%) followed by other lesions as tabulated in table number 5.

A detailed analysis of the correlation between clinical and histopathological findings of all the hysterectomy specimens are tabulated in table number 6. Notably, about 23.2% cases presented with more than one type of lesions on histopathological examination, indicating the complex nature of the AUB.

Disparity between clinical and histopathological diagnosis was noted in 21 (12.5%) cases as tabulated in table number 7.

In this study various lesions were diagnosed for abnormal uterine bleeding and were correlated with clinical indications/ clinical presentations. The correlation between histopathological diagnosis and clinical indications when compared with other researches provides a valuable insight into the critical aspect of gynaecological health. AUB was most common indication for hysterectomy comprising two-thirds of all cases.

In our study of 168 cases, the abnormal uterine bleeding was found to be more common in

perimenopausal age ranging from 41-50 years (57.1%) of the total cases followed by 31-40 years (26.7%) of the cases. The findings were in consistent with other studies with the similar range of presentation as in Kondareddy Radhika and E Gomathy, who reported 42.3% of cases in 41-50 years age range, and also Suman M, Meenakshi S and Nimmi C found 52.75% of the total cases in fifth decade (41-50 years) in their study.

In our study majority of patients with abnormal uterine bleeding (AUB) were in the multiparous group especially in second parity (49%). The study results were in consistent with Kondareddy Radhika and E. Gomathy, who reported 53.33% of cases in parity 2. These outcomes suggest that parity may be a contributing factor for AUB. Underscoring the importance of considering patients' parity can affect the assessment and treatment of the condition.
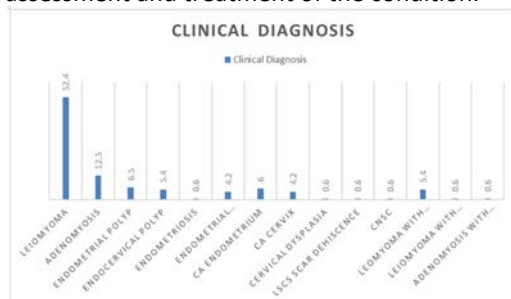

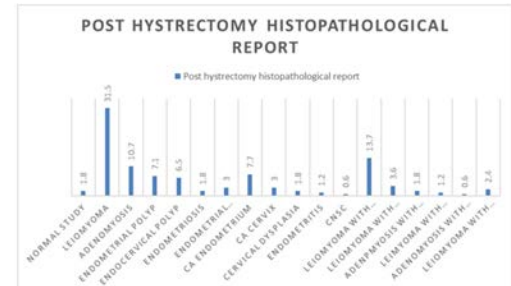Fig. 1: Graph depicting distribution of clinical diagnosis

Fig. 2: Graph depicting distribution of post hysterectomy histopathological report
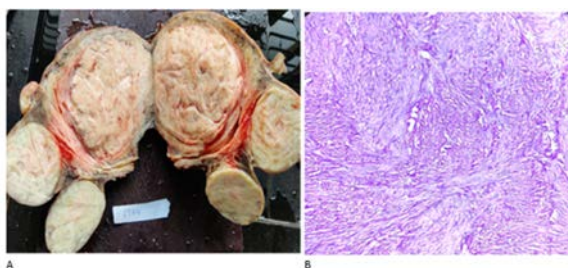

Fig. 3: Leiomyoma. (A) The uterus is opened to reveal multiple tumors in subserosal and intramural locations that display a firm grey-white whorled appearance of lesion on sectioning. (B) H and E section of Leiomyoma showing interlacing fascicles of monotonous spindle cell with indistinct border, 10X
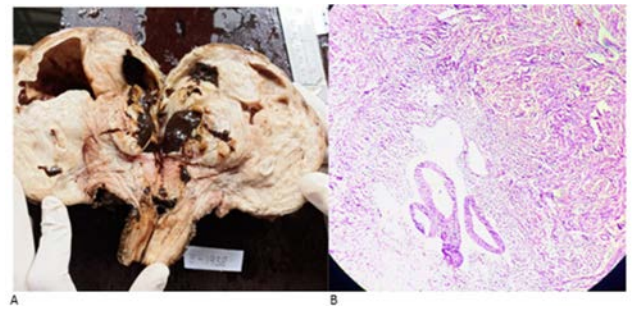
Fig. 4: Adenomyosis. (A) Asymmetrically enlarged uterus with blood filled cystic spaces. (B) H and E section shows endometrial gland and stroma in myometrium,10X.
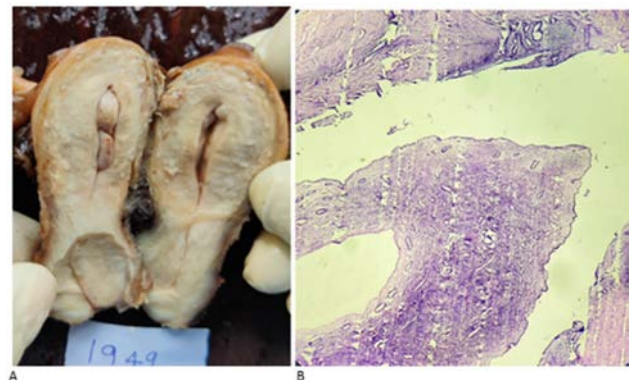
Fig. 5: Endometrial polyp. (A) Cut section of uterus show a pedunculated polyp arising from the endometrium.(B) H and E shows endometrial polyp lined by atrophied epithelium, subepithelium shows fibrocollaginous stroma and cystically dilated glands, 10X
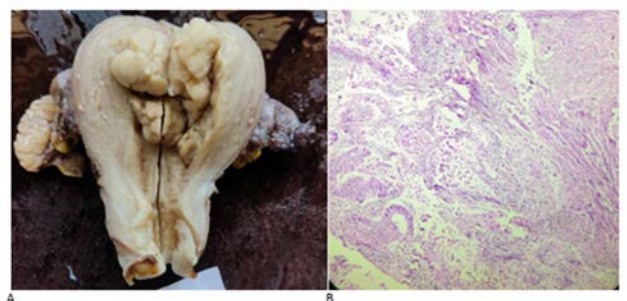
Fig. 6: Carcinoma endometrium. (A) Cut opened uterus showing a fungating mass arising from the fundus of the uterus. (B) H and E section shows endometrioid adenocarcinomas demonstrate glandular growth patterns,10X

Leiomyoma (52.4% of cases) was the most common histopathological findings followed by adenomyosis (18%) and other lesions. The study is in correlation with Kondareddy Radhika and E. Gomathy[1] who reported leiomyoma in 46.67% of cases, followed by adenomyosis in 23.33% of cases. In contrast, Rizvi[9]

**Table 1: Age wise distribution of hysterectomy specimen**

Age	No: of cases	%
21-30	1	0.59
31-40	45	26.7
41-50	96	57.1
51-60	12	7.1
>60	14	8.3
Total	168	100

Table 2: Case distribution based on parity

Parity	No: of cases	%
Nulliparous	3	1.78
1	37	22
2	83	49
3	40	23.8
>4	5	2.9
Total	168	100

Table 3: Case distribution based on clinical symptoms

Clinical symptoms	No: cases	%
Heavy menstrual bleeding (HMB)	84	50
Irregular menstrual bleeding	33	19.6
Post menopausal bleeding	26	15.4
HMB with Irregular menstrual bleeding	21	12.5
Metrorrhagia	4	2.3
Total	168	100

Table 4: Case distribution based on clinical diagnosis

Clinical diagnosis	No of cases	%
Leiomyoma	88	52.4
Adenomyosis	21	12.5
Endometrial polyp	11	6.5
Ca endometrium	10	6.0
Endocervical polyp	9	5.4
Leiomyoma with adenomyosis	9	5.4
Endometrial hyperplasia	7	4.2
Ca cervix	7	4.2
Cervical dysplasia	1	0.6
LSCS scar dehiscence	1	0.6
Endometriosis	1	0.6
Chronic nonspecific cervicitis	1	0.6
Leiomyoma with endometrial polyp	1	0.6
Adenomyosis with endometrial polyp	1	0.6
Total	168	100

Table 5: Case distribution based on histopathological diagnosis

Histopathological diagnosis	No of cases	%
Leiomyoma	53	31.5
Leiomyoma with adenomyosis	23	13.7
Adenomyosis	18	10.7
Ca endometrium	13	7.7
Endometrial polyp	12	7.1
Endocervical polyp	11	6.5
Leiomyoma with endometrial polyp	6	3.6
Endometrial hyperplasia	5	3.0
Ca cervix	5	3.0
Leiomyoma with endometrial hyperplasia	4	2.4
Cervical dysplasia	3	1.8
Adenomyosis with endometrial polyp	3	1.8
Endometriosis	3	1.8
Normal study	3	1.8
Endometritis	2	1.2
Leiomyoma with endometriosis	2	1.2
Chronic nonspecific cervicitis	1	0.6
Adenomyosis with salpingitis	1	0.6
Total	168	100

Table 6: Correlation between clinical and HPE diagnosis

Preoperative diagnosis of hysterectomy	Number of cases	Histopathology findings correlate with clinical diagnosis
Leiomyoma	88	53
Adenomyosis	21	18
Ca endometrium	10	13
Endocervical polyp	9	11
Leiomyoma with adenomyosis	9	23
Endometrial hyperplasia	7	5
Ca cervix	7	5
Endometriosis	1	3
Cervical dysplasia	1	3
Endometritis	1	2
Chronic nonspecific cervicitis	1	1
Leiomyoma with endometrial polyp	1	6
Adenomyosis with endometrial polyp	1	3
Leiomyoma with endometriosis	0	2
Adenomyosis with salpingitis	0	1
Leiomyoma with endometrial hyperplasia	0	4
Normal study	0	3
Total	168	168

Table 7: Disparity between clinical and histopathology report

No. of cases	Clinical diagnosis	Histopathological diagnosis
6	Intramural leiomyoma	Adenomyosis
3	Cervical leiomyoma	Endocervical polyp
3	Adenomyosis	Normal study
3	Submucosal leiomyoma	Endometrial polyp
2	Endometrial hyperplasia	Ca endometrium
2	Carcinoma Cervix	High grade cervical dysplasia
2	Adenomyosis	Leiomyoma

reported 41.46% for fibroid uterus and 46.36% for adenomyosis.

In this study, we compared the clinical and histopathology findings of all AUB cases. In 88 cases clinically diagnosed as fibroids, histopathological examination revealed 53 cases of leiomyoma, 18 cases of adenomyosis and carcinoma endometrium in 13 cases. Similarly, in a study conducted by Kondareddy Radhika and E. Gomathy[1] clinically, 46.67% were diagnosed to have fibroid, 23.3% had Adenomyosis, histopathological examination revealed that leiomyoma was present in 40% of cases, adenomyosis in 21.1% of cases. These findings emphasize the importance of considering other potential diagnoses, such as adenomyosis or carcinoma endometrium, in the differential diagnosis of patients with clinical diagnosis of fibroids.

In our study, 39 cases (23.21%) had more than one histopathological lesions, with 23 cases showing both leiomyoma and adenomyosis, 6 cases showing both leiomyoma and endometrial polyp and other combined lesions as mentioned in table no 5. Notably, these findings had been missed during preoperative evaluation and were only detected after systematic histopathological examination. These results highlight the importance of conducting a comprehensive preoperative evaluation and the critical role of systematic histopathological examination in identifying additional pathological lesions that may require further management.

In our study a disparity between the clinical diagnosis and final histopathological diagnosis was noted in 12.5% of cases. Specifically, six cases were reported as adenomyosis but were clinically diagnosed as intramural leiomyoma, while three cases were clinically diagnosed as adenomyosis but reported as normal study as tabulated in table no 7.

Our analysis revealed a significant pattern in cases where clinical diagnosis and final histopathological diagnosis were discordant. The most common source of discrepancy was the misdiagnosis of intramural leiomyoma as adenomyosis, highlighting the well-established challenge of differentiating between various uterine pathologies based on clinical presentation alone. This finding is consistent with existing literature, emphasizing the importance of histopathological evaluation in achieving accurate diagnostic certainty and underscoring the limitations of relying solely on clinical symptoms for diagnostic purposes[1,3,6].

However, that the overall reliability of preoperative clinical diagnoses in our study was high, with the majority of cases (87.5%) having confirmed diagnoses on histopathological examination. This suggests that preoperative clinical diagnoses are still a valuable tool in guiding treatment decisions and patient management. Nonetheless, clinicians should remain vigilant and aware of the potential for misdiagnosis, particularly in cases where clinical presentation is ambiguous or there are multiple potential diagnoses.

CONCLUSION

The findings of the study demonstrate a higher incidence of benign diseases than malignant ones, with leiomyoma being the most commonly identified pathology. Notably, there was a strong correlation between the clinical diagnosis and histopathological diagnosis, particularly for benign conditions. However, a few cases presented with incidental additional findings such as salpingitis, chronic cervicitis and endometrial hyperplasia. As a result, it is imperative to conduct a thorough histopathological examination of every hysterectomy specimen, regardless of its gross appearance, to verify the diagnosis and improve postoperative management.

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