

## Original Research Article

# Histopathological spectrum in cases of abnormal uterine bleeding: a cross sectional study in tertiary care hospital in Tripura

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## ABSTRACT

**Background:** Majority women encounter abnormal uterine bleeding in their life where the causes are not limited to cancer even unknown. The actual cause has not been studied in north-east part of India. This data is scarce in State of Tripura. The present study aims to find out histomorphological patterns of AUB reported in AGMC & GBP Hospital in a calendar year.

**Methods:** A cross sectional study was conducted over 2 calendar year from 2021 to 2022 where the cases of AUB irrespective of age, who had undergone endometrial biopsy, endometrial curettage and hysterectomy in Obstetrics and Gynaecology department, AGMC were examined histomorphologically in the dept of Pathology, AGMC. Data were collected in predesigned proforma and analysed using SPSS 21.0 and expressed in both descriptive and inferential statistics. Ethical approval was taken.

**Results:** Total 220 cases of AUB specimens were examined. Among the reported AUB cases, the mean age is  $42.5 \pm 7.42$  year. Overall, 16.81% of the cases of AUB shows normal tissue pattern and 83.19% with abnormal endometrial tissue. Out of 220 sample of AUB, the commonest cause was leiomyoma (20.45%) followed by endometrial hyperplasia (17.27%), adenomyosis (14.54%), mixed tumour lesion (9.09%), endometrial carcinoma (4.54%) and 1.35% shows cervical cancer.

**Conclusions:** Study concluded that In Tripura, majority AUB cases are due to leiomyoma, endometrial hyperplasia, adenomyosis and mixed inflammation indicating proper screening during reproductive stage of the women.

**Keywords:** Abnormal uterine bleeding, Histopathology, Endometrium, Leiomyoma

## INTRODUCTION

Abnormal Uterine Bleeding (AUB) is a common gynaecological problem and the principal reason for gynaecological consultation accounting for upto 20% of the visit to gynecologist.<sup>1</sup> Abnormal uterine bleeding may be acute or chronic and is defined as bleeding from the uterine corpus that is abnormal in regularity, volume, frequency or duration and occurs in absence of pregnancy.<sup>2</sup> Abnormal uterine bleeding (AUB) is a

collective terminology that includes both organic and non-organic causes.<sup>2</sup> Dysfunctional uterine bleeding (DUB) is a subgroup of AUB that includes abnormal bleeding due to non-organic causes. It is present in 50% of the women with AUB. An endometrial biopsy is usually done for abnormal uterine bleeding to rule out organic pathology. Age and menstrual history are particularly important, because the aetiologies of abnormal uterine bleeding differ according to the age and menstrual status.<sup>3</sup>

Determining the aetiology of AUB is essential for choosing the most appropriate management for the patient. The cause of AUB may be so simple as a physiological process but on the other hand, it may be a serious case of malignancy. It may be due to fibroma, adenomyosis, endometrial individual polyp, ovarian tumour, pelvic Inflammatory disease (PID), endometrial hyperplasia, endometrial carcinoma and hormonal imbalance (like hypothyroidism).<sup>4,5</sup> Histopathological examination of endometrium and uterus as a whole are major diagnostic tools in evaluation of AUB. Both endometrial biopsy and curettage are considered gold standard in cases of AUB. Hysterectomy in AUB cases is commonly done when there is associated leiomyoma, adenomyosis, endometrial hyperplasia or other pathology.<sup>6-8</sup> A wide range of lesions are encountered when hysterectomy specimens are subjected to histopathological examination. Though the histopathological analysis correlates well with the clinical diagnoses, quite a few lesions are also encountered as pure incidental findings. Hence, it is mandatory that every hysterectomy specimen, even if it grossly appears to be normal, should be subjected to detailed histopathological examination so as to ensure a better prospective management.<sup>9,10</sup>

After extensive search, no data has been found to be available in literature from this state of Tripura regarding different pathologies leading to AUB. Hence, the present study has been undertaken to examine endometrial biopsy, endometrial curettage and hysterectomy specimens to find out different pathological processes of uterus in cases of AUB. This study would give in depth knowledge about the various histopathological features and frequencies of uterine lesion of hysterectomy specimens in cases of abnormal uterine bleeding. It would help in management of cases of AUB by the gynaecologists and also would help to avoid unnecessary hysterectomy because not all cases of AUB need hysterectomy as some can be managed by medication alone.

**METHODS**

A cross sectional observational study was carried out in the department of pathology, Agartala Government Medical College (AGMC) Agartala Tripura, in collaboration with the department of Obstetrics and Gynaecology, AGMC, Agartala during January, 2021 to December, 2022 among all 220 cases of AUB irrespective of age, who had undergone endometrial biopsy, endometrial curettage and hysterectomy in obstetrics and gynaecology department, AGMC. The cases with pregnancy associated bleeding and known cases of infertility were excluded from the study. Sample size was not calculated as it was intended to include all eligible cases found during the study period. A predesigned performa, light microscope and others pathological instruments for histopathological

examinations were used to abstract the data. Data collection were done after obtaining the ethical approval from institutional ethics board, AGMC & GBP hospital. After operative procedure, all adequate and appropriate tissue specimen sample were collected and proper gross and histopathological examinations were done in the department of pathology, AGMC and their findings were recorded in predesigned Performa. The data generated were entered in a Microsoft excel and then transferred to SPSS (IBM) version 21.0. Categorical data were analysed in terms of frequency, rate, percentage and were tested for significance by Pearson's Chi-Square test. Quantitative data were analysed in terms of mean, standard deviation, and the significance of the outcome of analysed data were tested by para metric/non-parametric tests as appropriate. A p value <0.05 was considered as significance.

**RESULTS**

A total of 220 cases of AUB who underwent hysterectomy, endometrial biopsy and endometrial curettage was submitted for histopathological examination during the study period. The age of the patients studied were categorized into three groups namely reproductive, perimenopausal, and postmenopausal. Patients with AUB ranged from 26 to 78 years with a mean age of 42.5±7.42 years. Maximum patients (51.36%) with abnormal uterine bleeding were found in the age group of 41-50 years followed by 35% in reproductive (18-40 years) age group. The menopausal age group constituted 13.63% of cases (Table 1).

**Table 1: Age group distribution of cases of Abnormal uterine bleeding (AUB) (n=220).**

Age group (years)	N	%
<b>18-40 (reproductive)</b>	77	35.00
<b>41-50 (perimenopausal)</b>	113	51.36
<b>&gt;50 (postmenopausal)</b>	30	13.64

In the reproductive age group, the commonest histomorphological pattern was normal endometrium (10%), followed by leiomyoma (7.72%), endometrial hyperplasia (4.54%), endometrial polyp (3.36%) and adenomyosis (2.27%). In the perimenopausal age group, patterns were leiomyoma (12.27%), followed by endometrial hyperplasia (11.36%), adenomyosis (10.90%), normal endometrium (5.45%), endometrial polyp (1.81%) and endometrial carcinoma (1.36%). The image of histomorphological section of endometrial hyperplasia, adenomyosis and leiomyoma (Figure 1-3). The commonest histomorphological patterns in postmenopausal age group was endometrial carcinoma and endometrial polyp both showing (1.36%), followed by squamous cell carcinoma of cervix (1.81%), normal endometrium, endometrial hyperplasia and adenomyosis were showing the same percentage as (1.36%) (Table 2).

**Table 2: Morphological patterns of AUB cases according to age group (n=220).**

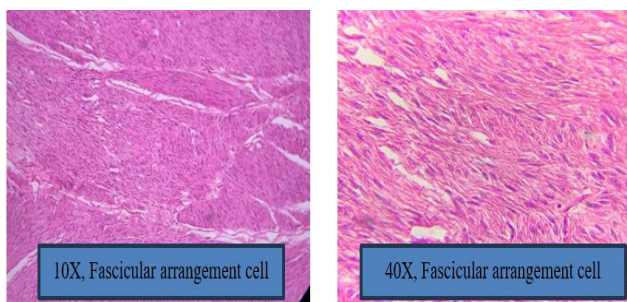
Histomorphological patterns	18-40 years, N (%)	41-50 years, N (%)	>50 years, N (%)	Total	%
Normal endometrium	23 (10)	11 (5.45)	3 (1.36)	37	16.81
Endometritis	00	00	1 (0.45)	1	0.45
Endometrial hyperplasia	10 (4.54)	25 (11.36)	3 (1.36)	38	17.27
Endometrial polyp	8 (3.36)	4 (1.81)	5 (2.27)	17	7.72
Endometrial hyperplasia/polyp	3 (1.36)	00	00	3	1.36
Arias-stella reaction	1 (0.45)	00	00	1	0.45
Leiomyoma	17 (7.72)	27 (12.27)	1 (0.45)	45	20.45
Adenomyosis	5 (2.27)	24 (10.90)	3 (1.36)	32	14.54
Leiomyoma and adenomyosis	6 (2.72)	12 (5.45)	2 (0.90)	20	9.09
Chronic cervicitis*	1 (0.45)	5 (2.27)	3 (1.36)	9	3.81
Cervical polyp*	00	1 (0.45)	00	1	0.45
Endometrial carcinoma	2 (0.90)	3 (1.36)	5 (2.27)	10	4.54
Squamous cell carcinoma of cervix*	00	1 (0.45)	2 (0.90)	3	1.35
Others*	2 (0.90)	1 (0.45)	1 (0.45)	4	1.81
<b>Total</b>	<b>77 (35)</b>	<b>115 (52.27)</b>	<b>28 (12.72)</b>	<b>220</b>	<b>100</b>

\*Although this lesions i.e. Chronic cervicitis, cervical polyp and squamous cell carcinoma of cervix are not included under AUB but observed on the sample sent for HPE study with clinical diagnosis of abnormal uterine bleeding.

**Table 3: Association between age category and uterine histopathology (n=220).**

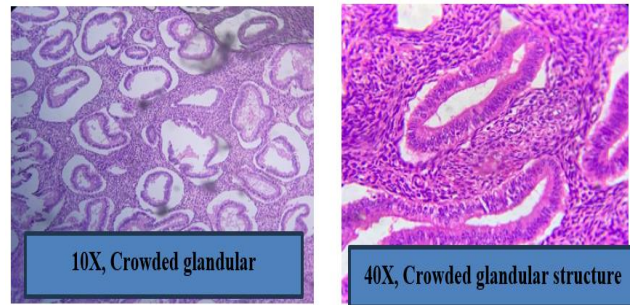
Uterine histopathology	18-40 years, N (%)	41-50 years, N (%)	>50 years, N (%)	P value
Normal	23 (62.16)	11 (29.72)	3 (8.10)	0.007
Abnormal	54 (29.50)	104 (56.83)	25 (13.66)	

Overall, 16.81% of the cases of AUB shows normal tissue pattern and 83.19% with abnormal endometrial tissue. Out of 220 sample of AUB, the commonest cause was leiomyoma (20.45%) followed by endometrial hyperplasia (17.27%), adenomyosis (14.54%), mixed tumour lesion (9.09%), endometrial carcinoma (4.54%) and 1.35% shows cervical cancer.

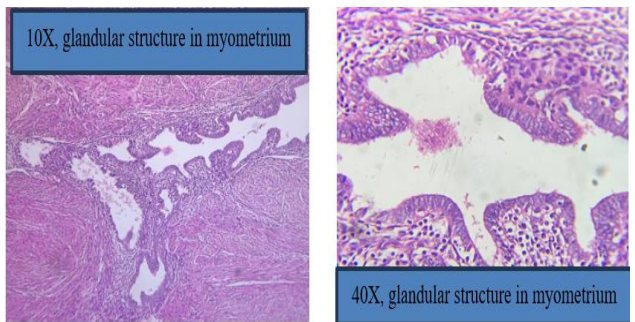


**Figure 1: Leiomyoma showing fascicular arrangement of cell (H&E,10X & 40X).**

Few AUB cases shows chronic infectious or inflammation origin (6.20%). The study also demonstrated that histopathologically abnormal uterine lesions were more in the age group of perimenopausal age group (56.8%), followed by reproductive age group (29.5%) and this difference is found to be statistically significant with a p value of 0.007 (Table 3).



**Figure 2: Endometrial Hyperplasia without atypia showing crowded glandular structure (H&E, 10X & 40X).**



**Figure 3: Adenomyosis showing glandular structure in myometrium (H&E, 10X & 40X).**



## DISCUSSION

Abnormal Uterine bleeding is the most common presentation in the gynaecology OPD which could be endometrial or cervical cause which need to be evaluated thoroughly. Any variation in the menstrual flow, frequency, volume, amount is defined as abnormal uterine bleeding. Although hysterectomy is most commonly performed surgery for abnormal uterine bleeding but it has its own morbidity.<sup>11</sup> Histopathological examination of an endometrial biopsy tissue material on light microscopy is considered the diagnostic gold standard for establishing endometrial pathology. The sensitivity of endometrial biopsy for the detection of endometrial abnormalities has been reported as high as 96%. Its significance rises multi fold in perimenopausal and postmenopausal age where endometrial carcinoma seen in 8-50% cases.<sup>12</sup>

In the current study 220 cases of AUB who underwent hysterectomy, endometrial biopsy and endometrial curettage were evaluated. The youngest patient who presented with AUB in our study were 26 years old and oldest were 78 years which is almost similar to the study done by Hyanki et al and Doraiswami et al.<sup>12,13</sup> Abnormal uterine bleeding predominantly affects women of perimenopausal (41-50 years) age group because of increased incidence of intrauterine lesions.<sup>14,15</sup> The highest incidence of AUB in this study was in the perimenopausal age group (52.27%), followed by reproductive age group (35%). This is also the commonest age group affected in most of the studies like Soleymani et al, Naem et al, and Patel et al where the findings shown 61.6%, 66.4%, and 50.8% in similar age group respectively.<sup>14-16</sup> The most common histomorphological patterns of cases of AUB (n=220) in this study were leiomyoma (20.45%), which is similar to the study done by Iqbal et al, Anita et al and Sujatha et al where leiomyomas are 25.9% and 36.7% accordingly. Study conducted by Gayathri et al found that leiomyomas is high (85.35) in South India. Similar findings were revealed by Snehal et al.<sup>17-20</sup>

The commonest myometrial lesion observed in present study were leiomyoma and majority of patients were in the range from 41-50 years age group (56.86%) which is in concordance with other studies done by Praseeda et al and Sapna et al where 33.5% and 55.0% respectively.<sup>21,22</sup> There are many minor factors or causes present AUB in the present study also but these are small number. These findings are in accordance to the many previous literature.<sup>9,12,15-17,20-23</sup>

### Limitations

The present study has some limitations as the participants were not randomly selected however, researcher tried to include all during study period. Moreover, the present study was conducted in single centre only, so actual representation could be missing. Risk factors and other

confounding factors were not taken into account and issues on causal relationship is present.

## CONCLUSION

The study concluded that in Tripura also one of the major causes that leads to abnormal uterine bleeding is the presence of leiomyomas followed by endometrial hyperplasia and adenomyomas which predominantly premenopausal phase i.e., age group between 41-45 years of the women. Study concluded with the recommendation that a further case control study or follow up study can be done involving multi-centre with higher sample size.

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