Original article

Clinicohistopathological correlation of lesions in abnormal uterine bleeding based on palm category of FIGO classification

Dr.Nikita Khandelwal, Dr.Garima Malpani

Department of Pathology, Sri Aurobindo Institute of Medical Sciences, Indore, India.
Corresponding Author- Dr. Garima Malpani , Associate Professor , Department of Pathology
Si Aurobindo Institute of Medical Sciences,Indore, India

Abstract

Background: Abnormal uterine bleeding is defined as any bleeding that corresponds with the frequency, duration or amount of blood flow of normal menstrual cycle and could be a sign of simple hormonal imbalance or a serious underlying condition necessitating aggressive treatment including a major surgical procedure.

Patients and Methods: The study included total of 300 hysterectomy specimens with the clinical diagnosis of Abnormal Uterine Bleeding during the period, October 2015 to July 2017 in the Department of Surgical Pathology of Sri Aurobindo Medical College and P.G Institute, Indore. Specimens received were processed , histopathological diagnosis was made according to new classification system of AUB (2013)[26,27,28] .

Results: The most common histopathological finding was adenomyosis (29.7%) followed by leiomyoma (25%), chronic cervicitis (24.7%), dual pathology (10.3%) of adenomyosis and leiomyoma, endometrial polyp (3.9%), atrophic uterus (2.3%), adeno-carcinoma of endometrium (0.7%) and leiomyosarcoma (0.3%).

Conclusions: Abnormal uterine bleeding is the commonest of all gynecological pathology in women of all ages caused by a wide variety of disorders. All hysterectomy specimens should be sent for histopathological examination for confirming diagnosis and ensuring optimal management .

Introduction

Uterus is subjected to variety of disorders. Hysterectomy is the definitive treatment of most uterine pathologies.[1] The most frequent indications of hysterectomy are uterine leiomyoma, abnormal uterine bleeding, pelvic support defects and endometriosis. The other indications are malignancies and endometrial hyperplasia, adenomyosis, cervical dysplasia, infections, postpartum bleeding and abnormal placental site.[2] Abnormal uterine bleeding (AUB) is considered as one of the most common and challenging problem presenting to the gynecologist. Abnormal uterine bleeding is defined as any bleeding that corresponds with the frequency, duration or amount of blood flow of normal menstrual cycle and could be a sign of simple hormonal imbalance or a serious 1 underlying condition necessitating aggressive treatment including a major surgical procedure.[3]

Methodology:

The present study was conducted after approval from institutional ethical committee in the Department of Pathology, Sri Aurobindo Medical College and Post Graduate Institute, Indore, M.P.

The study design was cross sectional observational and included Prospective study from October 2015 to July 2017

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CASE SELECTION:

The following details were studied:

1. All information related to patient was noted i.e. Name, Age, Registration number, complaints, investigations.
2. Size, shape and weight of the uterus.
3. Surface of the uterus.
4. Thickness of the endometrium and myometrium.
5. Length of fallopian tube and cervix.
6. Measurements of ovary.

In prospective study**,** specimens received were fixed in 10% formal saline for 24 hours and processed in the tissue processing machine (Histokinette) .

Paraffin embedded tissue were then blocked in paraffin wax with the help of Plastic moulds. Sections of 3-4 microns were cut on a rotary microtome. Short Ribbons of the sections were floated out in a water bath. Then they were picked up on micro-slides already coated with albumin-glycerine adhesive and kept on hot plate at 60°C temperature for 45 minutes.

Staining: Paraffin sections were stained by hematoxyline and eosin method .

Observations and Results

The study included total of 300 hysterectomy specimens with the clinical diagnosis of Abnormal Uterine Bleeding during the period, October 2015 to July 2017 in the Department of Surgical Pathology of Sri Aurobindo Medical College and P.G Institute, Indore.

The age of patients in the present study ranged from 21 to Above 51 years. The maximum number of cases was seen in the age group of 41-45 years (28%) and minimum number was seen in the age group of 21-25 years (1.7%)

Heavy menstrual bleeding was the most common type of bleeding observed in cases of AUB i.e. 29.3% followed by Inter-menstrual bleeding i.e. 24.0%. Postmenopausal bleeding was the least common type of bleeding observed in AUB i.e. 11.4%.

Bulky uterus was the most common USG finding observed i.e. 29.2% followed by fibroid 28.7%, No any abnormality was detected in 25.7% of cases and dual findings of fibroid and bulky uterus was seen in 7.3% of cases.

Proliferative phase 53.0% was the most common endometrium pattern observed followed by Secretory phase 38.7%, Atrophic changes 4.0%, Simple hyperplasia 2.6%, chronic endometritis 1.0% and least common was endometrial adenocarcinoma 0.7%.

Atrophic changes was most commonly presented with post menopausal bleeding (66.66%).

Adenomyosis was seen in 29.7% of cases. Dual pathology of adenomyosis and leiomyoma was seen in 10.3% cases, adenomyosis with endometrial polyp was seen in 1.3% of cases, adenomyosis with endocervical polyp was seen in 0.7% cases, and 0.3% cases each of atrophic uterus, bicornuate uterus and neurofibroma with adenomyosis was seen.

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Leiomyoma was seen in 25.0% of cases. Leiomyoma with endometrial polyp was seen in 1.3% of cases. Leiomyoma with endocervical polyp was seen in 0.7% cases and 0.3% cases were seen of leiomyoma with atrophic uterus.

Table no.1: Distribution of cases as per final Histopathology diagnosis

Histopathology Finding	No.	Percent (%)
Adenomyosis	89	29.7
Adenomyosis, Atrophic Uterus	1	0.3
Adenomyosis, Bicornuate Uterus	1	0.3
Adenomyosis, Endocervical Polyp	2	0.7
Adenomyosis, Endometrial Polyp	4	1.3
Adenomyosis, Leiomyoma	31	10.3
Adenomyosis, Neurofibroma	1	0.3
Atrophic Uterus	7	2.3
Chronic cervicitis	75	24.9
Endocervical Polyp	1	0.3
Endometrial Polyp	4	1.3
Leiomyoma	74	25
Leiomyoma, Atrophic Uterus	1	0.3
Leiomyoma, Endocervical Polyp	2	0.7
Leiomyoma, Endometrial Polyp	4	1.3
Leiomyosarcoma	1	0.3
Endometrial Adenocarcinoma	2	0.7
Total	**300**	**100.0**

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Table no.2: Distribution of AUB cases as per histopathology diagnosis of adenomyosis along with associated Pathology

Histopathology Finding	No.	Percent (%)
Adenomyosis	89	29.7
Adenomyosis, Atrophic Uterus	1	0.3
Adenomyosis, Bicornuate Uterus	1	0.3
Adenomyosis, Endocervical Polyp	2	0.7
Adenomyosis, Endometrial Polyp	4	1.3
Adenomyosis, Leiomyoma	31	10.3
Adenomyosis, Neurofibroma	1	0.3

Table no.3: Distribution of AUB cases as per histopathology diagnosis of leiomyoma along with associated Pathology

Table no.	Histopathology Finding	No.	Percent (%)
	Leiomyoma	74	25
	Leiomyoma, Atrophic Uterus	1	0.3
	Leiomyoma, Endocervical Polyp	2	0.7
	Leiomyoma, Endometrial Polyp	4	1.3

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Table no.4 : Comparative Percentage of Adenomyosis in Various Studies

Author	Year of Publication	Percentage (%)
Rizvi G et al [24]	2013	46.34
Mehla S et al[25]	2014	46.7
Pathak S et al[26]	2015	12.5
Present study	**2017**	**29.7**

Table no.5 : Comparative Percentage of Leiomyoma in Various Studies

Author	Year	Percentage (%)
Rizvi G et al [24]	2013	41.46
Mehla S et al[25]	2014	39.9
Pathak S et al[26]	2015	7.17
Present study	**2017**	**25**

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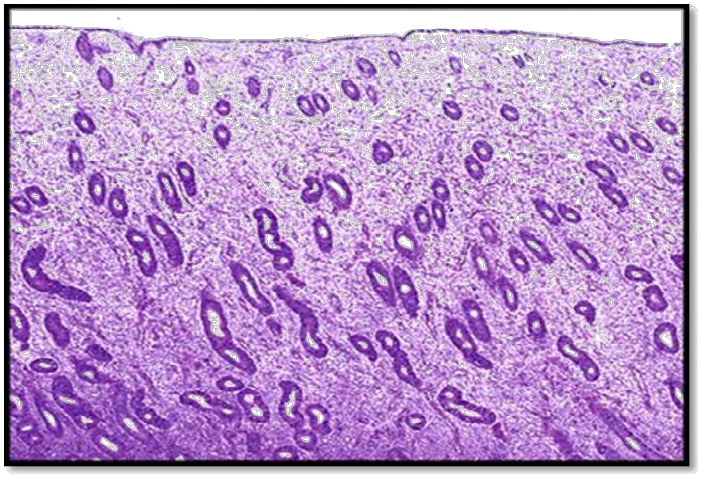

Figure 1 : Proliferative phase endometrium showing s mall, round and tubular glands. Stroma is cellular and compact (H&E 40x).

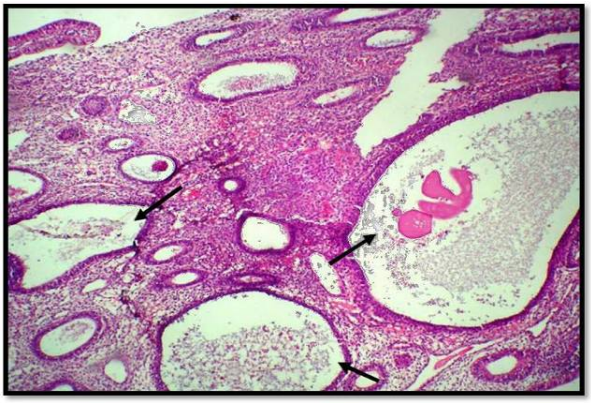

Figure 2: Simple hyperplasia without atypia with large cystically dilated glands (as shown by arrow) ag ainst compact stroma (H&E 100x).

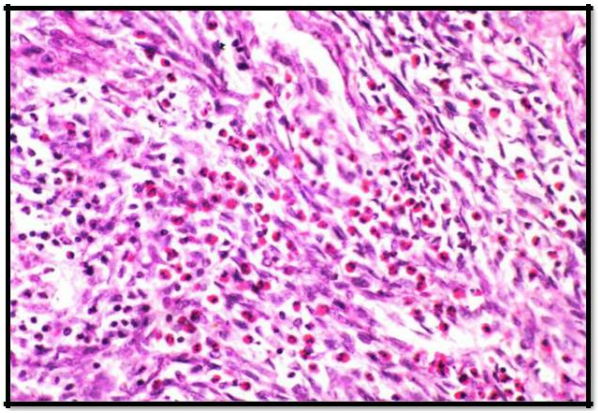

Figure 3 : Eosinophilic endometritis showing infiltration of stroma by eosinophils (H&E400x).

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Discussion

In the present study, the pattern of endometrium observed was: proliferative phase (53%), secretory phase (38.7%), atrophic endometrium (4%), simple hyperplasia (2.6%),chronic endometritis (1%) and adenocarcinoma (0.7%).The present study was in concordance with the above mentioned studies i.e. Sreedhar V *et al* [13] Khan A *et al.*[10], Doddamani U *et al.*[11] and Siddegowda *et al.*[15] except the study of Mishra D *et al.*[36], in which secretory phase (41.5%) was observed predominantly.

So one may conclude that, histopathological pattern of endometrium in women with AUB is quite variable which depends upon age, parity and ethnicity.

The bleeding in proliferative phase may be due to anovulatory cycles and bleeding in secretory phase is due to ovulatory dysfunctional uterine bleeding[20]. It may also be due to the hormones given to the patient before hyeterctomy.

The incidence of endometrial hyperplasia in present study was less as compared to other studies. The possible reason could be that most of the patients here belong to low socioeconomic status and the occurrence of risk factors like obesity, diabetes, increased intake of animal fat and sedentary life style is less. Identification of endometrialhyperplasia is important because they are thought to be precursors of endometrial carcinoma.[20]

Chronic endometritis, characterized by irregular fibrotic stroma and infiltration of lymphoplasmacytic cells has been known to follow pregnancy or abortion and may be the result of IUCD or accompanied by mucopurulent cervicitis and PID.

Atrophic endometrium is the most common cause of bleeding in postmenopausal stage[21]. Thin walled vessels, superficial to the expanding cystic glands, make the vessels vulnerable to injury and lead to excessive uterine bleeding.[22]

The malignant condition observed in this study included two cases of endometrial adenocarcinoma and one case of Leiomyosrcoma. Post menopausal bleeding was the common bleeding presentation observed in both the cases of endometrial adenocarcinoma, whereas heavy prolonged menstrual bleeding was the common bleeding presentation observed in the case of leiomyosarcoma. So the most common presentation in endometrial carcinoma is post-menopausal bleeding. Incidence of endometrial carcinoma was 21.73% in the post menopausal group[23].

In the study of Rizvi G *et al.*, adenomyosis (46.34%) was the commonest pathology followed by leiomyoma (41.46%) where as 12.19% showed dual pathology of adenomyosis and leiomyoma[24].In the study of Mehla S *et al*., total cases were 218 out of which adenomyosis (46.7%) was the most common histopathological finding followed by leiomyoma (39.9%) and dual pathology (13.3%) of adenomyosis and leiomyoma.[25]In the study of Vaidya S *et al*., adenomyosis (39.2%) was the commonest histopathological finding followed by leiomyoma (18.9%), endometrial polyp (10.4%) and endometrial carcinoma (1.3%).[14]

In the study of Pathak S *et al.*, adenomyosis (12.5%) was reported as the most common histopathological finding in AUB followed by leiomyoma (7.17%), dual pathology (8.96%), endometrial polyp (4.48%) and endometrial carcinoma (0.89%).[26]

In the study of Neena Y*et al*., leiomyoma (24.6%) as the most common histopathological finding was noted followed by adenomyosis in 12.15%, endometrial hyperplasia in 9% cases, dual pathology of fibroid and adenomyosis in 4.8% of cases and malignancy in 0.34% of cases.[12]

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In the study of Baral R *et al*., total 266 cases of hysterectomy were studied. In which leiomyoma was the commonest histopathological finding in 46.8% cases, adenomyosis in 10.3% cases and endometrioid adenocarcinoma in 1.14% cases.[16]

Leiomyoma of the uterus are extremely common neoplasms. The overall incidence is between 4% and 11%, but it rises to nearly 40% in women over the age of 50 years and presenting most commonly with AUB (65.2%), which is due the increased size of the uterine cavity thereby increasing the surface area of the endometrium, hyperestrogenaemia causing endometrial hyperplasia, vascular alterations of the endometrium and obstructive effect of fibroid on uterine vasculature leading to endometrial venule ectasia causing proximal congestion in the myometrium and endometrium[24].

According to National Hospital Discharge Survey (NHDS) data "uterine leiomyoma is the most frequent diagnosis associated with hysterectomy in US accounting for about 32% among all women aged 18 and older and this was followed by abnormal uterine bleeding (16.6%), uterine prolapsed (12.2%), endometriosis (11.9%), cancer (7.7%) and pain (7.1%)"[30].

In the present study, correlation of the pre-operative clinical diagnosis with the final histopathological examination of the hysterectomy specimens was done. AUB in premenopausal women mostly results from benign lesions that include adenomyosis and leiomyoma. Total number of cases studied was 300. Pre-malignant lesion was observed in heavy menstrual pattern. Whereas malignancy was seen in post-menopausal bleeding. The most common age group for presentation of AUB is 36 and 45 years. The endometrial pattern noted is proliferative phase (53%). The most common pattern of bleeding observed was Heavy menstrual bleeding (29.3%) and the histopathological finding noted was adenomyosis (29.7%).

CONCLUSION

Abnormal uterine bleeding is the commonest of all gynecological pathology in women of all ages caused by a wide variety of disorders.

AUB in premenopausal women mostly results from benign lesions that include uterine fibroid and dysfunctional uterine bleeding, whereas malignant lesions predominate in the postmenopausal populations, which mandate through investigations and hysterectomy that has been proved helpful in alleviating symptoms not responding to conservative therapy.

In view of the recommendation by FIGO, it is proposed to incorporate the new classification in future. However in the present study we have adopted new terminologies for various bleeding conditions as recommended by FIGO.

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