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Abnormal Uterine Bleeding - A Clinicopathological Study Of 160 Cases

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Abstract

Objective: To study the histopathology of endometrial biopsies in abnormal uterine bleeding and clinicopathological correlation.

Methods: Endometrial biopsies obtained from 160 cases of abnormal uterine bleeding were studied followed by correlation of endometrial histopathology with parity, age and bleeding pattern.

Results: Abnormal uterine bleeding was most frequent in multiparous women in 4thand 5th decades. The commonest bleeding pattern was menorrhagia. Endometrial abnormality was found in 53% cases which included endometrial hyperplasia (27%), mixed pattern endometrium (19%), endometritis (4%), endometrial polyp (2%) and endometrial carcinoma (1%). The frequency of endometrial hyperplasia was highest in multiparous women in 4th decade. The most common bleeding patterns in hyperplasia were menorrhagia (35%) and menometrorrhagia (30%). Forty one percent patients with menometrorrhagia had endometrial hyperplasia. Postmenopausal patients had predominantly proliferative, hyperplastic and mixed patterns of endometrium.

Conclusion: Endometrial biopsy should be recommended during the work up of abnormal uterine bleeding to exclude organic pathology of endometrium.

Key Words: Abnormal uterine bleeding, endometrial biopsy, endometrial hyperplasia

INTRODUCTION

Normal menstruation is defined as the bleeding from secretory endometrium- associated with ovulatory cycle- not exceeding a length of 5 days. Any bleeding not fulfilling these criteria is referred to as abnormal uterine bleeding (AUB). When AUB is not associated with an organic cause it is referred to as dysfunctional uterine bleeding (DUB).[1] The diagnosis of DUB can be made only when histopathological examination of endometrium excludes an organic lesion.[2,3] In this study, we have attempted to analyse different patterns of endometrium in cases of abnormal uterine bleeding and to correlate the histopathology of endometrium with clinical parameters.

METHODS

Consecutive 160 cases of AUB undergoing endometrial biopsy at our hospital, over a period of 5 years were studied. The cases with inadequate yield of biopsy and those showing products of conception on histopathology were excluded from the study. Detailed clinical history, physical examination findings including pelvic examination and investigations were recorded. The pattern of bleeding was classified as menorrhagia, metrorrhagia, polymenorrhoea, polymenorrhagia, menometrorrhagia, and postmenopausal bleeding. The cases were classified according to parity as nullipara, primipara and multipara (having two or more children).

The biopsy material was fixed in 10% formalin and the sections were stained with hematoxylin and eosin. Histopathological examination of the endometrial biopsies was done and followed by correlation of endometrial histology with parity, age and bleeding pattern.

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RESULTS

The youngest patient in the series was 17 year old, while the oldest one was 70 year old. The highest incidence of abnormal uterine bleeding was found in fifth decade (46%) followed by fourth decade (38%). Ninety five percent of the patients were multiparous. The most common pattern of bleeding was menorrhagia (31%) followed by metrorrhagia (23%), menometrorrhagia (20%) polymenorrhagia (12%), postmenopausal bleeding (11%). and polymenorrhoea (3%).

The patterns of endometrium as revealed by histopathological examination of endometrial biopsies are shown in table 1. Normal functional endometrium was found in 46 % cases. Of the abnormal patterns, endometrial hyperplasia was the most common diagnosis (27%). Endometrial hyperplasia was classified according to WHO 1994 classification. Out of the 43 cases of endometrial hyperplasia, 40 cases had simple hyperplasia without atypia (Figure 1) and three cases had complex hyperplasia without atypia. Atypical hyperplasia was not found in our study.

Mixed pattern endometrium was diagnosed in the presence of coexistent proliferative and secretory patterns or a discrepancy between the maturation of glands and stroma2, 4. Out of the six cases of endometritis, four cases had chronic nonspecific endometritis (Figure 2) and two cases had acute endometritis. Endometrial adenocarcinoma was diagnosed in two cases. Both of these were well differentiated endometrioid type of adenocarcinomas (Figure 3). One of them showed villoglandular pattern.

The histological patterns of endometrium were correlated with parity, age and bleeding pattern. Correlation of endometrial histology with parity revealed that in all the patterns, multiparous women far more outnumbered nullipara and primipara. Correlation of endometrial pattern with age is shown in table 2. Endometrial hyperplasia cases were clustered in 4th and 5th decade with maximum number in 4th decade. Eleven patients (30%) were below 35 years while 32 patients (70%) were above 35 years age. All other abnormal patterns including carcinoma

were commonly found in 5th decade.

Correlation of endometrial histology with bleeding pattern is shown in table 3. The most common bleeding pattern in hyperplasia was menorrhagia (35%) followed by menometrorrhagia (30%). A significant proportion of cases with menometrorrhagia (13 out of 32 i.e. 41%) were found to have endometrial hyperplasia. Biopsies from patients with postmenopausal bleeding showed predominantly proliferative and hyperplastic patterns followed by mixed pattern of endometrium.

The two patients with endometrial carcinoma presented with metrorrhagia and postmenopausal bleeding respectively. Both of them were in 5th decade and had not received any exogenous hormone therapy.

DISCUSSION

Abnormal uterine bleeding is a disease of childbearing and perimenopausal age group. The number decreases towards both ends of life. In the present study, 83% patients were in the age group 30 to 50 years. Zawar et al,[5] reported 86 % cases in the same age group. The high incidence of AUB in multiparous women as in our study (95%) has also been reported by Pilli et al6 (87%). In our study, the most common clinical presentation was menorrhagia (31%) followed by metrorrhagia (23%) similar to Pilli et al6 who found menorrhagia in 34% cases and metrorrhagia in 23% cases.

The histopathological findings of endometrium in our study are compared with those of other studies in table 4. Comparison of histopathological findings of endometrium in various studies reveals that about half of the patients with AUB had normal proliferative or secretory endometrium. Endometrial hyperplasia was the most common abnormality observed in all the studies. The distribution of the types of hyperplasia in our study is compared with other studies in table 5. Simple hyperplasia without atypia was the most common type in all the studies.

Of the 18 patients with postmenopausal bleeding in our study, 6 (33%) patients had endometrial hyperplasia. Samal et al[8] who studied 28 cases of postmenopausal bleeding reported it in 11 (39.3%) of such patients.

Endometritis, endometrial polyp and atrophic endometrium were less frequently observed in all the studies. Endometritis is seldom the direct cause of AUB, but is often a contributing factor. Inflammatory cells release proteolytic enzymes that damage the subepithelial capillary plexus and surface epithelium rendering them fragile and prone to breaks and microerosions.[9] Abnormal bleeding from an atrophic endometrium has been explained by the underlying vascular degenerative changes.[1]

Endometrial adenocarcinoma was detected in 2 (1%) cases in the present study. The number of malignancy cases was low in all the studies.

Miscellaneous pattern found in our study was mixed pattern endometrium (19%). The mixed pattern endometrium can be seen due to exogenous hormone intake or functional disorders of endometrium associated with hormonal imbalance such as luteal phase insufficiency and irregular shedding.[2,4] Irregular ripening is the term sometimes used for the type of luteal phase insufficiency with normal preceding estrogen levels and characterized by glands showing variation in maturation. In this condition, glands exhibiting weak secretion and normal secretion coexist with inactive glands and even glands with proliferative activity. When luteal phase insufficiency is associated with oestrogen predominance, the endometrium shows a discrepancy between the maturation of glands and stroma. The stromal maturation is in advance of the glandular maturation. Irregular shedding is characterized by mixture of star shaped secretory glands with early proliferative glands[3,4].

The miscellaneous patterns reported by Patil et al [7] included irregular ripening (16% cases), secretory hyperplasia (one case) and Arias Stella reaction (one case).Zawar et al[5] reported irregular ripening in 2% cases and irregular shedding in 3% cases. Pilli et al6 reported irregular shedding (2%), pill endometrium (2%), Arias Stella reaction (2%) and products of conception (2%).

CONCLUSION

In conclusion, endometrial biopsy is important in the evaluation of patients with abnormal uterine bleeding to find out any organic pathology of endometrium. Histopathological findings of endometrium are crucial for appropriate therapy. Therefore endometrial biopsy should be recommended before the diagnosis of dysfunctional uterine bleeding.

REFERENCES

1. Uterus-corpus. In: Rosai J editor. Rosai Ackerman's Surgical Pathology, 9th edition. Missouri, USA:Mosby,

Table 1 showing histopathological patterns of endometrium

Histopathological diagnosis	Number of cases	Percentage
Proliferative endometrium	52	32
Secretoryendometrium	23	14
Endometrialhyperplasia	43	27
Mixedpatternendometrium	30	19
Endometritis	6	4
Endometrialpolyp	3	2
Endometrialcarcinoma	2	1
Atrophicendometrium	1	1
Total	**160**	**100**

Table 2 showing correlation of endometrial histopathology with age

Endometrial Histopathology	Age range in years						Total
	<20	21-30	31-40	41-50	51-60	61-70	
Proliferative	0	8	17	25	2	0	52
Secretory	0	3	11	8	1	0	23
Hyperplasia	1	3	21	13	4	1	43
Mixed pattern	0	2	8	19	1	0	30
Endometritis	0	0	3	3	0	0	6
Polyp	0	1	0	2	0	0	3
Carcinoma	0	0	0	2	0	0	2
Atrophic	0	0	0	1	0	0	1
Total	1	17	60	73	8	1	**160**

Table 3 Correlation of endometrial histopathology with bleeding pattern

Endometrium	Pattern of bleeding						Total
	Meno	Poly	Polymeno	Metro	Menometro	Postmeno	
Proliferative	17	1	6	16	6	6	52
Secretory	11	1	4	3	4	0	23
Hyperplasia	15	1	6	2	13	6	43
Mixed Pattern	5	0	3	10	8	4	30
Endometritis	1	0	0	3	1	1	6
Polyp	1	0	0	2	0	0	3
Carcinoma	0	0	0	1	0	1	2
Atrophic	0	1	0	0	0	0	1
Total	50	4	19	37	32	18	**160**

Meno- menorrhagia **Poly- polymenorrhoea**

Polymeno- polymenorrhagia **Metro- metrorrhagia**

Postmeno- postmenopausal bleeding **Menometro- menometrorrhagia**

Table 4 Comparison of endometrial histopathological findings in different series

Histopathology of Endometrium (%)	Authors			
	Patil et al[7] 190 cases	Pilli et al[6] 100 cases	Zawar et al[5] 175 cases	Present study 160 cases
Proliferative	22	34	43	32
Secretory	19	13	12	14
Endometrial hyperplasia	40	44	37	27
Endometritis	-	0	0	4
Endometrial polyp	-	1	0	2
Malignancy	1	0	0	1
Atrophic endometrium	-	0	2	1
Miscellaneous	18	8	5	19
Total (%)	100	100	100	100

Table 5 showing distribution of types of hyperplasia in different series

Type of hyperplasia	Authors		
	Pilliet al[6]	Zawar et al[5]	Present study
Simple hyperplasia without atypia	73 (%)	85(%)	93 (%)
Complex hyperplasia without atypia	27(%)	12(%)	7 (%)
Atypical hyperplasia	0 (%)	3 (%)	0 (%)
Total (%)	100	100	100

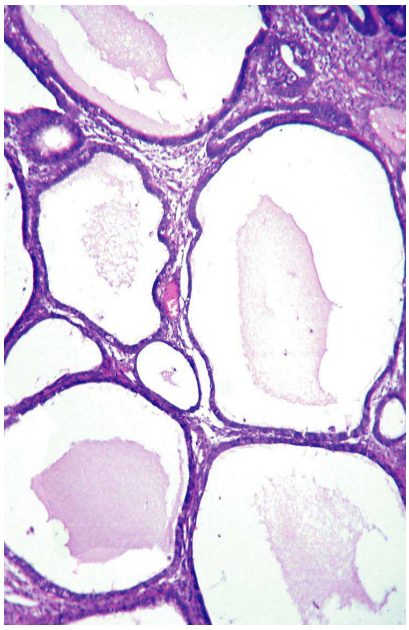

Figure 1: Simple hyperplasia without atypia (H&E X 100)

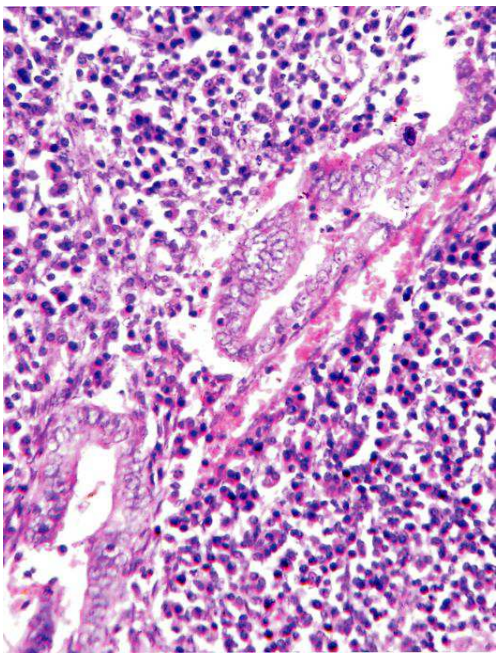

Figure 2: Chronic nonspecific endometritis (H&E X 400)

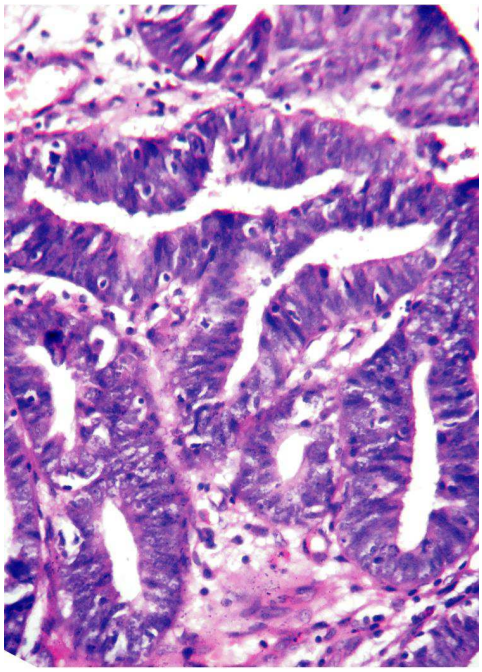

Figure 3: Endometrial adenocarcinoma (H&E X 400)

Elsevier;2004. p. 1579-80.

2. Crum CP, Hornstein MD, Stewart EA. Evaluation of cyclic endometrium and benign endometrial disorders. In: Crum CP, Lee KR editors. Diagnostic Gynecologic and Obstetric Pathology. Philadelphia, USA: Elsevier Saunders;2006. p. 457, 477-8.
3. Sherman ME, Mazur MT, Kurman RJ. Benign diseases of the endometrium. In: Kurman RJ editor. Blaustein's pathology of the female genital tract, 5th edition. New Delhi, India: Springer; 2004. p. 432, 438.
4. Buckley CH. Normal endometrium and non-proliferative conditions of the endometrium, In: Fox H, Wells M editors. Haines and Taylor Obstetrical and Gynaecological Pathology, 5th edition. Edinburgh: Churchill livingstone, Elsevier science; 2003. p. 405-8.
5. Zawar MP, Bolde S, Rathi, et al. Histopathological study of endometrium in dysfunctional uterine bleeding. Solapur Medical Journal. 2005; 1(4).
6. Pilli GS, Sethi B, Dhaded AV, et al. Dysfunctional uterine bleeding (Study of 100 cases). J Obstet Gynecol India. 2002;52(3):87-9.
7. Patil R, Patil RK, Andola SK, et al. Histopathological spectrum of endometrium in dysfunctional uterine bleeding. Int J Biol Med Res. 2013;4(1):2798-2801.
8. Samal S, Gupta U, Agrawal P, et al. Clinicopathological study of dysfunctional uterine bleeding in postmenopausal women. J Obstet Gynecol India. 2000; 50(6):100-1.
9. Casablanca Y. Management of dysfunctional uterine bleeding. Obstet Gynecol Clin N Am. 2008;3