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Research Paper

Study of Endometrial Pathology in Abnormal Uterine Bleeding

Medical Science

KEYWORDS : Abnormal uterine bleeding ; Proliferative endometrium; Endometrial hyperplasia; Endometrial adenocarcinoma.

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ABSTRACT

Introduction: Abnormal uterine bleeding is the commonest presenting symptom and major gynecological problem responsible for as many as one-third of all out patient gynecologic visit.1,2 The endometrial sampling is chosen to evaluate abnormal uterine bleeding.An understanding of the varieties in the normal morphological appearance of the endometrium provides an essential background for the evaluation of endometrial pathology.3Aims: 1. To evaluate histopathology of endometrium for identifying the causes of abnormal uterine bleeding.2. To observe the incidence of various pathology in different age groups. Material and methods: The endometrial samples of 200 cases (endometrial curettage/ biopsy and hysterectomy specimens) sent to pathology laboratory were analyzed. Results: Maximum cases of abnormal uterine bleeding were seen between 31-40 years of age. Most of the cases presented with menorrhagia. Histologically most common was the proliferative phase and endometrial adenocarcinoma & endometrial stromal sarcoma were rare. Conclusion: Analysis of histopathology of endometrium in abnormal uterine bleeding helps in management of patients and to know the pathological incidence of structural causes in AUB prior to surgery

Introduction

The endometrium which lines the uterine cavity is one of the most dynamic tissues in the human body; an interesting tissue for histopathologic study. It is characterized by cyclic processes of cell proliferation, differentiation and death in response to sex steroids elaborated in the ovary.3 The term "menstruation" is derived from the Latin word "menstruus" meaning "monthly".4 Sir John Williams stated that menstruation is a cyclical process, which begins at cessation of menstrual flow, passes through the developmental changes of mucus membrane of the uterus and ends with the cessation of the next following menstruation". [5]

Abnormal uterine bleeding is defined as any bleeding pattern that differs in the frequency, duration and amount from a pattern observed during of a normal menstural cycle or menopause. It is a common problem having a long list of causes in different age groups.[6]

The endometrial sampling is chosen to evaluate abnormal uterine bleeding because it has several advantages over other diagnostic methods. The hormonal assay is very expensive and laboratories with hormonal assay are not available in rural areas. Accurate diagnosis of the causative factor of abnormal uterine bleeding in any age group is of importance so that appropriate management can be initiated. Therefore histological characteristics of endometrial samples as assessed by light microscopy remains the gold standard for clinical diagnosis of endometrial pathology.

Materials and methods

Source of data

The present study was conducted in the Department of Pathology, MVJ Medical College and Research Institute, Hoskote over a period 2 years from 2011 to 2013 .

Detailed clinical history was collected from the patients along with relevant investigations

Inclusion criteria

Reproductive women in all age groups attending department of OBG with abnormal uterine bleeding.

Exclusion criteria

Women with pregnancy complications, acute pelvic inflammatory disease, abnormal cervical pap smear, previous abnormal endometrial biopsy, leiomyoma, hemostatic disorders and women on hormonal treatment for abnormal uterine bleeding were excluded.

Methods of collection of data

The endometrial samples (endometrial curettage/ biopsy and hysterectomy specimens) sent to pathology laboratory were analyzed.

These specimens are fixed in 10% formalin and gross morphology were recorded.

Endometrial samples were totally embedded and representative bits are taken from hysterectomy specimens. These bits were placed in cassettes and kept in fixative and processed in the automatic tissue processor.

Paraffin tissue blocks were prepared and 3-4 micrometer thick sections were cut and stained with routine haematoxylin and eosin. A detailed histological study was carried out and the findings were noted.

Results

In our study, The maximum incidence of AUB was in the 36-40 years of age group. The minimum incidence of AUB was in 17-20 years of age group. Out of 200 cases Proliferative phase (FIG-1) was the most common histopathological finding and the least commonly seen were endometrial adenocarcinoma & endometrial stromal sarcoma. There were 121 patients belonging to the reproductive age group (21-40 years). Proliferative endometrium was the dominant histopathological finding in this age group followed by secretory phase (FIG-2), simple hyperplasia without atypia(FIG-3), mixed endometrium , endometrial polyp (FIG-4), complex hyperplasia with atypia (FIG-5) , & endometrial stromal sarcoma (FIG-6). There were 55 patients belonging to the perimenopausal age group. Simple hyperplasia without atypia was the dominant histopathological finding in this age group followed by proliferative phase, secretory phase of disordered proliferative, atrophic endometrium, endometrial polyp, each of mixed endometrium & endometrial adenocarcinoma (FIG-7). There were 20 patients belonging to the postmenopausal age group. Simple hyperplasia without atypia was the dominant histopathological finding in this age.

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Figure 1: Proliferative phase with round to tubular glands lined by pseudostratified epithelium surrounded by cellular stroma

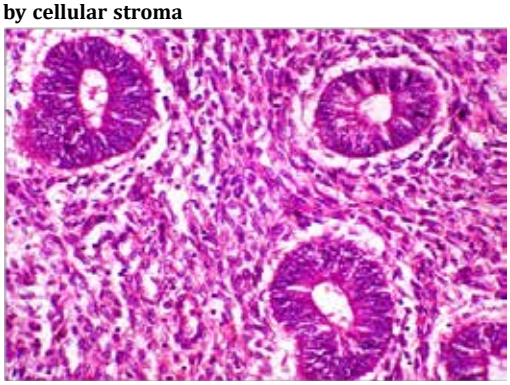


Figure 2: Secretory phase with tortuous glands showing subnuclear vacuolation and oedematous stroma

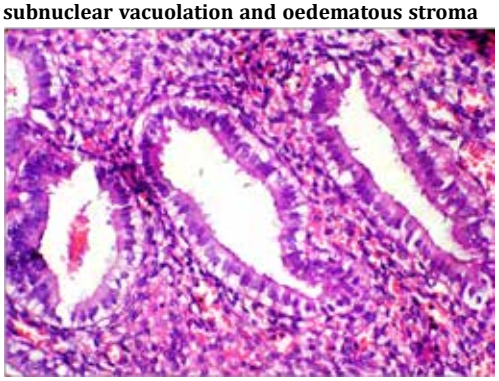


Figure 3: Simple hyperplasia without atypia with large cystically dilated glands against compact stroma

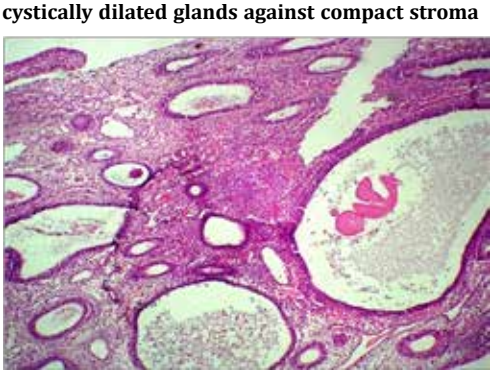


Figure 4: Endometrial polyp showing glands of varying sizes with blood vessels of varying sizes in the fibrovascular core

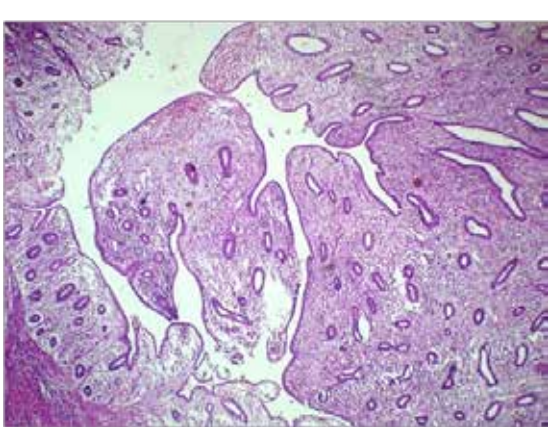


Figure 5 : Complex hyperplasia with atypia with overcrowding of glands, complex glandular architecture with nuclear atypia

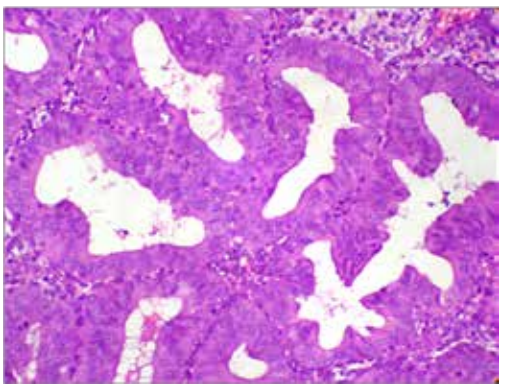


Figure 6 : Endometrial Stromal Sarcoma showing minimal atypia with tongue like protrusions of the stromal tumor into the myometrium

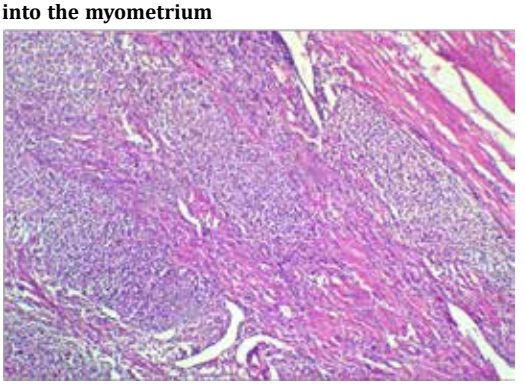
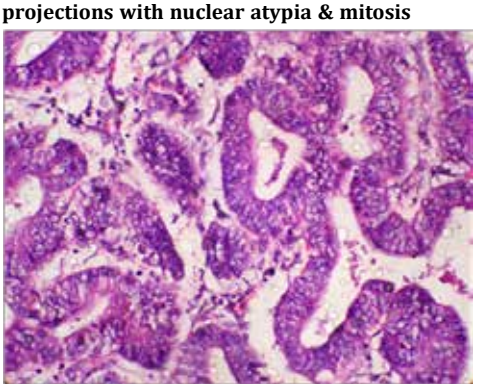


Figure 7 : Endometrial adenocarcinoma showing overcrowding of glands, intraglandular bridging, papillary projections with nuclear atypia & mitosis



Discussion

Abnormal uterine bleeding continues to be one of the most common and perplexing problems in Gynaecological practice. It may present at any age between puberty and menopause. It may be associated with various kinds of histopathological findings in the endometrium.

Table 1: Comparative study of age incidence

Authors	No	<20		21-30		31-40		41-50		51 and above	
		Total	%	Total	%	Total	%	Total	%	Total	%
Sutherland[7] (1950)	1000	36	3.6	242	24.2	343	34.3	362	36.2	17	1.7

Anusuya Das [8] (1964)	117	17	14.5	24	20.5	33	28.2	38	32.5	5	4.3
Wagh and Swamy[9] (1964)	552	97	17.6	215	39	143	25.9	94	17	3	0.5
Mehrotra [10] (1972)	150	15	10	72	48	35	23.3	25	16.7	3	2
Muzaffar[11] (2005)	260	0	0	33	12.7	102	39.2	125	48.1	-	-
Saraswathi [12] (2011)	409	6	1.5	85	20.8	116	28.4	137	33.5	65	15.8
Present Study(2013)	200	4	2	45	22.5	76	38	63	31.5	12	6

The highest incidence of AUB was noted in the 31-40 years age group in the present study which is in concordance with the results of the study by Anusuya Das 8 (1964) whereas Sutherland 7 (1950), Muhammed Muzaffar 11 (2005), Doraiswami Saraswathi 12 (2011) reported maximum incidence in 41-50 years age group and Mehrotra et al 10 (1972), Wagh and Swamy9 (1964) reported maximum incidence in 21-30 years age group.

Considering these discrepant observations, one may conclude that, any age after menarche is not exempt from AUB .The highest incidence of AUB was seen in the reproductive age group(21-40 years) in the present study (60.5%) which is in concordance with the results of the studies by Sutherland 7 (58.5%) and Mehrotra VG et al 10 (71.3%) .

Table 2: Analysis of histopathological findings

Histological findings	Sadia Khan[11]		Present study	
	Number	Percentage	Number	Percentage
Proliferative Phase	233	46.6	70	35%
Secretory Phase	192	38.4	53	26.5%
Simple hyperplasia without atypia	32	6.4	48	24%
Simple hyperplasia with atypia	12	2.4	0	0
Complex hyperplasia without atypia	14	2.8	0	0
Complex hyperplasia with atypia	0	0	03	1.5%
Endometrial polyp	3	0.6	04	2%
Disordered Proliferative Endometrium	0	0	06	3%
Mixed endometrium	0	0	06	3%
Endometritis	2	0.4	0	0
Atrophic endometrium	5	1	07	3.5%
Endometrial Adenocarcinoma	2	0.4	02	1%
Endometrial stromal sarcoma	0	0	01	0.5%
Total	500	100	200	100

In the present study proliferative phase(35%) was found to be most common histologic pattern followed by secretory phase (26.5%), simple hyperplasia without atypia (24%), atrophic endometrium (3.5%), disordered proliferative (3%), mixed endometrium (3%), endometrial polyp(2%), endometrial adenocarcinoma (1%) and endometrial stromal sarcoma (0.5%). In the study done by Sadia Khan 11 , proliferative phase was most common histological pattern followed by secretory phase, simple hyperplasia without atypia, complex hyperplasia without atypia, atrophic endometrium, endometrial polyp, endometritis and endometrial adenocarcinoma in that order.

Conclusion:

Endometrium is the mirror of hormonal status in women. Histological variations can be seen in the endometrium according to age of women and phase of her menstrual cycle and any other specific pathology. Histopathological examination of endometrial biopsies in patients of abnormal uterine bleeding shows a wide spectrum of changes ranging from normal endometrium in various hormonal cycles to malignancy. The most frequent finding seen in patients with AUB in there productive age group was proliferative phase. In peri and postmenopausal women simple hyperplasia without atypia was most frequently noted. Cases of endometrial polyp, endometrial adenocarcinomas and endometrial stromal sarcoma were seen rarely in clinically diagnosed cases of AUB.

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