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Study of Endometrial Pathology in Abnormal Uterine Bleeding - A Retrospective Study

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Abstract: ***Introduction: Abnormal uterine bleeding (AUB) is the commonest presenting symptom and major gynaecological problem responsible for as many as one-third of all out patient gynaecologic visits. Aims & Objectives: The aim of study is to evaluate AUB in different age groups and carry out histomorphological study of the endometrium. Material and Methods: The study was conducted on 303 patients in the department of pathology, SGT Medical and Hospital, Gurugram. Patients with isolated endometrial causes of abnormal uterine bleeding were included. Endometrial samples were obtained from dilatation and curettage or endometrial biopsy. Specimens were received in 10% formalin. These were studied grossly and were processed in automated tissue processor. Sections were stained with H&E. Results: The most common age group presenting with AUB was 31-40 years (36.96%). The commonest pattern in these patients was secretory endometrium 118 cases (38.94%) and proliferative endometrium 87 cases (28.71%). The commonest pathology was endometrial hyperplasia 38 cases (12.54%). Hormonal changes were seen in 3.30% cases and endometrial carcinoma in 0.99%. Conclusion: Histological examination of the endometrium showed a widespectrum of pathological changes ranging from normal endometrium to malignancy thus emphasizing the importance of endometrial sampling as a diagnostic tool in the management of AUB.***

Keywords: endometrium

1. Introduction

Abnormal uterine bleeding is the commonest presenting symptom and major gynaecological problem responsible for as many as one- third of all out patient gynaecologic visit.[1, 2] It refers to a symptom of excessive, scanty, prolonged, cyclic, unexpected or acyclic bleeding regardless of diagnosis or cause.[3] The causes of abnormal uterine bleeding have been categorized by the International Federation of Gynecology and Obstetrics (FIGO) into a new classification system (PALM-COEIN) which includes nine categories. First Four entities have visually Objective structural etiologies (PALM: Poly, Adenomyosis, Leiomyoma, and Malignancy and hyperplasia). The second four are unrelated to structural abnormalities (COEI: Coagulopathy, Ovulatory Dysfunction, Endometrial and Iatrogenic), and the final category is for entities that are Not yet classified (N).[4]

Diagnosis of AUB is given to the group of patients in whom there is no definitive underlying lesion. It can occur at any time between menarche and menopause, in ovulatory and anovulatory cycles. It has been known to be associated with almost any type of endometrium and ranging from normal endometrium to hyperplasia, irregular repining, chronic menstrual shedding and atrophy [5, 6]. The incidence of abnormal endometrium findings does not necessarily indicates the true incidence of abnormal endometrial bleeding because it greatly depends upon the time when endometrial biopsy as performed in relation to cycle and bleeding.

Endometrial sampling could be effectively used as a diagnostic step in AUB, although at times, its interpretation could be quite challenging to the practicing obstetrician.[7]

The aim of study was to evaluate AUB in various age groups and carry out histopathological study of the endometrium.

2. Materials and Methods

The present study was conducted in SGT Medical college and hospital, SGT University, between Nov 2016 to Nov 2017 by collaboration of Department of Pathology and Obstetric and Gynecology. A total of 303 cases of abnormal uterine bleeding were included in this study. Patients with isolated endometrial causes of abnormal uterine were included for study and those with cervical, vaginal pathology and hemostatic disorders were excluded from the study.

Tissue of endometrial biopsy was fixed in both formal saline and alcoholic formaldehyde. After fixation tissue was grossly examined for any abnormalities. Tissue was processed, paraffin blocks were made and Sections of 5-6 micron thickness were obtained. The sections were stained with Hematoxylin and Eosin. The stained sections were studied for morphology of endometrium. Special stains like ZN stain were done as per the case requirement. The data was collected in excel sheet and analysed.

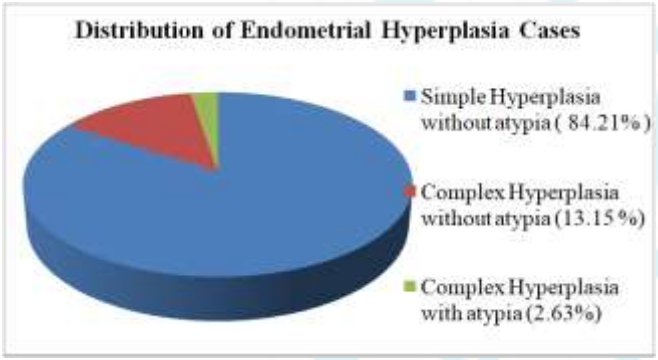
3. Results

A total of 303 patients were enrolled in this study. The cases studied were categorized into 10 groups depending upon the histomorphological diagnosis. (Table 1). Amongst these, Secretory Phase [FIG-1] comprised the maximum number of cases i.e. 118 (38.94 %), followed by 87cases (28.71)% of proliferative phase. Hyperplasia was seen in 38 cases out of which 32 cases showed Simple hyperplasia without atypia. [FIG-2]. Total 23 cases

(7.59%) revealed Atrophic endometrium. Hormonal changes were observed in 10 cases (3.30%) whereas Disordered endometrium[FIG-3] was observed in 4 (1.32%) cases. Endometrial carcinoma [FIG-4] was encountered in 3 (0.99%) and similar number of cases were encountered for Endometritis and Endometrial polyp. Last, in 14 cases (4.62%), the sample was scanty and inadequate for opinion.

Table 1: Distribution of cases

Diseases	Cases	%
Proliferative phase	87	28.71
Secretory phase	118	38.94
Hyperplasia	38	12.54
Inadequate	14	4.6
Disordered proliferation	4	1.32
Hormonal change	10	3.30
Endometritis	3	0.99
Endometrial carcinoma	3	0.99
Endometrial polyp	3	0.99
Atrophy	23	7.59
Total	303	100



An age specific comparative analysis of the clinical presentation revealed that maximum number of patients were in the age group of 31-40 years (36.96%), followed by age group of 41-50 years (35.31%) (Table 3).

Table 2: Distribution of case according to age

	Age in years						
Diseases	20-30	31-40	41-50	51-60	61-70	71-80	81-90
Prolifertive phase	18	31	38				
Secretory phase	28	55	32	3			
Hyperplasia	5	10	17	6			
Inadequate	3	4	5	1	1		
Disordered proliferation		2	2				
Hormonal change	1	6	3				
Endometritis		1	1	1			
Endometrial carcinoma			1	2			
Endometrial polyp		1	2				
Atrophy		2	6	8	7		
Pregnancy changes							
Total	55	112	107	21	8		

4. Discussion

Endometrial biopsy has been a continous source of frustration for the pathologist because of minimal clinical information and biopsy taken at an inappropriate moment of menstrual cycle. The endometrium undergoes regular cyclical changes under recurrent hormonal changes of the ovulatory cycles.

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 et al* whereas *Alpana et al, More et al, Saraswath et al and Muzaffar et al* reported maximum incidence in 41-50 years age group and *Wagh and Swamy et al* reported maximum incidence in 21-30 years age group. (Table 4)

Table 4: Age and Incidence comparison our figures with other studies.

Authors	No.	< 20		21 – 30		31 - 40		41 - 50		51 and above	
		Total	%	Total	%	Total	%	Total	%	Total	%
Wagh and Swamy (1964)	552	97	17.6	215	39	143	25.9	94	17	3	0.5
Muzaffar (2005)	260	0	0	33	12.7	102	39.2	125	48.1	-	-

Saraswathi (2011)	409	6	1.5	85	20.8	116	28.4	137	33.5	65	15.8
More (2016)	202	0	0	36	17.82	72	35.64	81	40.09	8	3.96
Alpana (2016)	300	0	0	16	5.33	109	36.33	146	48.66	29	9.66
Present Study (2017)	303	0	0	55	18.15	112	36.96	107	35.31	29	9.57

Predominant number of cases in this study showed normal physiologic phases such as proliferative, secretary and atrophic menstrual pattern. The bleeding in the proliferative phase may be due to anovulatory cycles and bleeding in the secretory phase is due to ovulatory dysfunctional uterine bleeding.

The exact cause from the atrophic endometrium is not known. The incidence is higher when compared with results shown by *Sadia khan et al* and *Singh A et al*. It is postulated to be due to anatomic vascular variations or local abnormal hemostatic mechanisms. Thin walled veins, superficial to the expanding cystic glands make the vessel vulnerable to injury.

The incidence of endometrial hyperplasias in this study was less as compared to others. The possible explanation could be that most of patients having lower socicoeconomic status orany risk factors. Identification of endometrial hyperplasia is important because they are thought to be precursors of endometrial carcinoma.

Hormonal change on endometrium was seen in 10 cases (3.30) in our study whereas *Khare et a*l showed almost similar effects of hormone whereas *Abid et al* showed a higher incidence of 27%.

Four cases (1.32%) showed disordered proliferative pattern in our study, which is in accordance with *Shilpa et al*. The term "disordered proliferative endometrium" is difficult to understand. It denotes an endometrium that is hyperplastic but without an increase in endometrial volume.{}It refers to proliferative endometrium not matching to the time of menstrual cycle but is not abnormal enough to be labelled hyperplastic. Disordered proliferative pattern resembles a simple hyperplasia, but the process is focal rather than diffuse.

Endometritis usually follow pregnancy, IUCD insertion and abortion. It may be due to viral, chlamydial, gonococcal, tuberculosis and nonspecific infection. Three cases were seen in our study. No specific infection like tuberculosis was noted in any case.

The incidence of endometrial polyp was 3(0.99%) in our study, all were hyperplastic polyps characterized by simple hyperplasia without atypia. *Sarika et al* found endometrial polyp in 1.48% and *Doraiswami S et al* in 11.2%. Polyps are difficult to be recognized on curettage specimen. They can be identified as polypoidal fragments line by epithelium on three sides, fibrous stroma and thick walled blood vessels. And three endometrial carcinoma cases were found in this study

5. Conclusion

Histological examination of the endometrium showed a widespectrum of pathological changes ranging from normal endometrium to malignancy thus emphasizing the importance of endometrial sampling as an diagnostic tool in the management of abnormal uterine bleeding. Endometrial evaluation in different age groups helps in the management, espically in perimenopausal and postmenopausal age groups. Accurate analysis of endometrial samplings is the key to effective therapy and optimal outcome.

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