ORIGINAL RESEARCH PAPER

Pathology

HISTOPATHOLOGICAL SPECTRUM OF ENDOMETRIAL BIOPSY ASSOCIATED WITH ABNORMAL UTERINE BLEEDING.(AUB)

KEY WORDS: Endometrial biopsy, endometrial carcinoma, endometrial hyperplasia, retained product of conception.

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ABSTRACT

Background: Abnormal uterine bleeding(AUB) interferes with the quality of life of an otherwise healthy woman. Until the pathology underlying menorrhagia is, accurately diagnosed, proper therapy is hardly possible. The objective of the study was to analyze different histopathological patterns of endometrium in AUB and observe the incidence of various pathologies in different age groups.

Method: A total number of 200 cases of endometrial biopsies received from the obstetrics and gynecology department from AUG 2019 to AUG 2021 are studied. An eight biopsies were inadequate, so total 192 biopsies were considered for study.

Results: Out of total 192 biopsies, the most common endometrial histopathologic pattern observed was secretory phase endometrium(43.24%) and proliferative phase endometrium(16.66%). Disordered proliferative pattern was seen in significant number of cases(14.6%) while simple endometrial hyperplasia was seen in perimenopausal age group.

Conclusion: Endometrium is mirror of the female sexual hormonal status. So endometrial biopsy is the first choice of investigation in AUB, which is cost effective and gold standard.

INTRODUCTION

Endometrial biopsies are done for a number of reasons that include abnormal uterine bleeding, incomplete abortions, or suspected neoplasia and the endometrium may be sampled prior to certain procedures to treat infertility to determine the phase of the cycle to guide further tests or treatments1. The majority of females with endometrial diseases present with abnormal uterine bleeding(AUB). Endometrial diseases are associated with all age group women and are a leading cause of increased maternal morbidity and mortality2. Virtually every woman will at some point in her lifetime experiences episodes of bleeding that are perceived as abnormal. It is responsible for as many as one-third of all outpatient gynecologic visits.3 AUB is defined as any types of bleeding that does not fall within the normal ranges for amount, frequency, duration and cyclicity4. AUB is associated with wide variety of conditions including both organic and non-organic conditions. The organic pathologic conditions include, chronic endometritis, endometrial polyp, submucosal leiomyomas, or endometrial neoplasms, etc. and nonorganic conditions include functional disturbances in endometrium. AUB due to functional disturbances is referred to as dysfunctional uterine bleeding (DUB)3. The most common presenting symptoms are menorrhagia, polymenorrhea, metrorrhagia, and intermenstrual bleeding. Pregnancy-related and dysfunctional uterine bleeding are more common in patients with younger age group, whereas atrophy and organic lesions become more frequent in older individuals. Hyperplasia and endometrial carcinoma are more associated with peri-postmenopausal patients undergoing biopsy2. Endometrial curettings and biopsies exhibit a wide range of histopathological patterns due to normal and abnormal cyclical changes, drugs, hormones, infections and malignancies, thus posing a challenge to practicing pathologists. It is considered the gold standard for diagnosis of the etiology of AUB, because of the relative ease and safety of obtaining samples, along with reasonable reporting time and diagnostic accuracy1. So In these study different morphology in reproductive, premenopausal and postmenopausal women is studied.

MATERIALS AND METHODS

The study is conducted in the Department of Pathology in a tertiary care center, Gujarat Adani Institute Of Medical sciences, G.K. General Hospital. A total number of 200 cases of endometrial biopsies received from the obstetrics and gynecology department from Aug 2019 to Aug 2021 are subjected to histopathological evaluation, followed by clinical correlation. The endometrial samples received were fixed in 10% formalin. The fixed tissue is subjected to processing, paraffin blocks were made and sectioned under microtomy(4 to 5 microns thickness), stained with Hematoxylin and Eosin stain and evaluated under light microscope.

A. Criteria for exclusion: Patients with systemic disease like haemostatic disorders etc.

B. Criteria for adequacy of specimen: In specimens where no endometrial tissue was seen or no conclusion could be arrived at, in spite of the presence of some tissue, a diagnosis of inadequate for evaluation was given.

RESULTS

Histopathological examination of the 200 cases showed various patterns. In microscopic examination an eight biopsies were inadequate, so total 192 biopsies were consider for study. A maximum number of biopsies total 105(59.90%) were received from reproductive age group with normal cyclical pattern. Disordered proliferative endometrium and hyperplasia were the next common histological patterns which were seen in 49(21.3%) and 28(12.2%) cases, respectively. Both these patterns were commonly seen in the perimenopausal Age group.

Table -1 Age wise distribution of total biopsies

Age distribution	Number of biopsies
18-40 Reproductive age	105(54.68%)
41-50 Perimenopausal	75(39.06%)
>50 Postmenopausal	12(6.25%)
Total	192 (100%)

Table-2 Histopathological spectrum of endometrial biopsy according to age group.

Age group	18-40	41-50	>50	Total(%)
Histological diagnosis				
Proliferative phase endometrium	20	12	00	32(16.66%)
Secretory phase endometrium	49	32	02	83(43.24%)
Disordered proliferative endometrium	13	14	00	27(14.06%)
Senile atrophic endometrium	00	05	05	10(5.29%)
Simple typical hyperplasia	04	06	01	11(5.72%)
Decidualized endometrium	01	05	01	07(3.64%)
Endometrial polyp	10	01	01	12(6.25%)
Endometritis	03	00	00	03(1.50%)
Product of conception	05	00	00	05(2.60%)
Well differenciated Endometrial adenocarcinoma	00	00	01	01(0.52%)
Squamous cell carcinoma	00	00	01	01(0.52%)
TOTAL	**105 (54.68%)**	**75(39.06%)**	**12 (6.25%)**	**192(100%)**

DISCUSSION:

In most of the cases, endometrial curettage and biopsy are done for evaluation of abnormal uterine bleeding, infertility, or follow up of a previous diagnosis. Interpretation of endometrial biopsy specimens requires a complete and accurate clinical history, menstrual status, and the date of last menstrual period, along with history of exogenous hormones or drugs.[5]

In the present study, 192 specimens of endometrial curettings and biopsies were analysed retrospectively, The ages of the women ranged from 18 to 69 years, with a mean age of years. The maximum number of patients (105) belonged to the 18 to 40 years age group.

The most common endometrial histopathologic pattern observed was normal cycling endometrium. Normal cyclical endometrium including secretoryphase (43.24%) and proliferative phase(16.66%) was seen in 59.9 % of total cases and comparable to studies conducted by Vaidya et al(40.94%) & Sajitha et al(38.99%). Doraiswamy et al and Sushila Devi et al have also documented normal cyclical endometrium as the commonest observation in their studies.[4,6,7,8] This pattern was high between 30 and 49 years of age.[9]

The bleeding in the proliferative phase may be due to anovulatory cycles and in the secretory phase due to ovulatory dysfunctional uterine bleeding.[8] Endometrial study thus helps to differentiate ovulatory from anovulatory DUB. Anovulatory DUB is caused by a disturbed function of the hypothalamic-pituitary ovarian axis most commonly in polycystic ovary syndrome and at the perimenarchal and perimenopausal years.[9] During these stages of life, the cycles may be intermittently ovulatory & anovulatory, leading to great irregularity of menstruation and variability in blood loss.[10] It is observed that unopposed estrogen causes increased blood loss by various mechanisms.[11]

Disordered proliferative pattern was seen in significant number of cases, 27(14.6%) cases mainly 30 to 50 year age group and this was consistent with other studies by Gredmark T et al[12] and S Vaidya et al7. Disordered proliferative endometrium is common in the perimenopausal years because of anovulatory cycles. It is also seen in exogenous estrogen therapy and is a result of dys-synchronous growth of the functional endometrium.[9]

Again distribution of cases of simple endometrial hyperplasia was highest in perimenopausal age group. Literature mentioned studies where simple endometrial hyperplasia was one of the leading cause of AUB in perimenopausal age.[13,14,15] This supports the anovulatory cycles in this age due to which excessive and prolonged estrogenic stimulus leads to these spectrum of changes in endometrium and hence bleeding.[16]

Identification of endometrial hyperplasia is important because they are thought to be precursors of endometrial carcinoma.[17] In this study, well differentiated endometrial adenocarcinoma was seen in 1(0.52%) cases which shows lower incidences. The incidence of carcinoma is low in our study like Doraiswamy et al and Rupal Shah et al probably because of early detection.[9] Likewise, higher incidences of 3.33% and 4.4% have been reported by Mencalgia et al[20] and Doraiswami et al[14] respectively.[17]

Endometrial polyps have been reported in 2-23% patients. If the presence of a polyp is not being suspected, its fragments are usually received admixed with the rest of the endometrium in the biopsy. In such a situation, clues to the diagnosis are the fibrous stroma with thick walled vessels and different glandular architecture like focal dilatation and crowding.[5]

Endometrial polyps were seen in 6.25% of our patients. In similar studies by dr. Bandit Das and Dr. Aseema Das, Sajitha et al[18], and Khan et al19, endometrial polyps were seen in 5.2%, 5.12%, and 3.9% patients, which is comparable to the findings in present study.[5]

Atrophic endometrial pattern was seen in 5.29% cases with half of them occurring after 50 yrs of age. In atrophic endometrium the epithelium lining the glands are mitotically inactive and bland in terms of cytological appearance. The glandular architecture may be cystic or budded. These glands are embedded in an inactive spindled stroma. Although the exact cause of bleeding in atrophic endometrium is not known, it is postulated to be due to anatomic vascular variations or local abnormal hemostatic mechanisms. Various studies on women of all age groups have shown an incidence of atrophic endometrium ranging from 1.1,4.1 to 5.13%.[9]

Decidualized endometrium 3.64% of the cases which is similar to studies done by Vani et al9. which is 2.6%. and Sharma K et al.[21, 12] cases (3.28%) of pill endometrium have been reported and highest is observed in reproductive age group and cases are reported in our study are in perimenopausal women.2 Chronic endometritis made up 1.50% cases of all cases, which is similar to studies done by Vani et al.[2].16% and Rupal Shah et al.2.6%.[9]

Retained product of conception also found in this study all cases belongs to in 18 to 30 year of reproductive age group. A stydy done by Asuzu et al. shows the most common cause of abnormal uterine bleeding in this population is retained products of conception.[1]

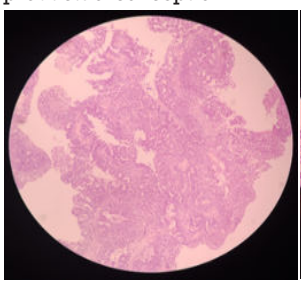

Figure 1: Well differentiated endometrial adenocarcinoma (H &E) Scanner view

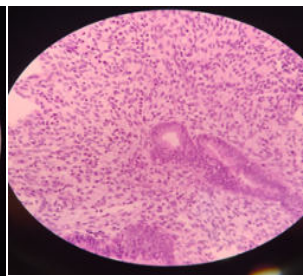

Figure 2: Endometritis (H & E) 40x

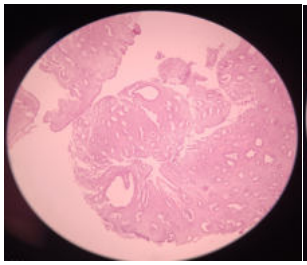

Figure 3 : Endometrial hyperplasia (H &E) Scanner view

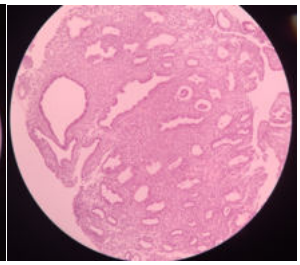

Figure 4: Endometrial hyperplasia (H&E)10x

CONCLUSION:

AUB is challenging gynecological problem caused by various endometrial pathologies. Endometrium is mirror for the hormonal status of the women. So endometrial biopsy is the first choice of investigation which is cost effective, minimal invasive and opd based procuders with short hospital stay. Histopathological examination of endometrial biopsy is challenging for pathologist also, because it shows wide spectrum of different diagnosis. This histopathological diagnosis ultimate decide to further workup of patient. Histopathological examination with clinical and radiological details co-relation is gold standard for the apropriate evaluation. AUB is mostly seen in 30 to 50 year of age group with many functional causes. In which normal cyclical changes are most common in reproductive age group. Second most common histological findings seen are disorder proliferative endometrium and hyperplasia which is seen in perimenopausal women. Only one case of well differentiated adenocarcinoma of endometrium is found, may be due to early detection of endometrial hyperplasia..

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