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Histopathological Pattern of Endometrial Sampling Performed for Abnormal Uterine Bleeding

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Background and Objective: Abnormal uterine bleeding is a challenging gynecological problem caused by various endometrial pathologies. The present study aims to identify the pattern of histopathological diagnoses encountered in women of various age groups presenting with abnormal uterine bleeding.

Design: A retrospective age specific comparative analysis.

Setting: Department of Pathology.

Method: Two thousand two hundred ninety-five endometrial samples from women presenting with abnormal uterine bleeding from January 1995 to June 2008 were retrieved and analyzed.

Result: The commonest histopathological diagnosis was secretory endometrium 571 (24.9%), followed by proliferative endometrium 498 (21.7%), endometrial polyp 227 (9.9%), disordered proliferative endometrium 200 (8.7%), simple cystic hyperplasia 160 (7%), chronic endometritis 134 (5.8%), inactive endometrium 126 (5.5%), atrophic endometrium 70 (3.1%), uterine malignancies 41 (1.8%), complex hyperplasia without atypia 33 (1.4%) and finally complex hyperplasia with atypia 15 (0.7%). Two hundred twenty (9.6%) revealed no endometrial tissue and were considered insufficient for diagnosis. Uterine malignancies and complex hyperplasia with atypia were more common in the age group of 52 years and older, 3.3% and 1.2% respectively.

Conclusion: The present study revealed that secretory and proliferative endometrium are the most common endometrial histopathological patterns identified in endometrial samples obtained for abnormal uterine bleeding in our region.

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Abnormal uterine bleeding is considered one of the most common and challenging problems presenting to the gynecologist; it is responsible for as many as one-third of all outpatient gynecologic visits[1,2]. It can be caused by a wide variety of systemic diseases such as endocrine disorders or drugs. On the other hand, it may be related to pregnancy, anovulation, fibroids, polyps, adenomyosis or neoplasia[3]. Endometrial assessment by endometrial biopsy or curettage is indicated in some of these conditions in females in the peri and postmenopausal years in order to exclude endometrial hyperplasia or carcinoma. Younger women may also need endometrial sampling if abnormal bleeding does not resolve with medical management[3].

Histological examination of the submitted endometrial tissue remains the standard diagnostic procedure for the assessment of abnormal uterine bleeding. In addition, accurate histopathological diagnosis facilitates the implementation of optimal treatment strategies[4]. Histopathological diagnosis varies according to the age with endometrial hyperplasia and cancer are higher in peri and postmenopausal women while in younger age groups, changes related to hormonal effects seems to be more common[3].

The aim of this study is to identify the pattern of histopathological diagnoses encountered in women of various age groups presenting with abnormal uterine bleeding.

METHOD

From January 1995 to June 2008, all endometrial biopsies and curettages of women with abnormal uterine bleeding are reviewed and the pattern of uterine histopathological changes identified and classified according to age groups. Women with bleeding due to pregnancy related complications such as abortions, gestational trophoblastic disease or ectopic pregnancy as well as bleeding due to previously diagnosed gynecological malignancy were excluded from the study.

The patients were divided into the following age group: adolescents (13-18 years), women of reproductive age (19-39 years), women of latter reproductive age or perimenopausal (40 years to 51) and lastly postmenopausal women (52 years and older)[3].

The software used for data analysis is SPSS Version 16.

RESULT

Two thousand two hundred ninety-eight women who fulfilled the inclusion criteria had endometrial sampling for abnormal uterine bleeding including mennorraghia, irregular cycle, metrorraghia and peri and postmenopausal bleedings. In the adolescence age group between, 13 to 18 years of age, three cases had endometrial biopsy for abnormal uterine bleeding which was not pregnancy related, one case showed proliferative endometrium, another case showed endocervical polyp and the third one had insufficient sample; because of the small number in this age group they were excluded from further analysis; therefore our study sample is 2295. Seven hundred patients were in the age group from 19-39 years; 735 patients were in the age group 40 to 51 years and 860 patients were in the age group from 52 years and older.

The commonest histopathological diagnosis was secretory endometrium 571 (24.9%) followed by proliferative endometrium 498 (21.7%), endometrial polyp 227 (9.9%), disordered proliferative endometrium 200 (8.7%), simple cystic hyperplasia 160 (7%), chronic endometritis 134 (5.8%), inactive endometrium 126 (5.5%), atrophic endometrium 70 (3.1%), uterine malignancies 41 (1.8%), complex hyperplasia without atypia 33 (1.4%) and finally complex hyperplasia with atypia 15 (0.7%). Two hundred twenty (9.6%) revealed no endometrial tissue and were considered insufficient for diagnosis.

In the age group 19 to 39 years old (reproductive age group), seven hundred cases were found. The commonest histopathological pattern in this group was secretory endometrium 246 (35%) followed by proliferative endometrium 222 (31.7%), disordered proliferative endometrium 46 (6.6%), chronic endometritis 44 (6.3%), inactive endometrium 43 (6.1%), endometrial polyp 39 (5.6%), simple hyperplasia 28 (4%), insufficient for diagnosis 19 (2.7%) complex hyperplasia with no atypia 10 (1.4%), uterine malignancies 2 (0.3%), complex hyperplasia with atypia 1 (0.14%) and no cases of atrophic endometrium, see table 1.

Table 1: Histopathological Diagnoses of Endometrial Samples Obtained for Abnormal Uterine Bleeding

Histopathological Diagnosis	**19-39 Years**	**40-51 Years**	**52 Years and Older**	**Total**
	Number and Percentage			
Secretory endometrium	246 (35%)	122 (16.6%)	203 (23.6%)	571 (24.9%)
Proliferative endometrium	222 (31.7%)	113 (15.4%)	163 (19%)	498 (21.7%)
Inactive endometrium	43 (6.1%)	83 (11.3%)	0 (0%)	126 (5.5%)
Atrophic endometrium	0 (0%)	21 (2.9%)	49 (5.7%)	70 (3.1%)
Disordered proliferative endometrium	46 (6.6%)	85 (11.6%)	69 (8%)	200 (8.7%)
Endometrial polyp	39 (5.6%)	75(10.2%)	113 (13.1%)	227 (9.9%)
Chronic endometritis	44 (6.3%)	53 (7.2%)	37 (4.3%)	134 (5.8%)
Simple(cystic) hyperplasia	28 (4%)	77 (10.5%)	55 (6.4%)	160 (7%)
Complex hyperplasia without atypia	10 (1.4%)	13 (1.8%)	10 (1.2%)	33 (1.4%)
Complex hyperplasia with atypia	1 (0.14%)	4 (0.54%)	10 (1.2%)	15 (0.7%)
Uterine malignancy	2 (0.3%)	11 (1.5%)	28 (3.3%)	41 (1.8%)
Insufficient for diagnosis	19 (2.7%)	78 (10.6%)	123 (14.3%)	220 (9.6%)
Total	**700**	**735**	**860**	**2295**

In the age group 40 to 51years old (perimenopausal age group), seven hundred thirty-five cases were found. The commonest histopathological pattern in this group was secretory endometrium 122 (16.6%) followed by proliferative endometrium 113 (15.4%), disordered proliferative endometrium 85 (11.6%), inactive endometrium 83 (11.3%), insufficient for diagnosis 78 (10.6%), simple hyperplasia 77 (10.5%), endometrial polyp 75 (10.2%), chronic endometritis 53 (7.2%), atrophic endometrium 21 (2.9%), complex hyperplasia with no atypia 13 (1.8%), uterine malignancies 11 (1.5%) and complex hyperplasia with atypia 4 (0.54%).

In the age group of 52 years and older (post-menopausal age group), 860 endometrial samples were found. The commonest histopathological pattern identified was secretory endometrium 203 (23.6%) followed by proliferative endometrium 163 (19%), insufficient for diagnosis 123 (14.3%), endometrial polyp 113 (13.1%), disordered proliferative endometrium 69 (8%), simple hyperplasia 55 (6.4%), atrophic endometrium 49 (5.7%), chronic endometritis 37 (4.3%), uterine malignancies 28 (3.3%), complex hyperplasia without atypia 10 (1.2%) and finally complex hyperplasia with atypia 10 (1.2%).

DISCUSSION

Abnormal vaginal bleeding is defined as the appearance of blood at the vaginal introitus exclusive of normal menstruation and could present as menorrhagia, metrorrhagia, polymenorrhea, metromenorrhagia, peri and postmenopausal bleeding. Abnormal uterine bleeding can be caused by a wide variety of disorders, It might be part of normal physiological state such as adolescence, perimenopausal, lactation and pregnancy or it may be caused by a pathological process that is not directly related to the uterus such as hyper androgenic anovulation in patients with polycystic ovaries, hypothalamic dysfunction, hyperprolactinemia, hypothyroidism, pituitary disease, premature ovarian failure and iatrogenic causes such as irradiation or chemotherapy[3]. The bleeding could be a sign of an underlying localized condition including benign tumors, malignancy and infection. Endometrial cancer and premalignant atypical hyperplasia are likely causes of abnormal bleeding in peri and postmenopausal bleeding.

In the present study, the two most common endometrial histopathological patterns in all three age groups were proliferative and secretory endometrium. This finding is similar to other studies[5,6].

Among women undergoing endometrial biopsy or hysterectomy, the prevalence of endometrial polyps is 10-24%; the incidence rises with increasing age, peaks in the fifth decade of life and gradually declines after menopause[7-9]. The present study showed a progressively increasing detection pattern of endometrial polyps in older age, 5.6% in the age group of 19-39 years, 10.2% in the age group of 40-51 years old and 13.1% in age group of more than 52 years, our result is comparable to other studies[8,9]. There is no direct evidence for a greater propensity of polypoid endometrium to undergo malignant change compared to the adjacent normal endometrium[10].

The detection rate in our study of chronic endometritis was higher in the age group of 40-51 (7.2%), followed by 19-39 (6.3%) and more than 52 (4.3%). These figures are relatively higher in comparison to the previously published figures[11]. The possible causes in our setup may be incomplete abortions, which are common and many result in endometritis.

The present study shows that the detection rate of endometrial carcinoma increase with increasing age, 0.3% in reproductive age group, 1.5% in perimenopausal age group and 3.3% in post menopausal age group. This finding is similar to other studies[12,13].

Endometrial hyperplasia is a precursor of endometrial cancer. The incidence of endometrial hyperplasia without and with atypia peaks in the early 50s and early 60s respectively[14,15]. Abnormal uterine bleeding in postmenopausal women requires further evaluation to exclude malignencyies[16].

In this study complex hyperplasia with atypia was seen in 0.14%, 05% and 1.2% in the age groups 19-39, 40-51 and 52+ more respectively. The complex hyperplasia without atypia was seen in 1.8% in the age group 40-51 years followed by 1.4 % in 19-39 and 1.2 % in 52 years and older.

In this study, simple hyperplasia was seen in 10.5% in the age group 40-51 years followed by 6.4% in 52+ years and 4% in 19-39 years old. These figures are similar to some studies but different from others[15-18].

In order to evaluate the consistency of preoperative and postoperative histological findings in cases of endometrial hyperplasia, Obedat B et al reviewed fifty-five patients with endometrial hyperplasia detected by surgical curettage, treated by hysterectomy and reviewed the diagnoses made in both procedures[19]. The authors in that study concluded that curettage endometrial pathology tends to be more consistent with final hysterectomy pathology in simple hyperplasia.

Inadequate samples are reported when no specimen is obtained or the quality or tissue yield of a sample is insufficient for adequate assessment. The present study showed an inadequacy rate of 9%, which is comparable with other studies[4].

Failure rates and inadequate sampling rates are more common among postmenopausal women; it is due to prevalence of cervical stenosis and atrophy of the endometrium[4]. In postmenopausal women, this finding is normally compatible with an atrophic endometrium and an ultrasound endometrial thickness of < 5 mm. The cause of bleeding in these women is most likely due to superficial petechial hemorrhages and mucosal ulceration arising from the fragile vascular support provided by a thin underlying stroma.

CONCLUSION

The present study revealed that secretory and proliferative endometrium are the most common endometrial histopathological patterns in endometrial samples obtained for abnormal uterine bleeding in our region. This study, as well, revealed that the incidence of endometrial complex hyperplasia with atypia and endometrial carcinoma increases with age.

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