A 2-DECADE REVIEW OF HISTOPATHOLOGICAL PATTERN OF ENDOMETRIAL SAMPLES AT A REFERRAL CENTRE IN NORTHERN NIGERIA

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ABSTRACT

Background: Endometrial biopsy is a commonly performed procedure with a wide range of possible histopathological diagnoses.

Objective: To determine the clinical spectrum, frequency and age distribution of endometrial pathologies at the University of Maiduguri Teaching Hospital (UMTH), Maiduguri.

Methods: This was a 20 year retrospective review of all histologically analysed endometrial samplesin the histopathology Department of the UMTH, Maiduguri, from January, 1989 to December, 2008 inclusive.

Results:A total of 801 endometrial biopsies were reviewed during the study period. The age ranged from 14-75 years with a mean of 32.5 years ± SD 10.4 years. The results showed that most (41.7%) of the patients were in their3rd decade of life. Simple endometrial hyperplasia was the leading histopathological diagnosis accounting for 56.2%, followed by retained products of conception representing 10.2%. Malignant conditions were diagnosed in 62 patients (7.7%), of which the most common was choriocarcinoma (3.8%), while endometrial cancer was found in 1.5%.

Conclusion: The commonest histopathological diagnosis of endometrial samples in UMTH is simple endometrial hyperplasia. Careful treatment and follow up of women with endometrial hyperplasia is essential. Regular audit of endometrial samples as a follow up to this review is recommended.

Key words: endometrial samples,histopathological pattern, Maiduguri

INTRODUCTION

A major proportion of the workload in manyhistopathology laboratories is accounted for byendometrial biopsies, either curettage specimens oroutpatient biopsy specimens.[1] Endometrial lesions are among the most common gynaecological conditions in the tropics and developing countries, accounting for up to 25% of gynaecological cases.[2]The spectrum of common pathologies that can be detected histologically include hormonal imbalance pattern (disorderly proliferative endometrium, non-secretory endometrium with stromal and glandular breakdown, luteal phase

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defect and pill effect) atrophic endometrium, endometritis, endometrial polyp, endometrial hyperplasia and endometrial carcinoma.[3]

Abnormal uterine bleeding is a very common gynaecological condition that affects all age groups. The endometrium is uniquely endowed throughout the female reproductive lifespan with complex regular cycles of periodic proliferation, differentiation, breakdown and regeneration.[4]

Dysfunctional uterine bleeding reflects a disturbance of the hypothalamic-pituitary-ovarian axis that results in irregular, prolonged and sometime heavy menstrual bleeding.[5] During climacteric, ovarian activity declines. Initially, ovulation fails, no corpus luteum forms, and no progesterone is secreted by the ovary. Therefore the premenopausal menstrual cycles are shortened, often anovulatory and irregular. The irregularity in menstrual cycle during perimenopause can be due to anovulation or to irregular maturation of follicles. The increased risk of endometrial hyperplasia and endometrial carcinoma is more evident in peri-menopausal and post-menopausal women with abnormal uterine bleeding.[6]

Endometrial biopsy via curettage is a safe and effective diagnostic test in the evaluation of abnormal uterine bleeding and histological examination of the submitted endometrial tissue remains the standard diagnosticprocedure for the assessment of abnormal uterine bleeding. In addition, accurate histopathologicaldiagnosis facilitates the implementation of optimal treatment strategies.[7]

The aim of this study is to determine the clinical spectrum, frequencies and age distribution of histopathological diagnoses of endometrial samples of patients in our population. This study will serve as a baseline data in this region for references and further research.

MATERIALS AND METHODS

The University of Maiduguri Teaching Hospital serves the people of Borno state, neighbouring states and even Chad and Niger republics. A twenty year retrospective review of all endometrial samples received at the histopathology department of the UMTH from January 1989 to December 2008 was carried out. The patient information was retrieved from the bench book. Cases in which the age was not specified and those whose slides were not found were excluded from the study. The endometrial samples were previously fixed in formalin, processed and stained with Haematoxylin and Eosin. The slides were then reviewed and the pathologies classified according to the histological diagnosis. Data analysis was done with Minitab software version 14.0.The results were presented in tabular form as frequencies and percentages.

RESULTS

A total of 862 endometrial samples were received during the study period. Of these, 61 were excluded for not having adequate information for analysis (age not indicated or missing slides), and 801 were therefore analysed. Information retrieval rate was thus 92.9%.

Table 1 shows the age distribution of the patients with histological diagnosis of endometrial biopsies. The ages ranged from 14 years to 75 years with a mean of 32.5 years ± SD 10.4 years. Most of the patients (41.7%) were in their 3rd decade, and the least were within the 8th decade (1.1%). Only one patient was 14 years and was the youngest, with a diagnosis of simple endometrial hyperplasia. The oldest was 75 years old with a diagnosis of metastatic squamous cancer.

Table 2 shows the frequencies of the different histopathological diagnosis of the endometrial biopsies among the patients. Simple endometrial hyperplasia was the commonest histopathological

diagnosis representing 56.2% of the total diagnosis, while the least common was uterine sarcoma seen in only 2 patients (0.2%). Fertility related problems were diagnosed in 17 patients (2.1%), while a diagnosis of endometritis was made in 53 patients (6.6%). Pregnancy related causes were found in 88 patients (10.9%) of which 82 (10.2%) had retained products of conception and 6 (0.7%) had Arias-stella reaction. Endometrial hyperplasia was found in 541 patients (67.5%), of which simple endometrial hyperplasia was the commonest diagnosed in 450 patients (56.2%), followed by complex endometrial hyperplasia diagnosed in 80 patients (10.0%) then atypical hyperplasia diagnosed in 11 patients (1.4%). Benign neoplastic conditions were diagnosed in 40 (5.0%) patients of which 23 (2.9%) had hydatidiform mole and 17 (2.1%) had endometrial polyp. Malignant conditions were diagnosed in 62 patients (7.7%). The most common malignancy diagnosed was choriocarcinoma found in 30 patients (3.8%), followed by metastatic squamous cancer in 18 patients (2.2%), endometrial cancer in 12 patients (1.5%) and uterine sarcoma in 2 patients (0.2%).

Table 3 shows the age distribution of patients with histological diagnosis of retained products of conception, with the highest frequency found in the 3rd decade (50.0%).

Table 4 shows the age distribution of patients with histological diagnosis of endometrial hyperplasia. Both simple and complex endometrial hyperplasia were most common in the 3rd decade of life (44.7% and 35.0% respectively), while atypical endometrial hyperplasia was more common in the 5th decade (45.4%).

Table 5 shows the age distribution of patients with histological diagnosis of neoplasia. The commonest malignancy diagnosed was choriocarcinoma which was most common in the 3rd decade of life (60%). Endometrial cancer was most common in the 5th and 6th decade (33.3% each).

DISCUSSION

The results show that the most common abnormalityobserved was endometrial hyperplasia which occurred in 67.6% of the cases of which 56.2% were simple hyperplasia, 10.0% were complex hyperplasia and 1.4% were atypical hyperplasia. This is similar to findings in other parts of Nigeria.[8,9,10]Simple hyperplasia develops more commonly in adolescents and during the perimenopausal period.It is due to the anovulatory cycles which are commonly seen in adolescent and peri-menopausal women[11,] as demonstrated in our study where 80.7% of our patients were in perimenopausal/adolescent period. The peak age at occurrence was 20-29years for both simple and complex hyperplasia and 30-39years for atypical hyperplasia. This is similar to the findings of Dauda et al in Jos.[8]However, a study in US found simple and complex hyperplasia incidences peaked much later in women aged 50–54 years while the incidence of atypical hyperplasia was greatest in women aged 60–64 years.[12]One would expect earlier age at diagnosis in developed countries due to higher rate of obesity and lower parity which are risk factors for endometrial hyperplasia[3,4]. The variation could be due to unknown environmental influences, or it could be because younger women in our environment are more likely to present to the hospital for evaluation when they have a problem (especially when there is associated subfertility or infertility with abnormal uterine bleeding, as seen in more than 47% of our patients) than older women, resulting in a higher detection rate in the younger age group.

Pregnancy related changes were the second most common findings, featuring in 10.9%, with peak incidence in the 20-29 age group. This is much lower than the finding in Jos where 54.3% had pregnancy related changes though the peak age incidence was also in the 20-29 age group (60%).[8]This is probably because women in our area sometimes discard specimen of uterine evacuation following abortion,as

they don't see the need for a histological diagnosis even after counselling on the need for histological evaluation of such specimen.

Fertility problems were found in 17 patients (2.1%). Fifty three patients (6.6%) had endometritis, which was 5 times higher than reported from Benin[10]and the peak incidence was in the 20-29 years age group (39.6%). This was probably due to the high rate of abortion in this group. There was no case reported in the 10-19 years age group, and 88.8% was found among women in the reproductive age group. Other researchers however reported lower values[13, 14]

Neoplastic conditions were diagnosed in 102 patients (12.7%) of which 40 (5.0%) had benign conditions, and 62 (7.7%) had malignant conditions. Endometrial polyp was diagnosed in 2.1% with peak age incidence in the 20-29 years age group. This is slightly lower than 3% reported in Benin City[10]but similar to 1.7% reported by Jairajpuri et al in New Delhi.[15]Hydatidiform mole was diagnosed in 2.9% while choriocarcinoma was surprisingly diagnosed in 3.8%. The incidence of choriocarcinoma in this study is higher than the 1.8% found in Jos,[8] and the 0.4% in Benin[10]but lower than 5.5% reported in Senegal.[16]This difference may bepartly attributable to the high incidence of illegal abortions in Benin City study[10] which may not allow histopathological analysis of the endometrial samples. Endometrial cancer occurred in 1.5%, which is similar to findings in other studies.[8, 10, 17]Nevertheless, a much higher values of 4.4% for endometrial carcinoma have been documented by Saraswathi*etal*[18] on the contrary a much lower value 0.5% has been documented for endometrial carcinoma by Jairajpuri*etal*[15]New Delhi, with the majority in the perimenopausal age group.The low frequency of endometrial cancer found may be due to the fact that simple endometrial hyperplasia was much more common than atypical hyperplasia and the likelihood of developing cancer with simple hyperplasia is just 1%.[19]The incidence of endometrial cancer increased with increasing age and peaked at 40-59 years (66.6%). This is similar to finding in Jos,[8] and Benin[10],but in contrast with results obtained from studies in developed countries which reported mean ages of and 61 years.[20]This is probably as a result of increased use of combined oral contraceptives in women less than 55 years in such countries, resulting in lower rate in the younger age group, as combined oral contraceptive use has been found to be protective.[21]None was seen in those less than 30 years.

CONCLUSION

The commonest histopathological diagnosis of endometrial samples was simple endometrial hyperplasia accounting for 56.2% with peak age incidence in the 3rd decade, while endometrial cancer occurred in only 1.5% with peak age incidence in the 5th and 6th decades.Careful treatment and follow up of women with endometrial hyperplasia is essential.More regular audits as a follow up to this review is recommended.

Table 1: Age distribution of the patients with histological diagnosis of endometrial biopsies.

Age group (years)	Number (%)
10-19	37 (4.6%)
20-29	334 (41.7%)
30-39	246 (30.7%)
40-49	125 (15.6%)
50-59	39 (4.9%)
60-69	11 (1.4%)
70-79	9 (1.1%)
Total	801(100%)

Mean 32.5 years ± SD 10.4 years.

Table 2: Frequencies of the different histopathological diagnosis of the endometrial biopsies

Histopathological diagnosis	Number (%)
1. FERTILITY RELATED AND INFLAMMATORY	
Proliferative phase	
Secretory phase	3 (0.4%)
Stromo-glandular dissociation	7 (0.9%)
Atrophy	4 (0.5%)
Endometritis	3 (0.4%)
	53 (6.6%)
2. PREGNANCY RELATED	
Products of conception (fetal of placental tissue)	
Arias-stella reaction	
	82 (10.2%)
3. HYPERPLASIA	6 (0.7%)
Simple endometrial hyperplasia	
Complex endometrial hyperplasia	
Atypical endometrial hyperplasia	
	450 (56.2%)
4. NEOPLASTIC	80 (10.0%)
BENIGN	11 (1.4%)
Hydatidiform mole	
Endometrial polyp	
MALIGNANT	
Choriocarcinoma	23 (2.9%)
Endometrial adenocarcinoma	17 (2.1%)
Uterine Sarcoma	
Metastatic squamous cell carcinoma	30 (3.8%)
	12 (1.5%)
	2 (0.2%)
	18 (2.2%)
Total	801 (100%)

Table 3: Age distribution of patients with histological diagnosis of retained products of conception

Age (years)	Number (%)
10-19	4 (4.9%)
20-29	41 (50.0%)
30-39	32 (39.0%)
40-49	5 (6.1%)
50-59	0 (0.0%)
60-69	0 (0.0%)
70-79	0 (0.0%)
Total	82 (100%)

Table 4: Age distribution of patients with histological diagnosis of endometrial hyperplasia

Age (years)	Simple	Complex	Atypical
10-19	19 (4.2%)	6 (7.5%)	0 (0.0%)
20-29	201 (44.7%)	28 (35.0%)	0 (0.0%)
30-39	143 (31.8%)	25 (31.3%)	2 (18.2%)
40-49	68 (15.1%)	18 (22.5%)	5 (45.4%)
50-59	14 (3.1%)	2 (2.5%)	2 (18.2%)
60-69	2 (0.4%)	1 (1.2%)	2 (18.2%)
70-79	3 (0.7%)	0 (0.0%)	0 (0.0%)
Total	450 (100%)	80 (100%)	11 (100%)

Table 5: Age distribution of patients with histological diagnosis of neoplasia

Age (years)	Hyd mole	Endometrial polyp	Chorioca	Endometrial adenoCA	Sarcoma	Metastatic CA
10-19	5 (21.7%)	0 (0.0%)	2 (6.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
20-29	12 (52.3%)	6 (35.3%)	18 (60%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
30-39	5 (21.7%)	4 (23.5%)	4 (13.3%)	1 (8.4%)	1 (50.0%)	3 (16.7%)
40-49	1 (4.3%)	4 (23.5%)	3 (10.0%)	4 (33.3%)	0 (0.0%)	4 (22.2%)
50-59	0 (0.0%)	3 (17.7%)	3 (10.0%)	4 (33.3%)	0 (0.0%)	4 (22.2%)
60-69	0 (0.0%)	0 (0.0%)	0 (0.0%)	3 (25.0%)	1 (50.0%)	1 (5.6%)
70-79	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	6 (33.3%)
Total	23 (100%)	17 (100%)	30 (100%)	12 (100%)	2 (100%)	18 (100%)

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