Original Article

PATTERN OF ENDOMETRIAL HYPERPLASIA IN AMINU KANO TEACHING HOSPITAL, KANO, NORTH WESTERN NIGERIA

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Abstract

Background: Endometrial hyperplasia is an important precursor to endometrial cancer which is the most common gynecological malignancy in the Western world and fourth commonest gynecological cancer in sub–Saharan Africa. This study described the histopathological pattern of Endometrial Hyperplasia seen in Aminu Kano teaching Hospital Kano, North western Nigeria. **Materials and Methods**: This was a 12-year retrospective review of all endometrial biopsies of patients diagnosed with endometrial hyperplasia seen in Aminu Kano teaching Hospital, Kano from 1st January, 2008 to 31st December 2019. **Results**: The proportion of endometrial hyperplasia was 6.04 % of all endometrial biopsies and the most common histologic type was simple hyperplasia without atypia. The mean age of patients with endometrial hyperplasia was 40.3 (SD ±11.11) years. The 18–40 years age bracket was the peak age for the non-atypical endometrial hyperplasia, while atypical was found commonly in patients above 41 with a p-value of 0.0001 making it statistically significant. **Conclusion:** Atypical Endometrial hyperplasia was found to be prevalent among the peri- menopausal age group. Such women will require follow up and definitive management in order to reduce the incidence of endometrial cancer.

INTRODUCTION

Endometrial hyperplasia (EH) is defined as irregular proliferation of endometrial glands with an increase in the gland to stroma ratio when compared with proliferative endometrium [1,2]. Endometrial hyperplasia is an important precursor to endometrial cancer which is the most common gynecological malignancy in the Western world [1, 3] and fourth commonest in the sub-Saharan Africa [4].

The incidence of endometrial hyperplasia is estimated to be at least three times higher than endometrial cancer and if left untreated can progress to cancer [1]. Endometrial hyperplasia results from prolonged unopposed estrogen stimulation of the endometrium [1, 5-7]. Predisposing risk factors for endometrial hyperplasia include obesity (with excessive peripheral conversion of androgens in adipose tissue to estrogen), anovulation associated with the perimenopause or polycystic ovary syndrome (PCOS), estrogen-secreting ovarian tumours such as granulosa cell tumor of the ovary and also chronic use of systemic estrogen either for hormone replacement therapy or management of breast cancers (e.g., tamoxifen) [1, 5-8]. Endometrial hyperplasia is most frequently diagnosed in postmenopausal women, but women of any age can be at risk if they are exposed to sustained high levels of estrogen[7].

The most common presentation of endometrial hyperplasia is abnormal uterine bleeding which could be

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How to cite this article: Adamou N, Sayyid A, Umar UA, Umar AB, Salihu A, Abdullahi S. Pattern of Endometrial Hyperplasia in Aminu Kano Teaching Hospital, Kano, North Western Nigeria. Ann Trop Pathol 2022; 13:104-107.

in the form of menorrhagia, metrorrhagia or postmenopausal bleeding [1, 5, 7].

Previously, the World Health Organization (WHO) classified endometrial hyperplasias into four categories: Simple hyperplasia without atypia, Complex hyperplasia without atypia, Simple atypical hyperplasia and Complex atypical hyperplasia [1, 5]. These were based upon both the complexity of the glandular architecture and the presence of nuclear atypia. However, the most recent classification by WHO proposed in 2014 was solely based on the presence or absence of cytological atypia i.e. Hyperplasia without atypia and Atypical hyperplasia [5]. Hyperplasia without atypia are generally benign diseases and often resolve after normalization of causative (hormonal) factor but may progress to invasive disease if endocrine disorder persist for long in 1-3% of cases [5]. Hyperplasia with atypia have a 25-59% chance of progression or coexistence with invasive cancer [5]. Diagnosis of endometrial hyperplasia is by histological evaluation of endometrial tissue obtained by biopsy or curettage or from a hysterectomy [1, 5, 7]. Transvaginal ultrasound also has a role in the diagnosis of endometrial hyperplasia in pre- and postmenopausal women as it shows irregularity of the endometrial plate or abnormal thickening of the endometrial plate [1].

Management of endometrial hyperplasia is dependent on the age of the patient, desire for fertility and degree of atypia of the lesion [1, 5]. Treatment could either be conservative or surgical. Conservative treatment is essentially hormonal and indicated in patients with hyperplasia without atypia[5] while surgical management entails hysterectomy and is the main stay in older patients who no longer desire fertility and also in patients with atypical hyperplasia [1, 5].

The aim of this study was to document the prevalence and pattern of endometrial hyperplasia seen at Aminu Kano Teaching Hospital Kano, North western Nigeria from January, 2008 to December, 2019

MATERIALS AND METHOD

This was a 12-year retrospective Histopathological analysis of endometrial biopsies seen at the department of Histopathology of Aminu Kano teaching hospital from the 1st of January, 2008 to 31st of December, 2019. Data was extracted from the departmental Register. Information extracted included Laboratory number, patients' age and histological diagnosis. Samples originating outside AKTH were excluded from the study likewise patients with diagnoses of pregnancy related complications such as abortions, gestational trophoblastic diseases and cancers. Histologic slides were also retrieved and reviewed to confirm diagnosis. Where slides have faded or broken, tissue blocks were recut and fresh slides were made. Data obtained were analysed by the Statistical Package for Social Sciences (SPSS) version 20 (SPSS Inc., Chicago, IL, USA) and results presented in tables and chart.

RESULT

Sixty seven thousand, six hundred and thirty (67, 630) surgical biopsies were received and processed at the department of Histopathology of Aminu Kano Teaching Hospital, Kano during the study period. Six thousand, seven hundred and six (6, 706) were endometrial biopsies and four hundred and five (405) were diagnosed with the various histologic types of Endometrial hyperplasia. The proportion of the endometrial biopsies diagnosed with endometrial hyperplasia to those of other endometrial lesions was 6.04%. The various histologic types of the endometrial hyperplasia were reclassified using the

Table 1. Histologic Type and Frequency of EH

Histologic type	Frequency	Percentage (%)
Simple hyperplasia without atypia	321	79.3
Complex hyperplasia without atypia	18	4.4
Simple hyperplasia with atypia	40	9.9
Complex hyperplasia with atypia	26	6.4
Total	**405**	**100**

Table 2: Age Distribution

Age	Frequency	Percentage (%)
≤ 20	13	3.2
21 – 30	81	20.0
31 – 40	120	29.6
41 – 50	131	32.4
51 – 60	39	9.6
61 – 70	20	4.9
> 70	1	0.3
Total	**405**	**100**

Table 3. Pattern of endometrial hyperplasia among the age groups

Patients' age	Hyperplasia without atypia	Hyperplasia with atypia
18 – 40	202	14
41 – >	137	52
Total	**339**	**66**

Table 4. Pattern of Endometrial Hyperplasia among various Age Groups

Age	Simple hyperplasia without atypia	Complex hyperplasia without atypia	Simple Hyperplasia with atypia	Complex hyperplasia with atypia
≤ 20	**11**	**1**	**1**	**0**
21 – 30	**76**	**4**	**1**	**2**
31 – 40	**107**	**3**	**5**	**5**
41 – 50	98	8	14	10
51 – 60	20	2	11	6
61 – 70	9	0	7	3
> 70	0	0	1	0
Total	**321**	**18**	**40**	**26**

Table 5. Pattern of the Annual Distribution of Endometrial Hyperplasia

Year	Frequency of EH	Percentage (%)
2008	30	7.4
2009	36	8.9
2010	55	13.6
2011	49	12.1
2012	63	15.5
2013	56	13.8
2014	10	2.5
2015	13	3.2
2016	19	4.7
2017	23	5.7
2018	17	4.2
2019	34	8.4
Total	**405**	**100**

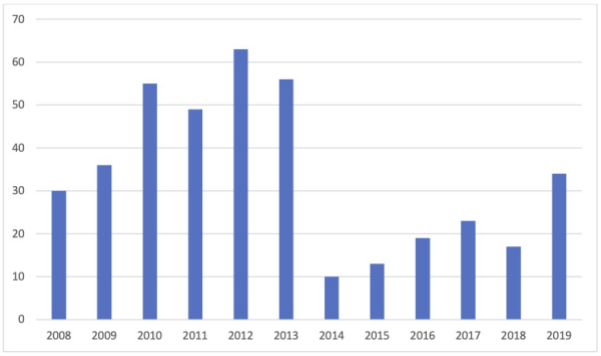

Fig 1. Annual Distribution of Endometrial Hyperplasia

WHO classification of endometrial hyperplasia (Table 1). Simple hyperplasia without atypia was the most common type accounting for 321 (79.3%) cases. This was followed by simple hyperplasia with atypia which was seen in 40 (9.9%) cases while complex hyperplasia with atypia was seen in 26 (6.4%) cases. Complex hyperplasia without atypia was the least frequent type documented in only 18 (4.4%) of the cases (Table 1). Three hundred and thirty nine (339) were generally hyperplasia without atypia and sixty six (66) showed variable degree of atypia (Table 1).

The age range of the patients with EH was 18 to 71 years with a mean of 40.3 (SD ±11.11) years (Table 2). The highest number of EH occurred in the second to fifth decades of life accounting for 332(82%) cases (Table 2).Two hundred and fourteen (52.8%) were less than 41years of age, while one hundred and ninety one (47.2%) were more than 41 years old.

Table 3 shows the distribution of atypical and non-atypical hyperplasia amongst the age groups. Hyperplasia without atypia was generally more prevalent in all the age groups but the atypical hyperplasia was noted to be more common in women above 40 years.

Table 4 depicts the various histologic types of EH and their distribution amongst the age groups. In all the age groups, simple hyperplasia without atypia was the predominant histologic type. In the 4th and 5th decades of life, there was a slight but steady increase in the number of the atypical types of EH. A single case of simple hyperplasia with atypia was documented in a 71 year old postmenopausal patient.

There was a steady yearly increment in the number of cases of EH with 30(7.4%) cases diagnosed in 2008 compared to 36(8.9%) in 2009 and 63 (15.5%) in 2012 but there was a sharp decline in 2014 and 2015 with 10(2.5%) and 13(3.2%) cases respectively. Thereafter, the number of cases continued to rise steadily and 34 cases (8.4%) were documented in 2019 (Table 5 and Figure 1).

DISCUSSION

Endometrial hyperplasia has been reported as one of the most over diagnosed lesions in surgical pathology with its clinical significance being the risk of progression to endometrial malignancy. [7, 9] The study documents a proportion of 6.04% for endometrial hyperplasia from assessed endometrial biopsy specimens. This is much lower than that reported in northern Nigeria (62.3%) [7]. Other studies reported a lower proportion of 18.3% [10] and 1.25% [11]. This finding is of public health implication as the risk of progression to cancer has been well documented and our patients bear the cost of every step of management from diagnosis to treatment.

These women will, therefore, need very close follow-up and definitive management. Expected normal proportion is 0.5–5% [7, 12]. The study showed that incidence of hyperplasia without atypia was higher among women of 21-40 years (46.9%), while EH with atypia was more among 41-60 years old women (10%). This is similar to findings by Dawudu et al and Reed et al [6. 10] but in contrast to that reported from north western Nigeria, where majority of the patients were in their fourth decade of life [7].

Hyperplasia without atypia accounted for 83.7% of all the cases of endometrial hyperplasia with Simple hyperplasia without atypia accounting for about 79.3% of all the cases. This was less than the 95.5% reported by Dawudu et al in south western Nigeria but consistent with that of northern Nigeria which recorded an incidence of 83.2% for simple hyperplasia without atypia [6, 7].

Furthermore, there was increasing frequency in the trend of endometrial Hyperplasia over the study duration. This was in contrast to previous studies where a decreasing trend was noted [7, 10]. This may be due to the relatively smaller sample size when compared with other studies and the shorter periods of work in 2014 and 2015 due to multiple industrial strike actions. The decline in the number of cases seen from 2018 may also be attributed to the beginning of proliferation of private histopathology laboratories and some of the sample may

likely be processed there and not reflected in the register of AKTH.

Hyperplasia without atypia was noted to be more prevalent in the reproductive age range (26, 17%) while atypical hyperplasia was more frequent in the perimenopausal age group. This finding is similar to other studies which reported atypical hyperplasia occurring majorly in perimenopausal age although atypical lesions were also seen among those in the post-menopausal age group. [6, 7] The absence of atypical hyperplasia in the post-menopausal age group seen in this study may be attributed to the smaller study population and to the challenge in obtaining samples. In our setting the histopathological analysis is performed on samples obtained by endometrial biopsy either by curettage or vacuum aspiration, which is a blind procedure compared to biopsies under hysteroscopy allowing direct and adequate biopsy.

The study also noted that, the 2014 WHO classification of endometrial hyperplasia was yet to be adopted as the reporting protocol in Aminu Kano Teaching hospital.

CONCLUSION

Endometrial hyperplasia was found to be prevalent among the perimenopausal and reproductive age group. Such women will require follow up and definitive management in order to reduce the incidence of endometrial cancer. We recommend that the recent WHO classification scheme be implemented in reporting diagnosis so as to objectively compare findings and to remove all ambiguities with respect to the terminology.

REFERENCES

1. Management of Endometrial Hyperplasia. Green-top Guideline No.67. RCOG/BSGE JointGuideline.2016.Availableathttps://www.rcog.org.uk/globalassets/documents/guidelines/green-top-guidelines/gtg_67_endometrial_hyperplasia.pdf. [Accessed on 19th April, 2018].
2. Kurman RJ, Carcangiu ML, Herrington CS, Young RH, editors. WHO Classification of Tumours of Female Reproductive Organs. 4th ed. [Lyon]: IARC; 2014.
3. Statistics: Gynecological Health at a Glance. Available at: https://www.hopkinsmedicine.org/healthlibrary/conditions/gynecological_health/statistics_gynecological_health_at_a_glance_85,P00587. [Accessed on 19th April, 2018].
4. Odukogbe A A, Adebamowo C A *et al.* Ovarian cancer in Ibadan: Characteristics and management. *J Obstet Gynecol*. 2004; **24**(3): 294-297.
5. Opoku BK, Kwawukume EY. Endometrial hyperplasia. In: Kwawukume E Y, Ekele BA, Danso KA Emuveyan EE. Comprehensive obstetrics in the tropics. 2nd edition. Assemble of God literature Ltd, Accra-North. 2015; pages: 583-588.
6. Dawodu O O, Ikeri N Z, Banjo A A. An audit of endometrial hyperplasias at the Lagos University Teaching Hospital. *Niger J Clin Pract*. 2017; **20**:1074-8.
7. Takai IU, Bukar M, Mayun AA, Ugwa EA, Audu BM, Abdurrahman A. Endometrial hyperplasia: A-2 decade retrospective analysis of histopathological pattern at a university teaching hospital in Northern Nigeria. *Sub-Saharan Afr J Med*. 2016; **3**:171-5.
8. Kurman RJ, Kaminski PF, Norris HJ. The behavior of endometrial hyperplasia. A long-term study of "untreated" hyperplasia in 170 patients. *Cancer*. 1985; **56**:403-12.
9. Silverberg SG. Problems in the differential diagnosis of endometrial hyperplasia and carcinoma. *Mod Pathol*. 2000; **13**: 309-27.
10. Baral R, Pudasaini S. Histopathological pattern of endometrial samples in abnormal uterine bleeding. *J Pathol Nepal*. 2011; **1**:13-6.
11. Ojo BA, Aboyeji PA, Buhari MO, Abdulraman MB. Endometrial pathology in a teaching hospital in North Central Nigeria: A histopathological survey. *Niger J Health Biomed Sci.* 2005; **4**:107-11.
12. Reed SD, Newton KM, Clinton WL, Epplein M, Garcia R, Allison K, *et al.* Incidence of endometrial hyperplasia. *Am J Obstet Gynecol*. 2009; **200:** 678.e1-6.