



■ Original Research Article

## Histopathologic Spectrum of Uterine Corpus Lesions in a Tertiary Centre: An Eleven-Year Review

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### Abstract

**Context:** Histopathological diseases of the uterine corpus are influenced by several factors including age, parity, hormonal and environmental factors. Indeed, majority of neoplastic uterine corporal diseases (notably fibroids, carcinomas and sarcomas) are acknowledged to be manifestations of physiologic and pathologic hormonal influences. **Aims:** This paper presents a descriptive, analytic study of the neoplastic and non-neoplastic lesions of the uterine corpus from a hitherto poorly reported tertiary hospital of a low and middle-income country (LMIC). **Settings and Design:** This is a retrospective study of all the uterine corpus samples received in the histopathology department of National Hospital Abuja over an 11-year period from January 1<sup>st</sup> 2009, to December 31<sup>st</sup> 2019. **Methods and Material:** Data on all uterine corpus samples were retrieved from departmental electronic registers. Further clinical information was obtained from the health records of the hospital where necessary. The neoplastic lesions were classified using the 5th edition of the World Health Organization (WHO) Classification of Tumours. **Statistical analysis used:** The data obtained were collated and analyzed using the Statistical Package for Social Sciences (SPSS), version 20. The data were presented in proportion, frequency tables and figures. **Results:** Of the 3311 uterine corpus samples analyzed, 60.2% were non-neoplastic lesions whilst the rest (39.8%) were neoplastic of which 94% of the neoplastic lesions were benign whilst 6% were malignant. Uterine leiomyomata constituted 87.2% (N=1326) of all neoplastic samples. Endometrial carcinoma represented the commonest neoplastic malignant lesion accounting for 65.9%, of which endometrioid histology was the predominant subtype with fewer proportions of carcinosarcoma, serous carcinoma and undifferentiated carcinoma. **Conclusions:** Leiomyoma is the commonest benign neoplastic uterine corporal lesion whilst endometrial adenocarcinoma is the predominant malignant lesion.

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**Keywords:** uterine corpus, leiomyomata, endometrial carcinoma

### Introduction

The histopathology of uterine corpus lesions is largely influenced by several factors such as age, parity, the hormonal milieu, and environmental factors which may predispose to various benign and malignant lesions.<sup>1,2</sup> Uterine fibroids are the most common benign neoplasms

of the female genital tract.<sup>[3]</sup> These non-cancerous monoclonal tumors are more common in black females in the reproductive years with an estimated incidence of over 80%.<sup>3,4</sup> They account for over 10% of gynecological admissions in South-eastern and

South-western Nigeria<sup>5,6</sup> and may be found in over 60% of hysterectomy specimens done for non-malignant conditions<sup>7</sup>

Cancers involving the corpus uteri are primarily endometrial cancers<sup>8</sup>. Endometrial carcinomas are broadly classified into 2 types with different risk factors and clinicopathologic characteristics.<sup>9, 10</sup> Type 1 is estrogen dependent, includes grade 1 and 2 endometrioid tumours, are mostly preceded by endometrial hyperplasia and have a good prognosis. The incidence of endometrial cancer is on the rise worldwide, attributable to higher rates of obesity, co-morbid conditions as well as an aging population,<sup>11</sup> and estimated to increase by more than 50% worldwide by 2040<sup>18</sup>. In Nigeria, several studies have indicated a significant rise in the prevalence of endometrial cancer with the disease accounting for up to 16% of gynaecological malignancies.<sup>12, 13</sup>

Uterine sarcomas are rare tumours that arise from the muscle tissues and stromal elements of the uterine corpus.<sup>14</sup> It is generally accepted, that uterine sarcomas do not arise from leiomyomas with rare exceptions.<sup>15, 16</sup> Few studies report the prevalence of these rare tumours in Nigeria, however, a 12-year review in the south of Nigeria reported an incidence of 0.5% of all malignancies<sup>17</sup>.

There is a paucity of knowledge of uterine corpus lesions in our environment despite the significant frequency of associated morbidity and mortality. This paper aims to profile the benign and malignant histopathologic lesions of the uterine corpus over an eleven-year period, which may serve as a baseline for further research.

**Materials and methods**

This is a retrospective study of all the uterine corpus samples received in the histopathology department of XX Abuja over an 11-year period from January 1<sup>st</sup>, 2009, to December 31<sup>st</sup>, 2019.

Data on all uterine corpus samples were retrieved from departmental electronic registers. Data extracted include patients’ demographics and histopathological diagnosis. Further clinical information was obtained from the health records of the hospital where necessary. The neoplastic lesions were classified using the 5th edition of the World Health Organization (WHO) Classification of Tumours<sup>18</sup>. The data obtained were collated and analyzed using the Statistical Package for Social Sciences (SPSS), version 20. The data were presented in proportion, frequency tables and figures.

**Results**

A total of 3396 uterine and endometrial samples were received during the study period. These included samples from the procedures of hysterectomy, myomectomy, endometrial sampling, and uterine evacuation. Eighty-five samples had no pathological diagnosis on histology, one sample was a foreign body, and these were excluded

from the study. A total of 3310 samples had histopathological diagnosis and of these, 1908 (57.6%) were classified as uterine corpus lesions according to the World Health Organization (WHO) Classification of Tumours, and these were further analysed. Of the other specimens received, 87.4% (1226) were products of conception, 4.1% (57) gestational trophoblastic disease, and 1.8% (25) placenta accreta syndrome. Figure 1 shows the number of uterine and endometrial samples received during the 11-year study period.

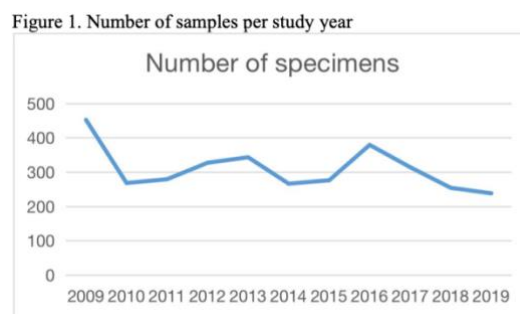


Figure 1. Number of samples per study year

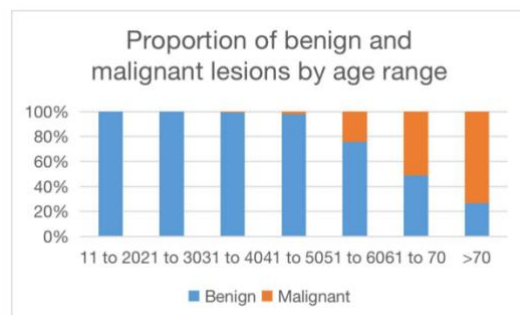


Figure 2. Distribution of samples by age into benign and malignant lesions

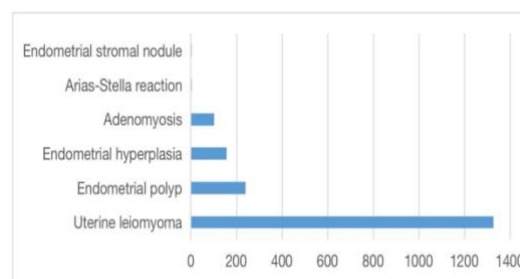


Figure 3. Non-malignant uterine corpus lesions

The median age of patients with uterine corpus lesions in the sample was 38 (range 13 to 88) years. Most patients were between 31 to 40 years (946, 49.6%). The age distribution is shown in Table 1. The median age of patients with benign lesions was 38 (range 18 to 85)

years, while the median age of patients with malignant lesions was 60 (range 30 to 88) years. Figure 2 shows the distribution of samples by age into benign and malignant lesions.

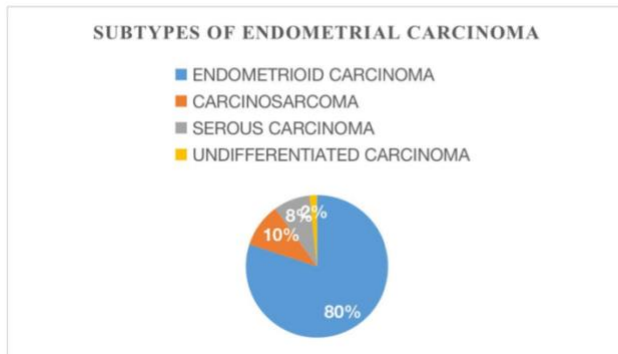


Figure 4. Histopathological subtypes of endometrial carcinoma

Table 1. Age distribution of specimens received

Age (years)	Number of samples (%)
11 to 20	3 (0.2)
21 to 30	266 (13.9)
31 to 40	946 (49.6)
41 to 50	514 (26.9)
51 to 60	115 (6.0)
61 to 70	49 (2.6)
> 70	15 (0.8)

Table 2. Uterine corpus lesions in specimens received

Uterine corpus lesion	Number of samples (%)
<b>Endometrial epithelial tumours and precursors</b>	
Endometrial hyperplasia	156 (8.2)
Endometrial carcinoma	60 (3.1)
<b>Tumour-like lesions</b>	
Endometrial polyp	240 (12.6)
Arias-Stella reaction	3(0.2)
<b>Mesenchymal tumours of the uterus</b>	
Uterine leiomyoma	1326 (69.5)
Uterine leiomyosarcoma	4 (0.2)
Endometrial stromal nodule	1 (0.1)
Endometrial stromal sarcoma	4 (0.2)
<b>Mixed epithelial and mesenchymal tumours</b>	
Adenomyosis	102 (5.3)
<b>Metastasis</b>	
	7 (0.4)
<b>Others</b>	
Suspicious for malignancy	5 (0.3)
<b>Total</b>	<b>1908 (100)</b>

Table 3. Malignant uterine corpus lesions

DIAGNOSIS	NUMBER OF SAMPLES (%)
Endometrial carcinoma	60 (75.0)
Metastasis	7 (8.7)
Suspicious for malignancy	5 (6.3)
Uterine leiomyosarcoma	4 (5.0)
Endometrial stromal sarcoma	4 (5.0)
Total	80 (100)

Table 2 shows the histopathological diagnosis of all uterine corpus lesions received during the study period. Mesenchymal tumours of the uterus, accounted for 70% of uterine corpus lesions seen, most of which were uterine leiomyomas. The most common non-malignant lesions diagnosed were uterine leiomyomas (1326, 69.5%), endometrial polyps (240, 12.6%) and endometrial hyperplasia (156, 8.2%). Figure 3 depicts the non-malignant uterine corpus lesions seen.

The most common malignant diagnosis was endometrial carcinoma seen in 75% (60) of malignant samples. Uterine leiomyosarcoma and endometrial stromal sarcoma were both diagnosed in 5% of malignant samples received. There were 5 specimens which were reported as suspicious for malignancy. The subtypes of endometrial carcinoma diagnosed in the specimens included endometrioid carcinoma (48), carcinosarcoma (6), endometrial serous carcinoma (5) and undifferentiated carcinoma (1). Figure 4 shows the percentage of each endometrial carcinoma subtype.

### Discussion

There was an overall decline in the number of uterine corpus specimens received at the histopathology department of NHA over the years. It may be because of more peripheral centres offering pathology services, which prior to 2009 was mostly done at NHA due to possible personnel and equipment challenges in peripheral centres. On the other hand, it could also be as consequence of a decrease in uterine corpus lesions following early screening and detection of lesions, eliciting appropriate interventions.

The median age of patients with benign lesions was 38 years, and malignant lesions, 60 years. This may not be unrelated to the fact that most benign uterine lesions are hormone dependent, or pregnancy related and as such more common in the reproductive age group. All the uterine malignant lesions seen in this study are more common in the older age group, excluding gestational trophoblastic neoplasia which develops following pregnancy in women of reproductive age<sup>19-21</sup>.

Most of the neoplastic uterine corpus samples received had benign histopathology. Uterine leiomyomas were the most common benign neoplastic lesions in this study. This is consistent with findings in several other studies. Cramer reported multiplicity of leiomyomas in 84% of hysterectomy specimens<sup>22</sup>. Ninety percent of myometrial lesions in a study by Ejiofor et al were leiomyomas<sup>23</sup>. These findings may be in part explained by racial differences in the incidence of uterine fibroids. Black race is advocated to be predominant risk factor for uterine fibroids<sup>4</sup>. However, a growing body of evidence suggest that diet, lifestyle, environmental exposures, and psychosocial stress rather than race are more important contributors to the disparity in the incidence rates of uterine fibroids in black versus white females<sup>24-26</sup>.

Malignant uterine corpus lesions were diagnosed in 2.4% of all uterine samples received and 4.2% of neoplastic uterine corpus samples. This trend is seen in similar studies locally and internationally. In a study in Enugu, Nigeria, malignant uterine corpus lesions accounted for 1% of gynaecological samples<sup>27</sup>. In a retrospective study by Viraj et al, 0.7% of uterine corpus samples had malignant pathology<sup>28</sup>. Uterine corpus malignancies are acknowledged to be the second most common gynaecological malignancies worldwide with over 90 percent being epithelial in origin<sup>29</sup>. Myometrial and endometrial stromal tumours on the other hand, are less common<sup>30</sup>. Endometrial carcinomas were the most encountered malignant neoplasm in this study accounting for 75% of malignant uterine corpus specimens received. On the contrary, in a study in southwestern Nigeria, malignant endometrial neoplasms accounted for only 3.9% of endometrial samples<sup>31</sup>. This may be explained by the fact that GTD was included in the definition of uterine corpus lesions in the study, while we have followed the WHO classification and not included GTD as a uterine corpus tumour. In the study by Okeke et al, endometrial carcinoma was reported in 53% of uterine corpus malignancies although gestational trophoblastic neoplasia was also included in the analysis<sup>27</sup>.

In this study, the endometroid histology was the most reported histology making up 80% of endometrial malignancies. A significant body of knowledge suggest that obesity is an increasingly important risk factor for endometroid carcinoma<sup>32</sup> and may contribute to an increased incidence of this disease in resource-limited countries like Nigeria in the future. Type 2 tumours although rarer, was seen in 20% of patients in this study consistent with available evidence<sup>9,10</sup>. Black women are more likely than other races to develop these tumours and this may contribute to the poorer overall prognosis for black patients with endometrial carcinoma<sup>33</sup>.

## Conclusion

Uterine fibroids are the predominant uterine corpus lesion seen in NHA. Endometrial carcinoma is the commonest

malignant uterine lesion, and the incidence of this disease may rise as a shift in socioeconomic factors impact the subregion. Options now exist for the management of uterine corpus malignancies; however, a paucity of data may impede the development of guidelines and impact the distribution of resources to manage commonly encountered uterine malignancies. Regular audits are encouraged to identify common lesions to guide the education, management, and treatment of patients, with the aim of improving the state of health of women locally and regionally.

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Regular audits are encouraged to identify common lesions to guide the education, management, and treatment of patients, with the aim of improving the state of health of women locally and regionally.

Source(s) of support: None

This paper was presentation at the West African College of Surgeons Annual Scientific Conference, Lomé, Benin Republic, on 22<sup>nd</sup> March 2023

Conflicting Interest (If present, give more details): None.

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