



**ORIGINAL RESEARCH PAPER**

**Histopathology**

**ENDOMETRIAL BIOPSIES PATTERNS AMONG WOMEN ATTENDING MOI TEACHING AND REFERRAL HOSPITAL, KENYA**

**KEY WORDS:** Endometria Biopsies, Histopathological Patterns, Mortality

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**ABSTRACT**

**Background:** Endometrial diseases are among the most common gynecological disorders affecting women both globally and locally; accounting for 60% of global maternal deaths. Kenya is ranked thirteenth out of 181 countries with the highest maternal mortality globally. Endometrial disorders such as hyperplasia's, neoplastic, inflammatory and pregnancy related conditions of the endometrium have been reported to increase with demographic traits such as maternal age and parity.

**Objective:** To determine histopathological patterns of endometrial biopsies among women attending Moi Teaching and Referral Hospital, Kenya.

**Methods:** This was a retrospective laboratory-based study where 121 banked endometrial biopsy blocks collected from participants aged 19 to 70 years between August 2014 and August 2016 were retrieved, re-sectioned and stained using routine histological (Hematoxylin and Eosin) stains in the histology laboratory before being sent to the pathologist for examination. Sociodemographic and reproductive history data were collected from the medical records. Descriptive statistical techniques such as cross-tabulation were used. The median age of all the study participants was 44 years.

**Results:** Most of the study participants (39.2%; n=38) presented with simple endometrial hyperplasia. The endometrial patterns were categorized as Hyperplasias (50.4%; n=61), Inflammatory disorders (7.4%; n=9), Neoplastic Disorders (14.9%; n=18), Pregnancy related disorders (20.7%; n=25) and other patterns (6.6%; n=8)

**Conclusion:** Majority of the study participants presented with simple endometrial hyperplasia followed by complex hyperplasia and adenocarcinoma, respectively.

**INTRODUCTION**

Endometrial diseases are ranked among the most common gynecological disorders that affect women globally and locally (Yu et al., 2015). The histopathological patterns of the endometrium are classified into various categories including: preneoplastic condition: endometrial hyperplasia, inflammatory conditions: chronic endometritis, Pregnancy related conditions: products of conception and molar pregnancy, benign condition: endometrial polyp and malignant conditions (Abdullahi et al., 2016).

Globally, endometrial carcinoma is the fourth most common cancer in women after carcinomas of breast, colorectal, and lung (Braun et al., 2016; Pessoa et al., 2014). Corpus cancer is commoner in developed countries than in developing countries (Kanyilmaz et al., 2016). In 2009, there were 236, 643 cases worldwide, out of which 113,486 occurred in developing countries, representing approximately 48% of the global burden (Fader et al., 2009).

One major problem in developing countries, and especially in sub-Saharan Africa, is the absence of accurate population and health statistics. While in developed countries endometrial carcinoma is the commonest gynecological cancer, in African countries carcinoma of the cervix has been reported in many series to be the commonest, with most of the patients presenting in late stages of the disease.

In Kenya, the true prevalence of endometrial cancer remains largely unknown. However, data from hospitals show that for every 30 cases of cervical cancer reported one case of endometrial cancer will be documented (Odongo et al., 2013). Indeed, the risk of developing endometrial cancer in a lifetime is approximately 2% (Odongo et al., 2013). Although it is not possible to reliably calculate incidence rates for the various cancers, data (January 2008 – December 2012) from a recent retrospective cross-sectional study conducted at Kenyatta National Hospital (KNH) and Moi Teaching and Referral Hospital (MTRH) investigating the types of cancers and infections attributed to them among adult population revealed that 30.8% and 48.2% of the total cancer cases tested in KNH and MTRH, respectively were associated with infectious agents, while 27.6% and 44.4% were linked to infections in the two hospitals, respectively (Macharia et al.,

2018). Additionally, the study showed that the 5 most common cancers among female (n=300) tested at KNH were cervical, breast, ovarian, chronic leukemia, endometrial and stomach, while those registered at MTRH (n=282) presented with breast, cervical, Kaposi's sarcoma, non-Hodgkin's lymphoma and cancer of the ovary (Macharia et al., 2018). The data presented in the study above was collected from randomly selected hospital records of patients.

A recent study from 2 largest referral hospitals (KNH and MTRH) in Kenya report that 48.2% of cancers associated with infectious agents were documented at MTRH, presenting the highest frequency. Although endometrial cancer recorded at MTRH was only 1% compared to 3% at KNH of the types of cancers, the low numbers at MTRH could be attributed to: (i) convenient sampling bias of files (500 from a total of 4,304 files) compared to 500 files from a total of 17,584 files from KNH (Macharia et al., 2018), (ii) and decision to sample randomly selected files rather than investigate all the files available. Irrespective of these limitations, MTRH recorded the highest number of types of cancers investigated and therefore appropriate for investigation of endometrial cancers. It is against this background that the study sought to determine the histopathological evaluation of endometrial biopsies in patients attending Moi Teaching and Referral Hospital (MTRH) in Uasin Gishu County, Kenya.

**MATERIALS AND METHODS**

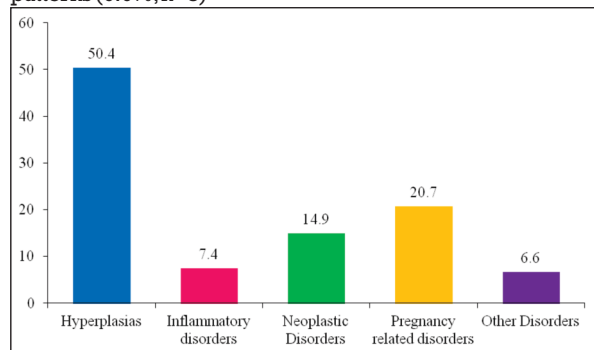
The retrospective study was conducted at the Department of Histopathology of Moi Teaching and Referral Hospital (MTRH), Eldoret, Uasin Gishu County, Kenya. The hospital is situated on the eastern part of the town along Nandi road. It serves as a teaching hospital for Moi University College of health sciences, University of Eastern Africa, Baraton, Kenya Medical Training College, MTRH Training Center and many other tertiary institutions undertaking relevant health sciences courses across the country.

**RESULTS**

**Endometrial Patterns Presenting At MTRH**

One hundred and twenty-one (121) participants were included in this study. The endometrial disorders were categorized as Hyperplasias (50.4%; n=61), Inflammatory disorders (7.4%; n=9), Neoplastic Disorders (14.9%; n=18),

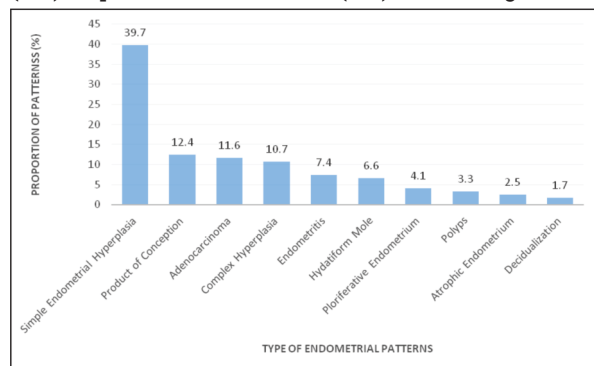
Pregnancy related disorders (20.7%; n=25) and Other patterns (6.6%; n=8)



**Categories Of Endometrial Patterns**

Frequency distribution of endometrial disorders identified among the 121 sampled tissues.

The categories were assigned to specific endometrial patterns. Hyperplasias were either simple (n=48) or complex hyperplasias (n=13). Inflammatory disorder was mainly made up of endometritis (n=9). Neoplastic disorders were either adenocarcinomas (n=14) or polyps (n=4). Pregnancy related disorders were made up of Hydatid-form Mole (n=8); Products of Conception (n=15) and Decidualization (n=2). Other endometrial (physiological) patterns were atrophic (n=3) and proliferative endometrium (n=5) as shown in figure 4.7.



**Types of endometrial patterns.**

The distribution of specific endometrial patterns. Hyperplasia, Inflammatory disorders, Neoplastic Disorders, Pregnancy related disorders and others.

**DISCUSSION**

**Endometrial Biopsies Patterns Among Women Presenting With Back Pain And Endometrial Bleeding**

The study set out to investigate histopathological endometrial patterns on archived specimen isolated from women presenting at Moi Teaching and Referral Hospital in Uasin Gishu County, Kenya. Various patterns were identified on stained tissue sections examined under a light microscope. The study found out that majority of the study participants (31.7%; n=38) presented with simple endometrial hyperplasia. This finding differ from a Nigerian study that investigated the morphological patterns of endometrial biopsies in South-West Nigeria and found that the frequency of endometrial hyperplasia was 6.7% of all the endometrial biopsies reviewed in the study (Abdullahi et al., 2016). The second and third most common endometrial patterns were complex hyperplasia at 10.7% (n=13) and adenocarcinoma at 11.6% (n=14). Complex hyperplasia is a precursor of adenocarcinoma of the endometrium (L. A. Brinton et al., 2005). Several studies have shown atypical endometriosis precede endometrioid ovarian cancers, suggesting that these forms of endometriosis may act as pre-cancerous lesions, as has been shown in the relationship between atypical endometrial hyperplasia and endometrial cancer (Clement et al., 2017; Kurman et al., 1985; Lacey Jr et al., 2010).

The less frequently occurring endometrial patterns were: Hydatidiform mole, Chronic endometritis, polyps, proliferative endometrium, decidualization and atrophic endometrium. The low frequency of these endometrial disorders could be attributed to the fact that, despite the sensitivity of endometrial biopsy to allow accurate diagnosis of endometrial hyperplasia and or carcinomas; endometrial biopsy may fail to detect other uterine pathologies such as submucous leiomyomas. Endometritis and endometrial polyps are benign causes for abnormal uterine bleeding among endometrial disorders.

The majority of endometrial hyperplasia in the present study were classified as simple endometrial hyperplasia, accounting for 78.7% of the hyperplasias. These results are in tandem with reports from different parts of Kenya and Africa that utilized similar study designs and target populations (Dawodu et al., 2017). In previous studies, endometrial hyperplasia in patients investigated for infertility accounted for 3% of cases, with all cases reported being simple endometrial hyperplasia (Louise A Brinton et al., 2005; Shen et al., 2011).

**CONCLUSIONS**

Majority of the study participants presented with simple endometrial hyperplasia followed by complex hyperplasia and adenocarcinoma, respectively in Moi Teaching and Referral Hospital, Eldoret, Kenya.. Simple endometrial hyperplasia was the most common endometrial pattern.

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