

**ORIGINAL RESEARCH**

## **Study of Morphological Patterns of Endometrial Lesions in Derna City – East of Libya**

**Noria Othman Raffalla<sup>1\*</sup>, Amal Fathalla Srgewa<sup>2</sup>**

<sup>1</sup>*Department of Pathology, Faculty of Medicine, University of Derna, Derna, Libya  
E.mail: noriaothman@yahoo.com*

<sup>2</sup>*Department of Pathology, Faculty of Medicine, University of Derna, Derna, Libya  
E.mail: A.Srgewa@uod.edu.ly*

**Corresponding Author\*:** *Dr. Noria Othman Raffalla, Department of Pathology, Faculty of Medicine, University of Derna, Derna, Libya. E.mail: noriaothman@yahoo.com*

**Received:** 13 April 2023

**Accepted:** 16 May 2023

**Published:** 20 June 2023

### **ABSTRACT**

The present work is carried out to study the prevalence of the different histo-pathological patterns of endometrial lesions diagnosed in Derna-City East of Libya in relation to other clinical data. This work included 80 cases of endometrial lesions, out of 208 samples submitted to TheNoor-AL-Huda Medical Center Pathology Laboratory in Derna City –East of Libya during the period between January 2021 and December 2021, specimens were formalin fixed, processed, then H &E sections were obtained for histologic diagnosis and subtyping. Out of the included 80 endometrial lesions (70%) were non –neoplastic and (30%) were neoplastic. The mean age group was 41-50 years for non neoplastic lesions and 51-60 years for neoplastic lesions. Endometrial polyp represented 42.5% of the non neoplastic lesions, while endometrioid carcinoma (Villo-glandular pattern) represented

67



The Author(s) 2023. This article is distributed under the terms of the Creative Commons Attribution 4.0 International License (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium for non-commercial purposes only provided you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license, and indicate if changes were made.

11.5% of the neoplastic lesions. We concluded that non-neoplastic endometrial lesions were more common than neoplastic ones. Among non-neoplastic endometrial lesions endometrial polyps were the commonest, while endometrioid carcinoma (villo-glandular pattern) was the most common neoplastic lesion. Meticulous histopathological examination is essential for accurate diagnosis and proper management of endometrial lesions.

**KEYWORDS:** Component; Formatting; Style; Styling; Insert.

---

## INTRODUCTION

The endometrium is a dynamic organ that repeatedly proliferates and breaks down (Kumar et al. 2010). Abnormalities in this tissue result in abnormal uterine bleeding. Many causes of endometrial bleeding are listed, include chronic endometritis, endometrial polyp, endometrial hyperplasia & endometrial neoplasm (Du et al. 2016). Endometrial hyperplasia embraces a group of lesions with different biological potential.

It is a pathologically heterogeneous diagnosis that ranges from histologically subtle and spontaneously reversible proliferative lesions to incipient carcinoma. The carcinoma that arises in this context is of a relatively good prognosis. Both under diagnosis and over diagnosis are common. Strict criteria and good sampling are required to improve the reproducibility of this diagnosis, particularly because it is used for therapeutic decision making (Zhao et al. 2021).

Expectedly, women in the 21<sup>st</sup> century will experience menarche at a younger age, will typically have fewer children and spend less time breast feeding. This will be accompanied by an increasing demand for drugs that improve the quality of life, for example the use of hormone replacement therapy. All these factors might be associated with a potential increase in the endometrial lesions including the malignancies and their precursors (Vitale et

al. 2021; Silverberg et al. 2007; Huang et al. 2007 ).

## MATERIALS AND METHODS

The material of the present retrospective study will include eighty cases diagnosed as endometrial lesions by H&E stained sections submitted to Noor-AL-Huda Medical Center Pathology Laboratory in Derna City –East of Libya during the period between January 2021 and December 2021. This study will include hysterectomy specimens, as well as dilation & curettage samples with various diagnoses. Only endometrial lesions will be included in this study. Exclusion criteria are: insufficient samples, unavailable clinical information, myometrial lesions and gestational diseases. The studied cases will be subjected to the following:

### *1- Clinical Data Collection*

Clinical data will be collected from the filing system of admitted patient's.

### *2- Histopathologic Examination*

Formalin fixed paraffin embedded blocks of the included 80 cases of endometrial lesions were cut into 5 µm – thick section and stained by H&E, examined by light microscopy for confirmation of the histologic diagnosis.

### *Statistical Analysis*

Data were fed to the computer and analyzed

using IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp) Qualitative data were described using number and percent made must be noted. Information on the equipment model, manufacturer's name and address including the city, province/state and country should be provided. The procedures should be written in the past tense.

without atypia in 12 (15%) cases , followed by endometrial hyperplasia with atypia in 5 (6.25%) , then cystic atrophy of endometrium in 3 (3.75% )cases , then Adenomyosis in 3(3.75%) cases ,and Perforation in 1(1.25%) case. Among neoplastic lesions nine (11.25%) cases were endometrioid carcinoma, followed by one (1.25%) case was non endometrioid carcinoma. (shown in Fig. 1).

**RESULTS AND DISCUSSION**

**Table: (1). Summary of Clinical and Histologic Data of the Studied Cases**

**Clinical Data**

The age of the 80 studied cases ranged between 20 and 86 years with a mean age of 45.7 with a standard deviation 10.8. Fifty six patients were ≤ 50 years (70%) and twenty four were > 50 years (30%). Thirty cases have received previous hormonal treatment.

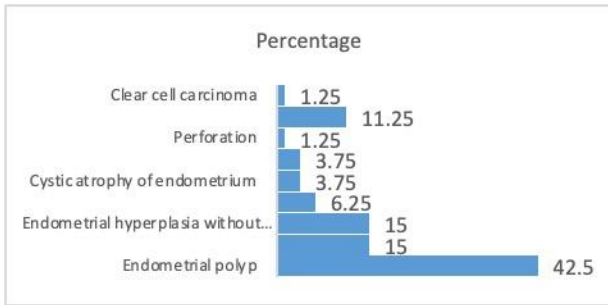
The most common clinical presentation was prolonged vaginal bleeding 31 cases (38.75%) cases followed by menorrhagia 23 cases (28.75%) cases, on and off bleeding 13 cases (16.75)and abdominal pain 7 cases (8.75%).While 6 cases with no specific symptoms (7.5%) samples .D&C specimens were the most commonly received specimens, comprising 66 samples (82.5%) followed by 11 specimens (13.75%) TAH&BSO and 2 specimens (2.5%) of vaginal hysterectomy .

Total abdominal hysterectomy & unilateral salpingo-oophorectomy comprised only 1 specimen (1.25%). Among 80 samples of endometrial lesions, 70(70%) were non – neoplastic and 30 (30%) were neoplastic lesions .The Clinical and histologic data of the studied cases were summarized in (Table 1).

**Histopathologically**

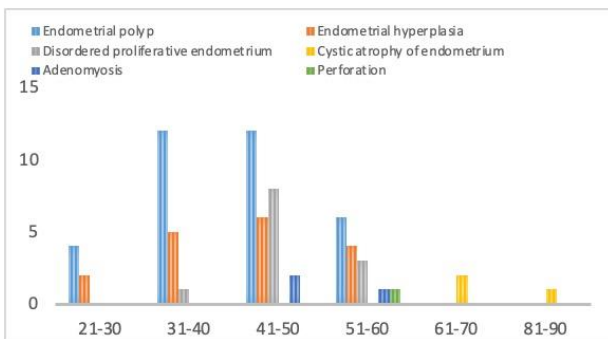
Among non –neoplastic lesions, endometrial polyps was seen in 34(42.5%) followed by disordered proliferative endometrium12 (15%) cases, followed by endometrial hyperplasia

Characteristic	NO	%
Age		
≤50	56	70.0
>50	24	30.0
Types of specimen		
Dilatation &curettage (D&C)	66	82.5
Total abdominal hysterectomy &bilateralsalpingo-oophorectomy (TAH&BSO)	11	13.75
Total abdominal hysterectomy &uni lateral salpingo-oophorectomy	1	1.25
Vaginal hysterectomy(VH)	2	2.5
Clinical presentation		
Prolonged vaginal bleeding (PVB )	31	38.75
Menorrhagia	23	28.75
On-off bleeding	13	16.25
Abdominal pain	7	8.75
No specific symptoms	6	7.5
Type of endometrial lesion		
Non –neoplastic lesions	70	70.0
Neoplastic lesions	10	30.0
Histopathological diagnosis of non–neoplastic lesions		
Endometrial polyp		
Disordered proliferative endometrium	34	42.5
Endometrial hyperplasia without atypia	12	15
Endometrial hyperplasia with atypia	12	15
Cystic atrophy of endometrium	12	15
Adenomyosis	5	6.25
Perforation	3	3.75
	3	3.75
	1	1.25
Histopathological diagnosis of neoplastic lesions		
Endometrioid adenocarcinoma carcinoma		
Clear cell carcinoma	9	11.25
	1	1.25

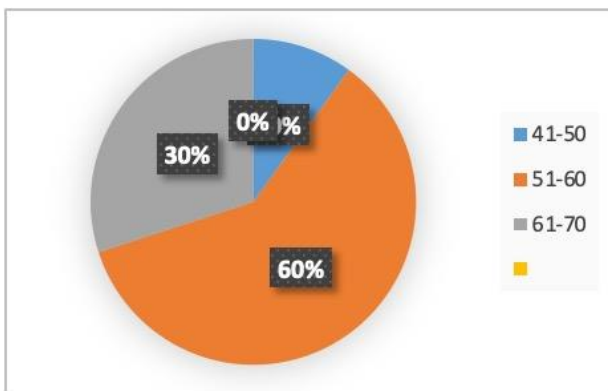


**Figure: (1). Bar Chart Illustrating the Distribution of the Studied Cases according to Histological Type of Endometrial Lesions (n = 80).**

Non-neoplastic endometrial lesions were most commonly seen in the age group 41-50 contributing to 40% (shown in Fig 2). While the neoplastic lesions distribution among age is shown in (Fig. 3); Most common age group affected in malignant endometrial neoplasms was 51-60 (60%) years followed by 61-70 years (30%).



**Figure:(2). Distribution of Non-neoplastic Lesions according to the Age.**



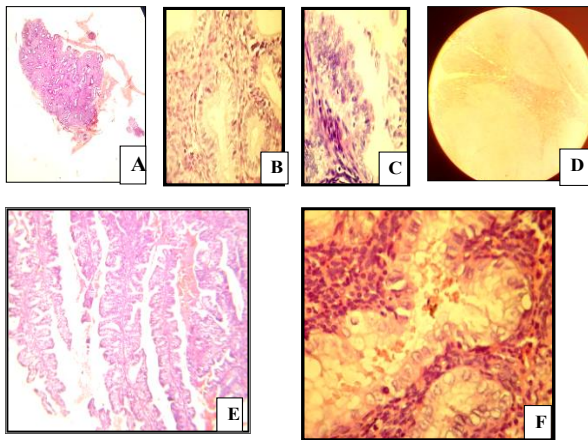
**Figure :(3). Distribution of Neoplastic Lesions according to the Age**

This study is the first to analyze the morphological patterns of endometrial lesions in Derna/Libya. Knowing the histopathological pattern of endometrium lesions offers an early diagnosis of precancerous lesion is crucial in the progression and treatment of condition. In the present study, endometrial biopsies accounted for 80 of the total 208 biopsies received at the Noor-Al-Huda histopathology lab in the period under review from January 2021 and December 2021. All women in the study have health concern as the biopsies were taken to confirm the cause of their symptoms. For instance, abnormal uterine bleeding at any age is a worrisome symptom. Postmenopausal bleeding is of special concern because it is the clinical indication of the presence of endometrial malignancies. The most common clinical presentation was bleeding about (83.75 %) of the patients, it includes prolonged Vaginal bleeding (38.7%), followed by menorrhagia (28%), on and off bleeding (16.25 %). The abnormal uterine bleeding is caused by several factors ranging from infection to cancer, and could be due to insertion of intra uterine device.

We found that, the most common histological diagnostic category with the study population was non-neoplastic endometrial lesions, which are accounting for 87.5 % of the cases, the highest percentage was within age group 41-50 years old. Within this percentage; the endometrial polyps represent 42 % of the examined biopsies. However, histological examination of the specimens, Srinivas et al revealed a lower percentage 18.2 % in approximate of the cases (Srinivas et al. 2020).

Endometrial hyperplasia is essential to be diagnosed as some types of hyperplasia considered as the endometrial cancer precursors. Endometrial hyperplasia represents 21.25% of the examined endometrial biopsies; 15 % was without atypia and 6.25 % with atypia. Similarly reported in other research study as they claimed that 22.6% of the cases

in the study were hyperplasia; those which are diagnosed as simple hyperplasia accounting for 15.6%, complicated hyperplasia accounting for 3.3%, and hyperplasia with atypia accounting for 2.6% of the samples (Karim et al. 2022). However, in regard of hyperplasia with atypia our result was approximately two times higher. Comparing with previous studies, a significantly higher figure of 87% has been reported as simple endometrial hyperplasia in previous study from Nigeria (Abdullahi et al. 2016), and slightly elevated percent as 24.7% reported by Muzaffar et al (2005) and 30.3% in another study (Al-Neaimy et al. 2010). On the other hand, a lower percentage of 17.58% was observed to be endometrial hyperplasia Batool et al (2021). In the research conducted by Abid and colleagues (Abid et al. 2014 ), the endometrial hyperplasia was present in significantly lower percentage than our study as 5% of cases complaining of abnormal uterine bleeding and the incidence was most common in the postmenopausal and Perimenopausal age group.



**Figure:(4). H&E staining ;Endometrial polyp cases. – Ax40, ,case of endometrial hyperplasia without atypia showing glands in back to back arrangement and a lining of tall columnar epithelium (Bx100), Endometrial hyperplasia with atypia C x100, Adenomyosis Dx40,Endometrioid carcinoma( villoglandular pattern ) Ex100 -A case of CCC showing large vesicular nuclei with prominent nucleoli and clear cytoplasm( Fx400).**

Moreover, in our research 3.75 % of the examined specimens was diagnosed as atrophic endometrium, similar result was reported 3.3% of the samples in previously conducted research (Srinivas et al. 2021).Histological findings included chronic endometritis (1.6 % of patients) and atrophic endometrium (3.2 % of patients) (Karim et al. 2022).

Regarding neoplastic endometrial lesions in our study, cancerous lesions were representing 12.5 % of the cases, among which Endometrial adenocarcinoma and Clear cell carcinoma accounted for 11.25 % and 1.25 % of specimens, respectively. The malignant endometrial neoplasms were mainly 60% of the cases within the age group 51-60 years. On other hand, Kumari and his colleagues (Kumari et al. 2019) conducted a study in India and stated lower figure that of 7.14% of the examined cases in their study were endometrial carcinoma

In the study of Dhakhwa et al, out of the total of 613 endometrial specimens received and processed during the review period, only 15 cases of uterine malignancies were detected (Dhakhwa et al. 2021).

Among 1884 gynecological specimens which were examined for the endometrial histopathology, they found that 29 specimen was diagnosed as endometrial malignancy which considered as 1.5 % (Thirukumar et al. 2021).

We can notice that the percentage of the non-neoplastic lesions in our study is similar to what have been reported in the literature, however, a higher incidence of malignant lesions was reported in our study when compared to the literature that could be due to life style, use of oral contraceptive. The discrepancy among these results might be attributed to the fewer number of cases included in the present study.

## CONCLUSION

In this present study, we conclude that, the functional endometrial changes account for the highest morphological patterns of endometrial lesions while malignant lesions account for a lower percentage of the endometrial biopsies examined. This present work will help in ensuring diagnosis of endometrial lesions in our developing country where adequate facilities are not available. However this is the first study to conduct and further studies on larger number of patients are needed to clarify the possible link

## ACKNOWLEDGEMENT

The author of this manuscript would like to express the deepest gratitude to all who helped us and appreciate their unforgettable support as well as their generous efforts in the appearance of this work

## ETHICS

The retrospective study; confidentiality of records is considered and approved from ethics committee before work conduction.

## REFERENCES

- Abdullahi, Y. M., Ajani, M. A., Iyapo, O., Aramide, K. O., Okolo, C. A., & Akang, E. E. U. (2016). Morphological pattern of endometrial biopsies in southwestern Nigeria. *Annals of Ibadan Postgraduate Medicine*, **14**(2), 103-109.
- Abid, M., Hashmi, A. A., Malik, B., Haroon, S., Faridi, N., Edhi, M. M., & Khan, M. (2014). Clinical pattern and spectrum of endometrial pathologies in patients with abnormal uterine bleeding in Pakistan: need to adopt a more conservative approach to treatment. *BMC Women's Health*, **14**(1), 1-7.
- Al-Neaimy, W. M. T., Ahmed, M. T., & Al-Jawadi, S. I. (2010). Histopathological Interpretation of Abnormal uterine bleeding after the age of 40 year. *Iraqi Postgrad Med J*, **9**(3), 274-82.
- Batool, K., Kadir, S., Fatima, K., Nadeem, A., & Talpur, Z. (2021). Endometrial hyperplasia over 45 years old female present with complain of abnormal vaginal bleeding. *Journal of The Society of Obstetricians and Gynaecologists of Pakistan*, **11**(1), 10-13.
- Dhakhwa, R., Bhattarai, R., Shah, J., Shakya, A., & Pradhan, S. (2021). Benign Histopathologic Findings of Endometrium among Perimenopausal Women presenting with Abnormal Uterine Bleeding: A Descriptive Cross-sectional Study. *JNMA: Journal of the Nepal Medical Association*, **59**(243), 1141.
- Du, J., Li, Y., Lv, S., Wang, Q., Sun, C., Dong, X., ... & Li, Q. (2016). Endometrial sampling devices for early diagnosis of endometrial lesions. *Journal of cancer research and clinical oncology*, **142**, 2515-2522.
- Huang, Z. H., Zuo, Y. W., Wen, A. M., & Luo, H. Q. (2007). Endometrial carcinoma in patients below 45 years of age: clinical analysis of 53 cases. *Nan Fang yi ke da xue xue bao= Journal of Southern Medical University*, **27**(12), 1955-1957.
- Karim, Z., Afridi, A., Khan, M., Sabah, S., Orakzai, S. A., & Ahmad, S. (2022). Study of Endometrium's Histopathological Pattern in Abnormal Uterine Bleeding. *Pakistan Journal of Medical & Health Sciences*, **16**(02), 732-732.
- Kumar, V. Abbas, A . K . Fausto, N. ( 2010). *The Female Genital Tract* ,In Robbins S.L

.Cortan R.S (Eds.), *Pathologic Basis of Disease* (pp 1059-1114) . Saunders Elsevier Publisher USA .

Kumari, A., Pankaj, S., Choudhary, V., Kumari, J., Nazneen, S., Kumari, A., ... & Kumar, S. (2019). Ultrasonic and histopathological evaluation to exclude premalignant and malignant lesions in perimenopausal and postmenopausal women presenting as abnormal uterine bleeding. *The Journal of Obstetrics and Gynecology of India*, **69**, 171-176.

Muzaffar M, Akhtar KA, Yasmin S, Rehman M, Iqbal W, Khan MA. 2005. Menstrual irregularities with excessive blood loss: a clinico-pathological correlation. *JPM* **55**(11):486.

Silverberg, S. G. (2007). The endometrium: Pathologic principles and pitfalls. *Archives of pathology & laboratory medicine*, **131**(3), 372-382.

Srinivas SB, Kubakaddi SS, Poliseti S, Amber S, Guruvare S, Pai MV. 2020. A novel risk-scoring model for prediction of premalignant and malignant lesions of uterine endometrium among symptomatic premenopausal women *Int J Womens Health* **12**:883.

Thirukumar, M., & Sinnathurai, A. (2021). Gynaecological malignancies among a representative population of Batticaloa, *Sri Lanka. Cureus*, **13**(1).

Vitale, S. G., Haimovich, S., Laganà, A. S., Alonso, L., Sardo, A. D. S., Carugno, J., & From the Global Community of Hysteroscopy Guidelines Committee. (2021). Endometrial polyps. An evidence-based diagnosis and management guide. *European Journal of Obstetrics & Gynecology and Reproductive*

*Biology*, **260**, 70-77. *ObstetGynecolReprod Biol* **260**:70-77.

Zhao, J., Hu, Y., Zhao, Y., Chen, D., Fang, T., & Ding, M. (2021). Risk factors of endometrial cancer in patients with endometrial hyperplasia: implication for clinical treatments. *BMC Women's Health*, **21**(1), 1-6.

## المخلص

دراسة لأفات بطانة الرحم التي شُخصت في مدينة درنة، شرق ليبيا، وعلاقتها بالبيانات السريرية الأخرى. شملت هذه الدراسة 80 حالة من آفات بطانة الرحم، من أصل 208 عينات أرسلت إلى مختبر علم الأمراض في مركز نور الهدى الطبي بمدينة درنة، شرق ليبيا، خلال الفترة من يناير 2021 إلى ديسمبر 2021. تُبنت العينات بالفورمالين، ثم عُولجت، وأخذت منها شرائح مصبوعة بصبغة الهيماتوكسيلين والإيوسين للتشخيص النسيجي والتصنيف الفرعي. من بين الآفات الـ 80 المُدرجة، كانت 70% منها غير ورمية، و30% ورمية. تراوح متوسط عمر المرضى بين 41 و50 عامًا للآفات غير الورمية، وبين 51 و60 عامًا للآفات الـ ورمية. مثلت سلائل بطانة الرحم 42.5% من الآفات غير الـ ورمية، بينما مثل سرطان بطانة الرحم الغدي (النمط الزغابي الغدي) 11.5% من الآفات الـ ورمية. خلصنا إلى أن آفات بطانة الرحم غير الـ ورمية أكثر شيوعًا من الأورام. ومن بين آفات بطانة الرحم غير الـ ورمية، كانت سلائل بطانة الرحم هي الأكثر شيوعًا، بينما كان سرطان بطانة الرحم الغدي (النمط الزغابي الغدي) هو أكثر الأورام شيوعًا. يُعد الفحص النسيجي المرضي الدقيق ضروريًا للتشخيص الصحيح والإدارة السليمة لآفات بطانة الرحم.

**الكلمات المفتاحية:** مكون، تنسيق، نمط، تصميم، إدراج .

