ORIGINAL RESEARCH PAPER
Volume-8 | Issue-11 | November - 2019 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

CLINICOPATHOLOGICAL SPECTRUM OF ENDOMETRIAL BIOPSIES IN A TERTIARY CARE CENTER

Pathology

Kavita Sharma* Govt. medical college, Kota (Rajasthan) *Corresponding Author

Akta Rasania Govt. medical college, Kota (Rajasthan)

ABSTRACT

Background: Examination of endometrial biopsy is a challenge to practicing pathologists, largely due to the wide range of morphologic patterns resulting from both normal and abnormal changes, exogenous hormones, infections and intrauterine tumor. The clinical differential diagnosis is different for various age groups and histopathological examination of material obtained on endometrial curettage helps in diagnosis.

Material and Methods: The study was conducted in the histopathology section of the Department of Pathology GMC, Kota. Study material included all endometrial curettings received in the histopathology section.

Results: In this study maximum number of cases were in age group 41-50 years i.e. (37.26%).Various patterns on histopathology were secretory endometrium (43.56%), the commonest followed by Proliferative pattern of endometrium(18.63%), Disordered proliferative phase(10.95%), Endometrial polyp (2.73%), Endometrial hyperplasia (5.47 %),Pregnancy related complications (7.39%), Endometritis (1.09%) , Arias Stella reaction (3.01%), and inability to conceive. (5.75%). Malignancy was seen in 3.83% cases.

Conclusion: Gynaecologic histopathology form a significant proportion of workload of the surgical pathology laboratory in our institute with commonest complain of menstrual disorders. Histological characteristics of endometrial biopsy as assessed by light microscopy remains the gold standard for the clinical diagnosis of endometrial pathology as well as for early evaluation of infertility.

KEYWORDS

INTRODUCTION:

The endometrium is a dynamic hormonally sensitive and responsive tissue uniquely endowed throughout the female reproductive life span with complex regular cycle of periodic proliferation, differentiation, break down and regeneration.[1]

Endometrial biopsies and curettings are among the most common tissue specimens received for histopathological evaluation. Representative endometrial specimens can be received following varieties of correctly timed endometrial sampling techniques in which Dilatation and curettage is a useful and cost effective method for detection of intrauterine pathologies.[2]

Endometrial curettings and biopsies exhibit a wide range of histopathological patterns due to normal and abnormal cyclical changes, drugs, hormones, infections and malignancies, thus posing a challenge to practicing pathologists.[3]

Histopathological diagnosis of endometrium samples varies according to the age with increased risk of endometrial hyperplasia and endometrial carcinoma is in peri-menopausal and post-menopausal women[4] while in younger age groups, changes related to hormonal effects seems to be more common, so early evaluation of the perimenopausal and postmenopausal women is essential to confirm the exact nature of the lesion and to rule out malignancy.

Endometrial biopsy is equally important in evaluating patient for infertility. The dating of the endometrium by its histological appearance is helpful clinically to document ovulation, assess hormonal status and determine cause of endometrial bleeding and infertility.[5]

Histological characteristics of endometrial biopsy as assessed by light microscopy remains the gold standard for the clinical diagnosis of endometrial pathology. So the purpose of this study is

to evaluate clinicomorphological spectrum of endometrial lesions in biopsies obtained by dilatation and curettage in females of all age groups.

MATERIAL & METHOD:

This two year retrospective study, was done in the department of pathology, Govt medical college, Kota (Rajasthan), a tertiary care centre, which included 365 endometrial samples, fulfilled the inclusion criteria of the study, received in the department of pathology, Govt. medical college and hospital, Kota from 1 January 2015 to 31 December 2016.The samples were received as endometrial curettage (D & C samples) were included and Hysterectomy specimens were excluded.

Patients of all age groups were included. Concise history regarding age, history of OCPs, presenting complains including menstrual disturbances, infertility, vaginal discharge and duration of symptoms was collected from the histopathological requisition form.

All specimens were fixed in 10% formalin. After detailed gross examination, paraffin blocks of tissue were made; sections were cut and stained with hematoxylin and eosin. Histopathological examination of endometrial biopsies and hysterectomy specimens were done, followed by clinical correlation.

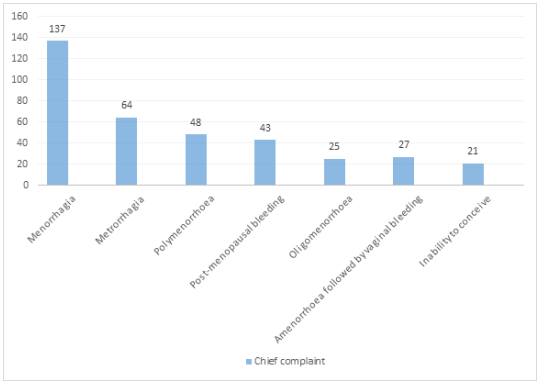
Table 1: Pattern of distribution of histopathological findings:

Histopathological Findings	No	%
Secretory endometrium	159	43.56
Proliferative endometrium	68	18.63
Disordered proliferative phase	40	10.95
Exogenous hormonal effect	12	3.28
Arias Stella reaction	11	3.01
Molar pregnancy	27	7.39
Endometrial polyp	10	2.73
Endometritis	4	1.09
Endometrial Hyperplasia	20	5.47
Endometrial Carcinoma	14	3.83
Total	365	100

Table 2: Comparison of histopathological findings in various age groups:

Histopathological diagnosis	<40 Years		41-50 Years		>50 Years	
	No	%	No	%	No	%
Proliferative endometrium	33	17.09	28	20.58	7	19.44
Secretory endometrium	96	49.74	57	41.91	6	16.66
Disordered proliferative phase	13	6.73	22	16.17	5	13.88
Exogenous hormonal effect	7	3.62	5	3.67	0	0
Arias Stella reaction	8	4.14	3	2.20	0	0
Endometrial polyp	4	2.07	2	1.47	4	11.11
Molar pregnancy	27	13.98	0	0	0	0
Endometrial hyperplasia	4	2.07	13	9.55	3	8.33
Endometritis	1	0.51	0	0	3	8.33
Endometrial carcinoma	0	0	6	4.41	8	22.22
Total	193	100	136	100	36	100

Graph 1: Clinical spectrum of the cases.



Images:

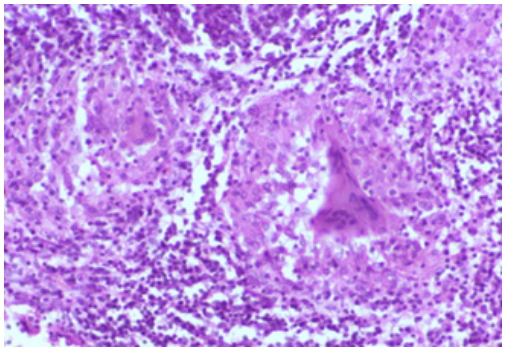


Figure:1 Tubercular Endometritis- granuloma containing Giant cells in the centre. (H & E stain 200x)

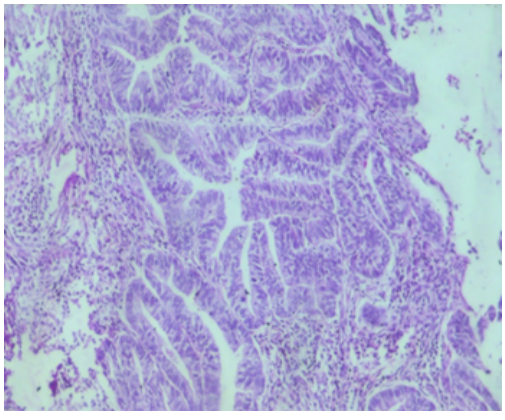


Figure2: Endometriod Adenocarcinoma ; Grade 1; Well-differentiated glands display a confluent glandular pattern with surrounding desmoplastic stroma. (H & E stain 100x)

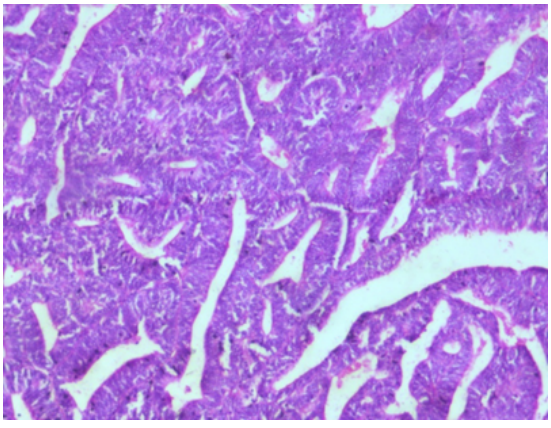


Figure 3: Endometriod Adenocarcinoma; Grade 2; showing glandular pattern with nuclear atypia. . (H & E stain 200x)

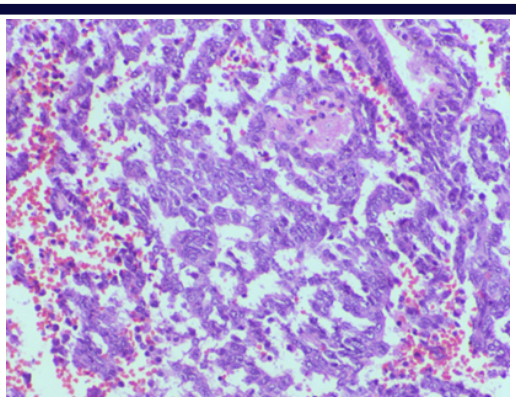


Figure 4 Endometriod Adenocarcinoma; Grade 2; showing solid growth pattern. . (H & E stain 100x)

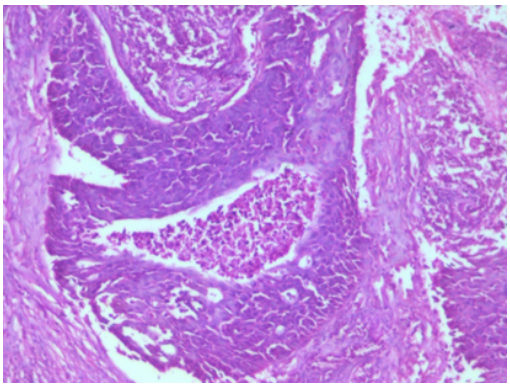


Figure5: Poorly differentiated adenocarcinoma; Grade 3; showing solid pattern of growth with central necrosis. . (H & E stain 100x)

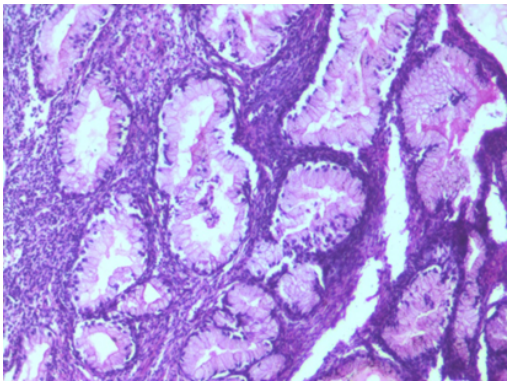


Figure6a: Endometriod adenocarcinoma; showing Mucinous differentiation. (H & E stain 100x)

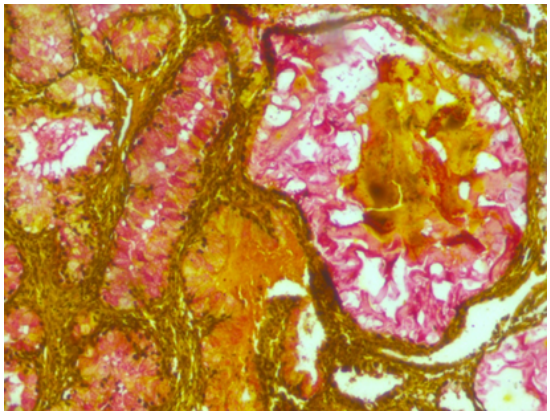


Figure6b: Endometriod adenocarcinoma; Mucinous differentiation; showing positivity with special stain Mucincarmine. (200x)

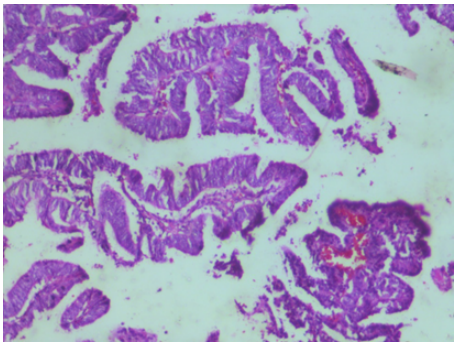


Figure7: Papillary adenocarcinoma; showing neoplastic cells arranged in papillae .(H & E stain 100x)

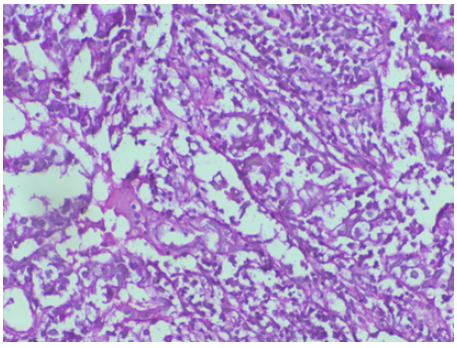


Figure8: Clear cell adenocarcinoma; showing clear cells with nuclear pleomorphism. (H & E stain 200x)

RESULT & DISCUSSION:

The endometrium is a remarkably dynamic tissue which undergoes regular cyclical changes in response to the recurrent hormonal changes of the ovulatory cyclesand also undergoes a plethora of changes, by the complex interplay of endogenous sex steroids and other systemic as well as iatrogenic factors[6]

Spectrum of common pathologies that can be detected by histological examination of endometrium, include hormonal imbalance pattern (disorderly proliferative endometrium, non-secretory endometrium with stromal and glandular breakdown, luteal phase defect and pill effect) atrophic endometrium, endometritis, endometrial polyp, endometrial hyperplasia and endometrial carcinoma[7]

Thus endometrial assessment is performed to diagnose malignancy or pre-malignant conditions and to evaluate the hormonal influences of the endometrium.

The aim of the present study was to determine the clinical spectrum and frequency of pathologies in endometrial samples of patients in our population.

A total of 365 endometrial samples were assessed. We observed that age was directly associated with increasing aggressiveness of lesions since more progressive lesions were found in peri and postmenopausal age group as compared to reproductive age group and occurrence of menstrual disorders increases with advancing age. In our study the maximum number of cases were seen in 41–50 years of age group (37.26%).

Our study showed a wide clinical spectrum of cases. The most common clinical complain in the present study was menorrhagia (37.53%), followed by Metrorrhagia (17.53%), which is

comparable with the studies done by Odeta Hoxhaj et al[8] (44%) and Muzaffar M et al[9] (51.9%).

The most common histological diagnostic category was Normal cyclic endometrium (62.19%) and it is most common pattern observed in young (<40 years) and middle age group (41-50 years) of patients in our study which is similar to previous study from Ilorin et al[10], (67.6%) and Aruna Kumari Pagalla et al[11] (60%) and it is much higher as compared to study done by Doraiswami Saraswathi et al[12] (28.36%).

Secretory endometrium was the dominant histopathological pattern (43.56%), followed by Proliferative pattern of endometrium.

Disordered proliferative phase was the next common diagnostic finding in our study, (10.95%) and it was the dominant histopathological pattern seen in 41-50 year of age group. Similar incidence was found in other studies, Sajitha K et al[13], (12.2%) and Saadia A et al[14] (10%).

Endometrial polyp was observed in 2.73% cases and commonly seen in >50 year of age group (11.11 %.), similar to the studies of Odeta Hoxhaj et al[8] (13.1%) and others, found increasing trend of endometrial polyp with increasing age and most commonly in postmenopausal group.

Endometrial hyperplasia is the precursor of carcinoma and usually presents with abnormal uterine bleeding. Identification of endometrial hyperplasia is important because they are thought to be precursors of endometrial carcinoma. We observed endometrial hyperplasia in 5.47% participants, out of those 90% showed hyperplasia without atypia and 10%with atypia with maximum cases were found in the middle age group (9.55%), and both cases with atypia were seen in > 50 years of age group.

It is Similar to the study done by Doraiswami Saraswathi et al [12] and Farquhar CM et al[15]also found the same lower incidence of endometrial hyperplasia in their studies, respectively 6.11% and 4.33%.While few studies have reported a high incidence with 24.7% (Muzaffar M et al)[9] and 26 % (Riaz et al)[16]respectively.

In the present study, Malignancy was seen in 14 cases (3.83%), most commonly in >50 years of age group (57.14%) followed by 41-50 years of age group (42.85%).

The incidence of endometrial carcinoma is comparable to other studies where Similar low incidences have been obtained, including studies by Dadhania et al (2.6%)[17] Vaidya et al (2.4%)[18] Baral et al[19] and by Abid et al[20] (2%), except a study conducted in Chinese population which showed a high incidence of 50%[21.]

All these studies have Asian women as subjects, and reflect and overall lower incidence of endometrial carcinoma in the east, compared with the west due to early childbearing, lesser obesity and a more active life style compared with the west.

The predominant type of endometrial carcinoma was Endometrioid type along with most common presentation of postmenopausal bleeding and with incidence of 27.90%. In the patients present with postmenopausal bleeding. We also had one case each of Papillary serous carcinoma, Clear cell carcinoma, Mucinous adenocarcinoma and Poorly differentiated carcinoma.

In our study, pregnancy related complication was found in 27 cases (7.39%), which included only molar pregnancy with partial mole in 26 cases and 1 case of complete mole. The incidence is very low as compare to other studies due to exclusion criteria.

In our study endometritis was seen in total of 4 (1.09%) cases, 2 were of chronic endometritis and 2 were of Tubercular endometritis, presented with infertility and postmenopausal bleeding, In our study, pill endometrium was seen in only 2 cases. Other studies also reported a lower incidence[14,17.]

Arias Stella reaction was observed in 3.01% cases, with predominance was seen in younger age group.

Out of 365 endometrial biopsies studied,(5.75%) presented with complaints of inability to conceive, included (66.66%) patients with primary infertility, and 7(33.33%) patients with secondary infertility along with different histological patterns, included secretory endometrium(38.09%), proliferative (anovulatory) endometrium (57.14%) and tubercular endometritis (4.76%.)These findings are similar to the results of the studies done by Puneet Kaur et al[22]and Sharma V et al[23]With predominantly histological pattern of proliferative endometrium (anovulatory) followed by secretory endometrium and tubercular endometrium.

Female genital tract tuberculosis (FGT) as a cause of infertility is

uncommon in developed countries but one of the commonest causes of infertility in developing countries so idiopathic cases should be investigated for tuberculosis.

In our study, 11.78% patients presented with postmenopausal bleeding, out of which maximum patients (72.09%) were between 51-60 years, with most common histopathological finding of endometrial carcinoma, (27.90%,).This is similar to the study of Syeda Sitwat Fatima et al[24], found Endometrial carcinoma accounted for 30.5% cases of postmenopausal bleeding and study of Dangal G[25]et al (17.6%.).

As post-menopausal bleeding is the commonest symptom of endometrial carcinoma, hence patients presenting with it should be worked up on priority basis for early detection and management of endometrial carcinoma.

CONCLUSION:

We concluded that Gynaecologic histopathology form a significant proportion of workload of the surgical pathology laboratory in our institute with commonest complain of menstrual disorders. Endometrial sampling by dilatation and curettage is an effective and reliable diagnostic test. Its interpretation can be quite challenging and also may show considerable inter-observer variability. Clinical informations regarding age, menstrual history, parity, and imaging studies are important prerequisites in the interpretation of endometrial samples. As Endometrial lesions vary according to the patient's age, the causes of bleeding in peri-menopausal and post-menopausal age group should be thoroughly investigated as large incidence of malignancies are found in this age group. Histopathological study of endometrium also forms an important, safe and cheaper diagnostic tool in cases of primary and secondary infertility.

REFERENCES:

1. Tavassoli FA, Devilee P editors, Tumours of the uterine corpus. In: WHO classifications of tumours. Pathology and genetics of tumours of the breast and female genital organs. Lyon France: IARC press. 2003:221-32.
2. Goldstein SR. Menorrhagia and abnormal bleeding before the menopause. Best Pract Res ClinObstetGynaecol 2004;18:59-69.
3. Samson S-L, Donna G. Who needs an endometrial biopsy? Can Fam Physician 2002;48:885-887.
4. Kumar A, Mittal S. Endometrial sampling: How? & why? Obs and Gynae Today- 2007; 12 (6) :284-87.
5. Kafeel S, Mushtaq H, Alam S. Endometrial histological findings in infertile women. J Islamabad Med & Dental Coll 2102;2:61-64
6. Crum CP, Hornstein MD, Nucci MR, Mutter GI. Hertig and beyond: a systematic and practical approach to the endometrial biopsy. AdvAnatPathol. 2003 Nov;10(6):301- 18.
7. Longacre T, Atkins K, Kempson R, Hendrickson M: The uterine corpus. In Sternberg's Diagnostic Surgical Pathology. Lippincott William & Wilkins; 2005:2184–2277 .
8. Odeta Hoxhaj et al Histopathological Pattern of Endometrium in Abnormal Uterine Bleeding; International Journal of Science and Research (IJSR); Volume 4 Issue 11, November 2015.
9. Muzaffar M, Akhtar KA, Yasmin S, Mahmood-Ur-Rehman, Iqbal W, Khan MA. Menstrual irregularities with excessive blood loss: A clinicopathological correlation. J Pak Med Assoc 2005;55:486-9.
10. Ojo BA, Aboyeji PA, Buhari MO. Endometrial pathology in a teaching hospital in north central Nigeria: A histopathological survey. Nig J Health Biomed Sci. 2005; 4:107-111.
11. Aruna Kumari Pagalla et. al; Study of Histopathological changes of Endometrium in Abnormal Uterine Bleeding; Journal of Chalmeda Anand Rao Institute of Medical Sciences Vol 12 Issue 2 July - December 2016.
12. Doraiswami Saraswathi •et al; Study of Endometrial Pathology in Abnormal Uterine Bleeding The Journal of Obstetrics and Gynecology of India (July–August 2011) 61(4):426–430.
13. Sajitha, et al.: Endometrial pathology in AUB; CHRISMED Journal of Health and Research /Vol 1/Issue 2/Apr-Jun 2014.
14. Saadia A, Mubarik A, Zubair A, Jamal S, Zafar A. Diagnostic accuracy of endometrial curettage in endometrial pathology. J Ayub Med Coll Abbottabad 2011;23:129-31.
15. Farquhar CM, Lethaby A, Sowter M, Verry J, Baranyai J. An evaluation of risk factors for endometrial hyperplasia in premenopausal women with abnormal menstrual bleeding. Am J ObstetGynaecol 1999;181:525 9.
16. Riaz S, Ibrar F, Dawood NS, Jabeen A. Endometrial pathology by endometrial curettage in menorrhagia in premenopausal age group. J Ayub Med Coll Abbottabad 2010;22:161-4.
17. .Dadhania B, Dhruva G, Agravat A et al. Histopathological study of endometrium in dysfunctional uterine bleeding. Int J Res Med 2013;2(1):20-24.
18. Vaidya S, Lakhey M, Vaidya S et al. Histopathological pattern of abnormal uterine bleeding in endometrial biopsies. Nepal Med Coll J 2013;15(1):74-77.
19. Baral R, Pudasaini S. Histopathological pattern of endometrial samples in abnormal uterine bleeding. J Path Nepal 2011;1:13-16.
20. Abid et al. oBMCWmen's Health 2014, 14:132 Page 2 of 7 http://www.biomedcentral.com/1472-6874/14/132
21. Feng Y; Clinical analysis in 56 cases of P/V bleeding, HeBei Medical Journal, 1989; 12:178-181
22. Puneet Kaur et al. A two year histopathological study of endometrial biopsies in a teaching hospital in Northern India; Indian Journal of Pathology and Oncology, July-September 2016;3(3);508-519.
23. Sharma V, Saxena V, Khatri SL (2016) Histopathological Study of Endometrium in Cases of Infertility. J Clin Exp Pathol 6: 272.
24. Syeda Sitwat Fatima et al; POSTMENOPAUSAL BLEEDING-AN ALARMING SYMPTOM OF ENDOMETRIAL CARCINOMA; J. Med. Sci. (Peshawar, Print) October 2014, Vol. 22, No. 4: 166-170.
25. Dangal G. A study of endometrium in patients with abnormal uterine bleeding at Chitwan valley. Kathmandu University Medical Journal. 2003; 1(2):110-12.