

Histopathological study of endometrial lesions in tertiary care hospital

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Abstract

Objective: To study the clinico-pathological aspects and the histo-pathological patterns of endometrial lesions. **Methodology:** Study includes hysterectomy specimens, dilatation & curettage samples (D&C) and biopsies, received to the department of pathology. **Results:** Total 542 endometrial samples were received in department of Pathology during September 2013 to September 2015. Out of 542 endometrial samples, 131 are endometrial lesions. Among 131 endometrial lesions, 115 are non-neoplastic while 16 are neoplastic lesions. Most common age group for non-neoplastic lesions is 41-50 years while for neoplastic lesions it is about 51-60 years. Adenomyosis the most common (11.99%) non-neoplastic lesion while endometrioid adenocarcinoma (46.67%) is most common neoplastic lesion. **Conclusion:** In present study, non-neoplastic lesions were more common out of all endometrial lesions. Among neoplastic lesions malignant lesions were more common than benign lesions; histopathology is important for ensuring diagnosis and deciding management, particularly for malignant diseases.

Keywords: Histopathology, Endometrium, Lesions, Non-neoplastic, Neoplastic

Introduction

The internal cavity of the uterus is lined by the endometrium, composed of glands embedded in a cellular stroma [1]. The function of the normal endometrium is to produce a satisfactory substrate in which a healthy blastocyst may implant and flourish [2]. During active reproductive life, the endometrium is in a dynamic state of proliferation, differentiation and shedding, in the preparation for implantation of an embryo. This cycle is exquisitely controlled by the rise and fall of pituitary and ovarian hormones.

Abnormalities in this system result in abnormal uterine bleeding. Various causes of abnormal uterine bleeding are chronic endometritis, endometrial polyps, sub mucosal leiomyoma's and endometrial neoplasms. The largest single group encompasses functional disturbances, referred to as dysfunctional uterine bleeding. "Dating" the endometrium by its histologic appearance is often used clinically to assess hormonal

status, document ovulation, and determine causes of endometrial bleeding and infertility [1,3]. Endometrial biopsy is a currently preferred alternative to dilatation and curettage [D&C] for the evaluation of infertile or dysmenorrheic patients.

In addition, this procedure has become the choice method for the initial approach to patients with suspected endometrial hyperplasia or carcinoma [4].

Accurate histopathological diagnosis is important in the management of endometrial conditions and lesions [5].

Material & Methods

Type of Study- Prospective observational and descriptive study

Place of study- Department of Pathology, SRTRGMC Ambajogai.

Duration of Study- Two year's duration from 2nd September 2013 to 1st September 2015.

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Sample Collection & Methods- In this study, we will include hysterectomy specimens, dilatation & curettage samples (D & C) and biopsies coming to the department of Pathology with various diagnoses like chronic endometritis, hormonal changes in infertility, endometrial polyps, adenomyosis and other benign & malignant endometrial lesions. Complete clinical

history and related investigations will be taken into account according to provided proforma.

Inclusion Criteria: - Histopathological study of Endometrial lesions only.

Exclusion Criteria: - Gestational Trophoblastic diseases & Myometrial lesions are excluded.

Results

Clinico-histopathological study of endometrium in 542 cases was done.

Table-1: Distribution of types of surgical specimen received in the present study:

Types of specimen	Number of specimens	Percentage (%)
Dilatation & curettage [D&C]	130	23.98
Hemi hysterectomy	02	0.36
Lower segment caesarean section [LSCS] with hysterectomy	01	0.18
Total abdominal hysterectomy [TAH]	255	47.05
Total vaginal hysterectomy [TVH]	154	28.43
Total	542	100

TAH specimens were the most commonly received specimens, comprising 255 (47.05%) samples, followed by 154 (28.43%) TVH samples and 130 (23.98%) D & C samples. In two cases of uterine didelphi, 2 (0.36%) hemi-hysterectomy specimens were received. LSCS followed by hysterectomy comprised only 01 sample (0.18%).

Table-2: Clinical presentations in all endometrial lesion cases:

Clinical presentation	No. of cases	Percentage (%)
Increased per vaginal bleeding [PVB]	343	63.28
Mass coming out of vagina	131	24.17
Pain in abdomen	52	9.60
Menorrhagia	12	2.22
White discharge per vagina	2	0.37
Amenorrhea	1	0.18
Irregular bleeding	1	0.18
Total cases	542	100

The most common clinical presentation was increased PVB, seen in 343 (63.28%) cases followed by mass coming out of vagina in 131 (24.17%) cases, pain in abdomen in 52 (9.60%) cases, menorrhagia in 12 (2.22%) cases, white discharge per vagina in 2 (0.37%) cases and amenorrhea & irregular bleeding in 1 (0.18%) case each respectively.

Table-3: Cyclical status of endometrium in cases excluding endometrial lesions:

Cyclical phase	No. of Cases	Percentage (%)
Proliferative phase	151	27.86
Secretory phase	172	31.74
Atrophic endometrium	116	21.40
Total cases studied	542	

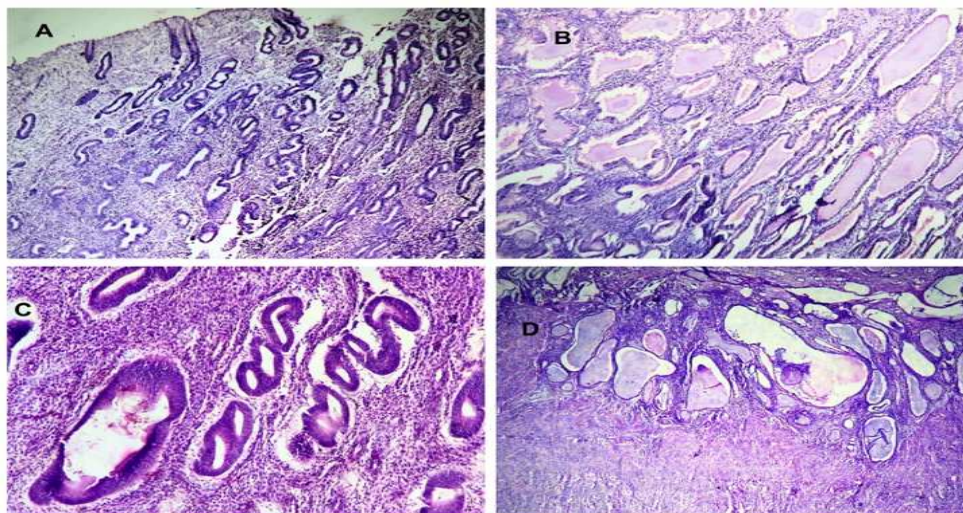


Fig-1: Cyclical Phases:[H&E: 10X]

- A: Proliferative phase: Tubular & narrow endometrial glands in compact stroma.
- B: Secretory phase: Elongated, dilated, tortuous endometrial glands with secretions.
- C: Prolonged oestrogen effect: Endometrial glands with pseudo- stratification of epithelium & compact stroma.
- D: Senile Cystic Atrophy: Cystically dilated atrophic endometrial glands.

Among 542 cases studied, excluding those cases that were not having any cyclical phase, most common cyclical phase observed was the secretory phase [Fig.1: B], seen in 172 (31.74%) cases followed by proliferative phase [Fig.1: A] in 151 (27.86%) cases. Atrophic endometrium [Fig.1:D] was seen in 116 (21.40%) cases.

Table-4: Distribution of various endometrial lesions:

Type of lesion	No. of lesions	Percentage (%)
Non-neoplastic	115	87.78
Neoplastic	16	12.22
Total no. of lesions	131	100

Among 131 endometrial lesions, 115 (87.78%) were non-neoplastic lesions & 16 (12.22%) were neoplastic lesions.

Table-5: Age wise distribution of non-neoplastic endometrial lesions:

Age in years	No. of lesions	Percentage (%)
11-20	01	0.86
21-30	04	3.47
31-40	40	34.80
41-50	55	47.83
51-60	12	10.44
61-70	03	2.60
	115	100

Non-neoplastic lesions were most commonly seen in the age group 41-50 contributing to 47.83 %.

Table-6: Histopathological diagnosis of non- neoplastic lesions:

Histopathological diagnosis	No. of Lesions	Percentage out 542 endometrial lesions (%)
Adenomyosis	65	49.62
Stromal Myosis	04	3.05
Prolonged Oestrogen effect	01	0.76
Predecidual Change	03	2.29
Pill Endometrium	04	3.05
Hormonal Imbalance	01	0.76
Acute Endometritis	04	0.73
Tuberculous Endometritis	01	0.76
Viral Endometritis	01	0.76
Histiocytic Endometritis	01	0.76
Endometrial Polyp	11	8.40
Simple hyperplasia without atypia	18	13.74
Cysto-glandular hyperplasia	01	0.76
Inadequate samples	38	29.0
No. of non-neoplastic lesions	115	87.78
Total no. of endometrial lesions	131	

Adenomyosis [was observed in 65 (11.99%) cases followed by simple hyperplasia without atypia [Fig.2B] in 18 (3.32%) cases and endometrial polyp [Fig.2:A] in 11(2.02%) cases.

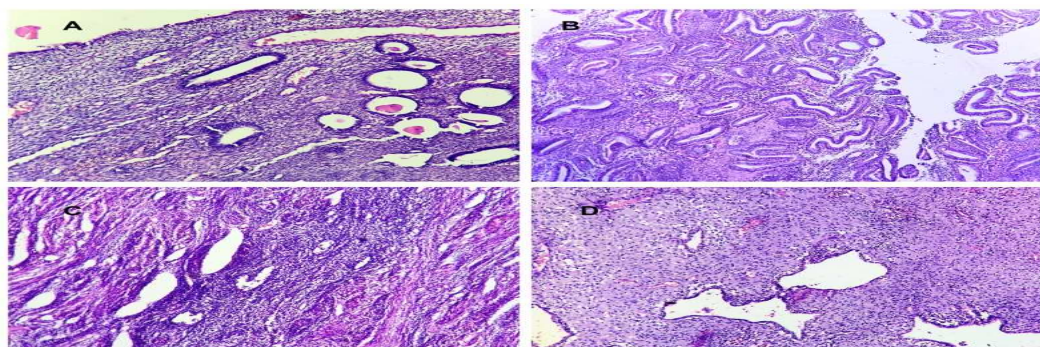


Fig.-2: Non-neoplastic lesions [H & E: 10X]

- A:** Endometrial Polyp: Lining cuboidal epithelium and dilated endometrial glands surrounded by loose and oedematous stoma.
- B:** Simple hyperplasia without atypia: increase in number of endometrial glands without atypia.
- C:** Stromal Myosis: endometrial stroma without glands in the myometrium.
- D:** Pill endometrium: dilated and atrophic endometrial glands in decidualized stroma.

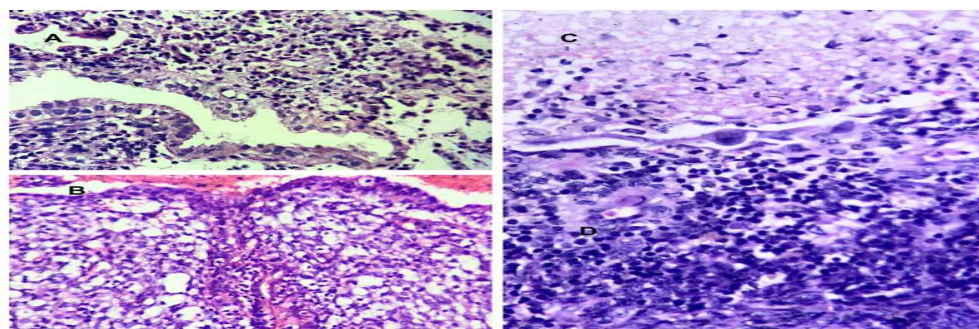


Fig.-3:Endometritis:[H&E: 40X]

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- A: Acute: Endometrial gland and stroma with infiltration by polymorphs.
- B: Histiocytic: Infiltration of plenty of foamy histiocytes and lymphocytes.
- C: Viral: Atrophic endometrial lining epithelium with intra – nuclear viral inclusion.

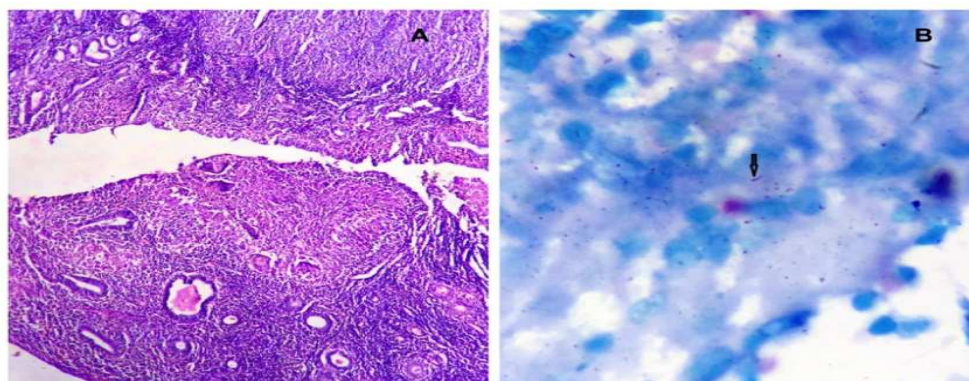


Fig.4: Tuberculous endometritis:

- A: A caseating granulomas composed of epithelioid cells and langhans giant cells. [H&E: 10X]
- B: Long, slender, beaded acid fast bacillus in endometrial tissue [Fite Farraco stain: 1000X]

Stromal myosis [Fig.2:C], pill endometrium [Fig.2:D] and acute endometritis [Fig.3 A] were seen in 4 (0.73%) cases respectively. Predecidual change was seen in 3 (0.55%) cases & prolonged oestrogen effect, hormonal imbalance, tuberculous endometritis [Fig.4], viral endometritis [Fig.3: C], histiocytic endometritis [Fig.3B], cysto-glandular hyperplasia was seen in 1 (0.18%) case each respectively. There were 38 (7.01%) cases with inadequate samples.

All the 4 cases in the benign endometrial neoplasms category were adenomyoma found in 41- 50 years age group with a common clinical presentation of raised PVB.

Table-7: Age wise distribution of malignant endometrial neoplasms:

Age in Years	No. of Lesions	Percentage (%)
41-50	03	25
51-60	05	41.66
61-70	04	33.34
	12	100

Most common age group affected in malignant endometrial neoplasms was 51-60 (41.66%) years followed by 61-70 years (33.34%).

Table-8: Histopathological diagnosis of malignant endometrial lesions out of 542 cases:

Histopathological Finding	No. of Lesions	Total no. of endometrial lesions (%)	Malignant endometrial lesions (%)
Adenosquamous (Mixed) carcinoma	02	1.53	16.68
Endometrioid Adenocarcinoma	07	5.34	58.33
Serous Adenocarcinoma	01	0.76	8.33
Undifferentiated Adenocarcinoma	01	0.76	8.33
Mucinous Adenocarcinoma	01	0.76	8.33
No. of malignant neoplastic lesions	12	9.16	100
Total no. of endometrial lesions	131	-	

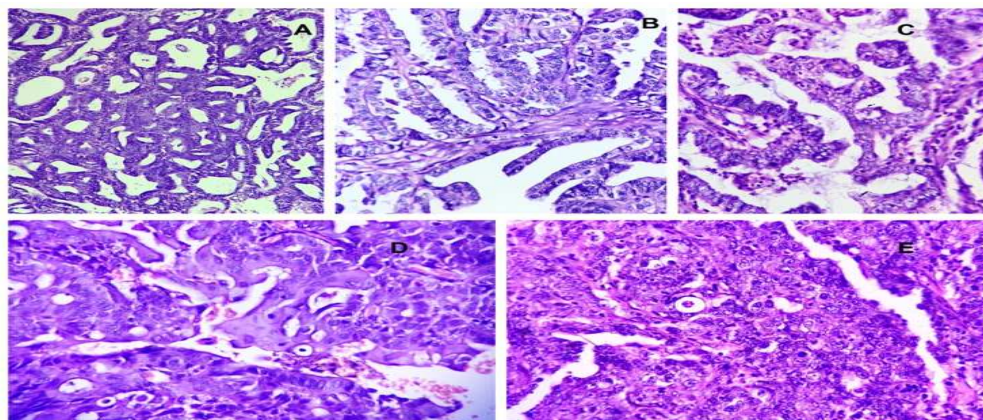


Fig.-5: Malignancies: [H&E 40X]

A: Endometrioid adenocarcinoma: closely packed endometrial glands with back to back arrangement.

B: Papillary adenocarcinoma: Papillary arrangement of tumour cells with a fibro-vascular core.

C: Mucinous adenocarcinoma: Neoplastic endometrial glands with mucin secretions.

D: Adenosquamous carcinoma: Tumour showing acini and sheets of keratinizing large atypical squamous cell.

E: Poorly differentiated carcinoma: Diffuse arrangement of tumour cells with hyperchromatic nuclei & mitotic figures.

Endometrioid adenocarcinoma [Fig.5:A] was most common malignant neoplasm, comprised of 7 (1.29%) cases followed by adenosquamous carcinoma [Fig.5:D] seen in 02 (0.36%) cases and serous adenocarcinoma [Fig.5:B], undifferentiated adenocarcinoma [Fig.5:E] and mucinous adenocarcinoma [Fig.5:C] comprised 01 (0.18%) case each respectively.

Discussion

The present study comprises the clinico-histopathological study of 542 endometrial cases, out of which 131 endometrial lesions (neoplastic & non-neoplastic) were studied in the department of pathology in a tertiary care hospital for a period of two years.

Out of 542 endometrial cases, 131 (24.16%) were organic lesions (115 neoplastic & 16 non-neoplastic) and the remaining were functional ones, similar observation were found by Vaidya S et al [6]. Non-neoplastic lesions were more common in the present study.

TAH was the most common surgical specimen received comprising 255 (47.05%) samples, followed by TVH comprising 154 (28.43%) samples and D&C comprising 130 (23.98%) samples. TAH & TVH samples received in our department, similar observation were found in other study by Sobande A et al [7].

In the present study, the most common cyclical status was secretory phase seen in 172 (31.74%) cases similar observation was found in other study by Vaidya et al [6] followed by proliferative phase, seen in 151 (27.86%) cases. Atrophic endometrium was seen in 21.4% of

cases in our study, near similar observation was found in other study by Gowari M et al [8]. In the present study, the most common clinical presentation was increased PVB (63.28%), similar observation was found in other study by Kartikeyan et al [9]. This is followed by mass coming out of vagina (24.17%), pain in abdomen (9.60%), similar observation were found in other study by Zill-E-Huma et al [10].

In the present study, the most common age group affected in non-neoplastic endometrial lesions was 41-50 years (47.83%), similar observation was found in other study by Tiwana K et al [11].

Out of 542 total cases, adenomyosis was the most common non-neoplastic endometrial lesion comprising 65 (11.99%), similar observation was found in other study by Kartikeyan et al [9]. This is followed by simple hyperplasia without atypia, comprising 18 (3.32%) cases. Similar observation was found in other studies by Pessoa et al [12] & Seda A et al [13].

In the present study of 542 total cases studied, there were 11 (2.02%) cases of endometrial polyps, similar observation was found in other study by Surti et al [14].

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Out of 542 total cases, there was 1 (0.18%) case of tuberculous endometritis with AFB positivity on ZN staining, similar observation were found in other studies by Bodal et al [15] and Gowari et al [8]. There was 1 (0.18%) case of histiocytic endometritis, similar observation was found in other study by Jyotsna W et al [16].

Out of 16 neoplastic lesions, 4 were benign & 12 were malignant lesions. Adenomyoma comprised of all the 4 cases of benign neoplastic lesions in the present study. Thus, malignant lesions were more common than benign lesions. Most common age group affected in benign endometrial neoplastic lesion cases was 41-50 years, while that of malignant endometrial neoplastic lesion was 51- 60 years. Out of total 12 endometrial malignancies, we found 5 (41.66%) cases in the age group of 51 to 60 years, similar observation was found in other study by P. Swarna L et al [17].

Out of total 542 cases, 12 (2.21%) cases of endometrial malignancies were observed, similar observation was found in other studies by Pessoa et al [12] & Zill-E-Huma et al [10]

In present study, most common type of endometrial malignancy was endometrioid adenocarcinoma comprised of 7 out of 12 (58.34%) cases, which was comparable with studies done by Himel B et al [19] and Deodhar KK et al [18].

Conclusion:

In present study, non- neoplastic lesions were more common out of all endometrial lesions. Among neoplastic lesions malignant lesions were more common than benign lesions. Histopathology is important for ensuring diagnosis and deciding management, particularly for malignant diseases.

All the authors have taken near equal efforts in design and concept of this manuscript, literature search, data acquisition and analysis and in overall preparation and editing of this manuscript.

In this molecular era of diagnosis, present study still helps in ensuring diagnosis of endometrial lesions in the rural based health care institutes, tertiary health care centres where adequate facilities are not available and in similar scenario in developing countries.

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Permission from IRB: Yes

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