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Histopathological analysis of hysterectomy specimens in tertiary care center

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Abstract

Background: Hysterectomy is the most commonly performed gynecological surgery as the female reproductive system has been affected by various non-neoplastic and neoplastic conditions during the life time of a woman. It should be performed when the risk of preserving the uterus is greater than its removal or when the disabling symptoms for which there is no successful medical treatment. The gross morphology of uterus quite dramatically changed throughout life by changing levels of ovarian hormones.

Materials and Methods: This retrospective study was conducted on 279 hysterectomy specimens reported to Department of Pathology over a period of one year from June 2023 to June 2024. Surgical specimens were formalin fixed and the tissue was adequately processed for histopathological examination. The sections were stained routinely with hematoxylin and eosin stain. They were compared in terms of age of the patients and pathology of hysterectomy specimens.

Results: The most common clinical indication was fibroid uterus in 112 cases (40.14%) and uterine prolapsed 78 cases (27.95%). Of the 279 cases, half of the cases (51.25%) were encountered in the age group of 40 - 49 years which was the most common age group. Proliferative phase of endometrium was the commonest finding in 108 cases (38.70%). In case of myometrium, 70 leiomyomas were noted. On histomorphology study of cervical lesions, chronic cervicitis was commonest finding in 131 (46.95%) cases.

Conclusions: A wide range of lesions are encountered when hysterectomy specimens are subjected to histopathological examination. Few lesions were encountered as incidental findings. Hence, it is important that every hysterectomy specimen should be subjected to detailed gross and histopathological examination for better postoperative management.

Keywords: Hysterectomy, histopathology, leiomyoma, menorrhagia, uterine prolapse

Introduction

Uterus is exposed to a wide range of pathological lesions for which hysterectomy is done as a major surgical gynecology procedure [1]. The uterus is a vital reproductive and hormone responsive organ is subjected to many non-neoplastic and neoplastic conditions [2]. It is the treatment of choice for many indications which include dysfunctional uterine bleeding, fibroids, gynecological cancers and obstetric disorders [3].

Histopathological examinations of hysterectomy specimens have both diagnostic and therapeutic significance [4]. Hence, this study was conducted to study various gross and histopathological patterns of lesions in uterus and cervix of the hysterectomy specimens received and their clinicopathological correlation in our institute.

Aims and objectives

- To study the age wise incidence of various uterine and cervical lesions.
- To study the histopathological findings in various gynecological conditions.
- To correlate different mode of clinical indications for hysterectomy at tertiary care hospital.

Methods

This is the retrospective study done in the department of pathology, B. J. medical college, Ahmedabad over a period of one year from June 2023 to June 2024.

The female patients with age more than 20 years with uterine and cervical indications for hysterectomy irrespective of type of surgery were included in the study.

Hysterectomy performed for obstetrical causes and hysterectomies done by abdominal or vaginal route were included in present study.

Hysterectomy specimens with indications of tubal or ovarian pathology were excluded from the study. Total 279 hysterectomy specimens were included and evaluated for this study.

Clinical details and relevant history of the patients were obtained from the requisition forms received along with specimens and from clinical case sheets were entered in the proforma for the study and analyzed.

The hysterectomy specimens received were immediately transferred into 10% fresh formalin. After 24 hours fixation, the specimen was examined grossly and necessary sections were obtained from uterus that includes endometrium, myometrium, ectocervix and endocervix. Additional bits were taken depending on the pathology present. The tissue pieces were then processed in tissue processor and then paraffin blocks were made and care was taken to ensure proper labelling of the paraffin blocks. Approximately 2-3µ thick sections were cut with the help of microtome and were stained routinely by Hematoxylin and Eosin stain and special stains were used wherever necessary. Then the sections were examined by light microscope and results are obtained.

Results

A total of 279 cases were studied over a period of one year. The hysterectomies were distributed over a wide age range of 20 years to 75 years. The most common age group undergoing hysterectomy appeared to be 40-49 years with 143(51.25%) cases followed by 73(26.16%) cases in 30-39 years age group (Table-1).

Table 1: Age distribution of hysterectomy specimens

Sr. No.	Age group (in years)	Total No. of cases	Percentage
1.	20-29	13	4.69%
2.	30-39	73	26.16%
3.	40-49	143	51.25%
4.	50-59	28	10.03%
5.	60-69	14	5.01%
6.	≥70	8	2.86%
	Total	279	100%

The most common clinical indication included fibroid uterus in 112 cases (40.14%), followed by utero-vaginal prolapse with 78 cases (27.95%). (Table- 2).

Table 2: Indications for hysterectomy

Sr. No.	Indications for hysterectomy	Total No. of cases	Percentage
1.	Fibroid	112	40.14
2.	Uterine Prolapse	78	27.95
3.	Adenomyosis	43	15.41
4.	Endometrial Polyp	6	2.15%
5.	DUB	38	13.62%
6.	Dermoid cyst	2	0.73%
	Total	279	100%

In case of endometrial findings, proliferative phase of endometrium was the commonest finding in 108 case (38.70%), followed by secretory phase of endometrium in 84 case (30.10%). Two cases (0.74%) of endometrial adenocarcinoma were also noted. Endometrial polyp was seen in 6 case (2.15%). Atrophic endometrium (cystic or pressure atrophy) seen in 68 case (24.37%), endometrial hyperplasia 10 case (3.58%). One case (0.35%) of endometrial adenocarcinoma were also noted. Endometrial carcinoma comprised of only 2(0.74%) cases (Figure-1) and Tuberculous endometritis 1(0.35%) case also diagnosed. (Table- 3).

Table 3: Distribution of various types of Endometrial changes

Sr. No.	Endometrial changes	Total No. of cases	Percentage
1.	Atrophy	68	24.37%
2.	Endometrial hyperplasia	10	3.58%
3.	Endometrial polyp	6	2.15%
4.	Endometrial adenocarcinoma	2	0.74%
5.	Proliferative Phase	108	38.70%
6.	Secretory Phase	84	30.10%
7.	Tuberculous endometritis	1	0.35%
	Total	279	100%

The most common myometrial pathology reported was leiomyoma 70(25.09%) (Figure-3) followed by adenomyosis 35(12.54%). About 32(11.46%) patients had both leiomyoma and adenomyosis. Myometrium was unremarkable in 117(41.93%) cases. 1(0.35%) case of leiomyosarcoma was also diagnosed (Figure-2) (Table- 4).

Table 4: Distribution of various types of Myometrial changes

Sr. No.	Myometrial changes	Total No. of cases	Percentage
1.	leiomyoma	70	25.09%
2.	Adenomyosis	35	12.54%
3.	Leiomyoma + Adenomyosis	32	11.46
4.	medial sclerosis in wall of blood vessels/ Monckeberg's sclerosis in blood vessels	13	4.65%
5.	Placenta increate (Chorionic villi)	4	1.43%
6.	Placenta accrete (Chorionic villi)	6	2.15%
7.	Leiomyosarcoma	1	0.35%
8.	Malignant mixed mullerian tumor	1	0.35%
9.	Myometrium-normal histology	117	41.93%
	Total	279	100%

Majority number of cases showed chronic cervicitis as the main cervical pathology in 131 (46.95%) cases followed by chronic papillary cervicitis + squamous metaplasia in 49(17.56%) cases. One case (0.37%) had Squamous cell carcinoma and also one case was Positive for tumor cells. (Table-5).

Table 5: Distribution of cervical lesions

Sr. No.	Cervical lesions	Total No. of cases	Percentage
1.	Chronic cervicitis	131	46.95
2.	Chronic papillary endocervicitis	25	8.96
3.	Squamous metaplasia	40	14.33
4.	Chronic cervicitis + Squamous metaplasia	49	17.56
5.	Chronic papillary endocervicitis + Squamous metaplasia	18	6.45
6.	Squamous cell carcinoma	1	0.37
7.	Cervical leiomyoma	14	5.01
8.	Positive for tumor cells	1	0.37
	Total	279	100%

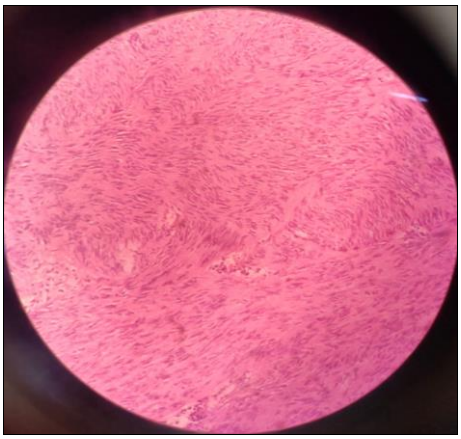

Fig 1: Endometrial carcinoma-extensive papillary pattern-FIGO Grade 1, Nuclear grade 2 (H&E stain,20x)

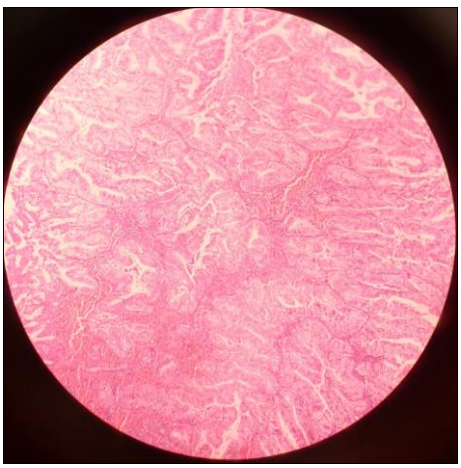

Fig 2: Low grade leiomyosarcoma (H&E stain,40x)

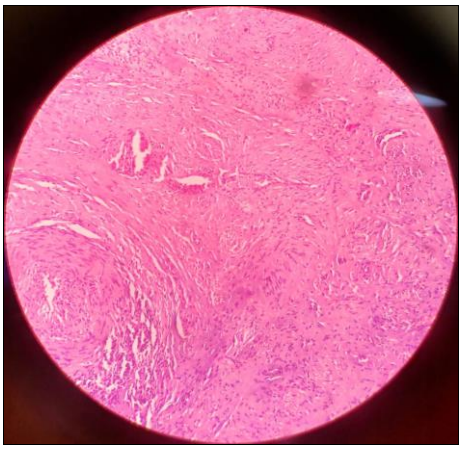

Fig 3: Leiomyoma (H&E stain, 20x)

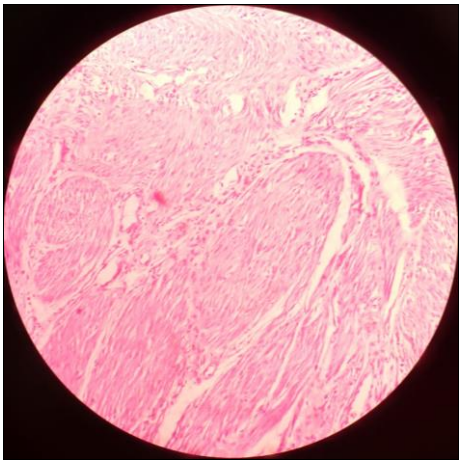

Fig 4: Malignant mixed mullerian tumor (High grade undifferentiated Malignant necrotic tumor-Carcinosarcoma) (H&E stain, 20x)

Discussion

Hysterectomy is the most commonly performed surgery in gynecological practice as it provides definitive cure and accurate diagnosis. The clinical indications to perform this major surgery should always be justified as it has its own psychological, emotional, medical hormonal and sexual effects on a female's life. So, here comes the role of histopathological analysis to evaluate the appositeness of the hysterectomy [5].

In the present study most common symptom for hysterectomy was fibroid in about 112(40.14%) cases. Histopathologically Leiomyoma (25.09%) was found to be most common indication for hysterectomy. Other studies done by Rather GR *et al*, Ramchandran T *et al*, Ajmera *et al*, Chandalekha J *et al*, Raza A *et al* and Dhuliya V *et al* had similar findings [6-11].

In present study, atrophic endometrium was seen in 68(24.37%) of cases. It is a normal finding in post-menopausal woman but it may be associated with bleeding and therefore it is important to rule-out hyperplasia and malignancy. Other studies by Raza A *et al*, Dhuliya V *et al* and Baral R *et al* found 26(12.8%), 24(16%) and 20(7.7%) cases respectively [10-12].

In the present study, endometrial hyperplasia was reported in 10(3.58%) cases. Out of which 8cases were hyperplasia without atypia and 2cases were atypical hyperplasia. Endometrial hyperplasia was classified according to WHO classification [13]. This finding was low comparable with the studies done by Dhuliya V *et al*, Ranabhat *et al* and Ojeda VJ *et al*; reported 16.6%, 16% and 22.3% cases of endometrial hyperplasia respectively [11, 14, 15]. Raza A et a reported 0.9% of endometrial hyperplasia which is quite low than other studies [10].

Endometrial polyp was seen in 6(2.14%) of cases. Raza A *et al* and Baral R *et al* reported 1.9% and 4.9% respectively [10,12]. Two cases (0.74%) of endometrial carcinoma presented in the different age group of 30-59 years were encountered in the study. All cases presented with abnormal uterine bleeding. Chandalekha J *et al* and Dhuliya V *et al* had similar findings [9, 11].

One case (0.35%) of tuberculous endometritis was presented with menorrhagia in 30-year-old female.

One 25-year-old patient with 9 months of amenorrhea presented with abdominal pain. Baby was delivered by caesarian section then obstetric hysterectomy was done and reported as placenta increta.

Chronic cervicitis is an extremely common condition in adult females diagnosed at microscopic level. It is the commonest cervical pathology in this study, detected in 131(46.95%) cases which is comparable to that reported by Talukder *et al* [14]. Only two cases (0.73%) of malignant tumors of cervix were observed in the present study. This incidence is close to that observed by Watts WF *et al* and Raza A *et al* [13, 10]. Lesions of ovaries and fallopian tubes were not included in this study.

Conclusion

In the present study majority of cases of fibroids presented with symptoms. Leiomyoma has high recurrence rate so hysterectomy is the only treatment that prevents regrowth of leiomyoma. It improves quality of life for many women.

The present study provides awareness into the wide range of histopathological patterns of lesions in uterus and cervix in hysterectomy specimens. Though the histopathological analysis correlates well with the clinical diagnosis, few lesions are also encountered as pure incidental findings. Microscopic assessment and clinopathological correlation are necessary as grossly identifiable benign lesion may harbor in focus of malignancy. Therefore, every hysterectomy specimen must undergo a thorough histological investigation, even if it appears superficially normal, to confirm the diagnosis and improve postoperative care.

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