

## HISTOPATHOLOGICAL STUDY OF HYSTERECTOMY SPECIMENS - A STUDY AT TERTIARY CARE HOSPITAL

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### Abstract

**Background:** The Female genital tract is a highly responsive to hormonal influences. The configuration of uterus changes throughout the life. It's a very vital organ subjected to many benign and malignant lesions due to hormonal imbalances. Women worldwide suffer from gynecological and obstetric disorders which need hysterectomy as a treatment option and this may involve removal of the fallopian tube and ovary depending on clinical symptoms, age and parity of the woman. The aim of this study is to study the histopathological features of varied uterine lesions, their profile and distribution of different lesions in relation of age. **Materials and Methods:** The present study is carried out during the period of June 2019 to July 2021. Gross examinations of specimens were performed as per CAP protocol and microscopic examination done and findings were noted. Lesions from representative sections were studied and classified according to World Health Organization (WHO) classification of Tumours of Female Reproductive Organs. **Results:** The present study which was comprised of 166 cases of hysterectomy specimens was carried out from June 2019 to July 2021. The most commonly affected age group was 31-50 years, being most common age group for non-neoplastic lesions and benign neoplastic lesions. The malignant cases reported were in between 41-60 years of age group. The most common presenting complaint was menorrhagia, out of which 41% cases were diagnosed as leiomyoma, 15% cases were of adenomyosis and 8% cases consisting of both leiomyoma with adenomyosis. Uterovaginal prolapse was second most common indication comprise of 24% of cases. Out of total 54 specimens of ovary studied, 14 (26%) accounted for benign non-neoplastic lesions. Amongst those, the highest number of cases reported were of follicular cysts i.e. 35% followed by simple ovarian cysts which accounted for 29% of the total non-neoplastic lesions. **Conclusion:** Though the histopathological analysis correlates well with the clinical diagnoses, few lesions like chronic cervicitis and adenomyosis encountered as pure incidental findings. Hence, it is mandatory that every hysterectomy specimen, even if it grossly appears to be normal, should be subjected to detailed histopathological analysis so as to ensure a better postoperative management.

## INTRODUCTION

Uterus is an important female reproductive organ. Due to continuous influence of various hormones, modern life style and poor hygiene, it is subjected to many non-neoplastic lesions like abnormal uterine bleeding (AUB), utero-vaginal prolapse (UVP), endometriosis, adenomyosis, and neoplastic conditions like leiomyoma, stromal sarcoma, leiomyosarcoma, cervical carcinoma, Histopathological examination of hysterectomy specimens plays a crucial role in correct and

accurate diagnosis, which has a significant impact on treatment of the patient.

In view of the wide variety of lesions seen in the hysterectomy specimens, this study was conducted with a view of having insight into the patterns of lesions in hysterectomy specimens in our institution and their detailed morphological examination. We analysed histopathological features, incidence and distribution of various types of lesions in the hysterectomy specimens. We also focused on pattern of occurrence of different lesions in relation to age, parity and mode of presentation and

correlation of clinical diagnosis with histopathological diagnosis of hysterectomy specimens.

## MATERIALS AND METHODS

The present study is carried out in Histopathology section of Pathology Department in Government medical College Surat during the period of June 2019 to July 2021. The clinical information regarding the age, clinical features, clinical history and the relevant investigation of the patients who underwent hysterectomy during this period was obtained from the histopathological requisition forms and clinical case sheets at time of receiving specimen.

For gross examination of specimen we had followed guidelines given in the 'Grossing of Surgical Oncology Specimens' by TATA Memorial Hospital

and CAP (College of American Pathologists) protocol.

After grossing tissue processing done and sections were stained by Hematoxyline and Eosin stain. During microscopic examination, light microscope was used for the diagnosis of various lesions. Lesions from representative sections were studied and classified according to World Health Organisation (WHO) classification of Tumours of Female Reproductive Organs.

## RESULTS

In present study total of 166 cases were studied and the observations were made. The types of hysterectomies performed are mentioned in table no. 1. More commonly performed was total abdominal hysterectomy constituted 98 (59.03%) cases.

**Table 1: Distribution of types of hysterectomies**

Type	Cases	Percentage (%)
Abdominal	98	59.03 %
Vaginal	57	34.33 %
Obstetric hysterectomy	11	06.62 %
Total	166	100 %

Majority of the patients 54 cases (24.32%) presented with menorrhagia followed by uterovaginal prolapse with 53 cases (23.87%), Other less common presenting features were cervical polyp in 1 case (0.45%), ovarian cyst in 1 case (0.45%).

**Table 2: Clinical Indications of Hysterectomy**

INDICATION	CASES	PERCENTAGE (%)
Menorrhagia	54	24.32 %
Uterovaginal prolapse	53	23.87 %
Fibroid	46	20.72 %
Postmenopausal bleeding	03	01.35 %
Adenomyosis	11	04.95 %
Obstetric hysterectomy	11	04.95 %
Ovarian mass	09	04.05 %
Placenta Accreta	06	02.70 %
Ovarian cyst	06	02.70 %
Endometrial hyperplasia	05	02.25 %
Placenta Previa	04	01.80 %
Carcinoma of cervix	03	01.35 %
Endometrial polyp	03	01.35 %
Placenta Increta	02	00.90 %
Cervical dysplasia	02	00.90 %
Pelvic inflammatory disease	02	00.90 %
Ovarian cyst	01	00.45 %
Cervical polyp	01	00.45 %
Total	222	100 %

**Table 3: Age wise distribution of lesions according to nature of lesions**

AGE GROUP (YEARS)	NON NEOPLASTIC	NEOPLASTIC		TOTAL	PERCENTAGE (%)
		Benign	Malignant		
20-30	12	7	2	21	12.65 %
31-40	19	25	0	44	26.50 %
41-50	26	26	6	58	34.93 %
51-60	9	12	5	26	15.66 %
61-70	8	3	3	14	08.43 %
>70	2	1	0	3	01.80 %
Total	76	74	16	166	100 %

The mean age of the patient was 45.47 ± 11.76 years. The most common age of presentation in our study was in 41-50 years age group having 58 (34.93%) cases. Among non-neoplastic lesions, 45(60%) cases were in 31-50

years age group, while among benign lesions, 51(69%) cases were in 31-50 years age group. However, among malignant lesions, all 6 cases were in above 40 years range.

In our study 76 cases (45.78%) were of non-neoplastic conditions. Out of 166 cases, 74 cases (44.57%) were diagnosed as benign lesions, among this 56 cases were from myometrium and 9 cases were from ovary. Among malignant tumor, 6 cases were from ovary, 4 were from endometrium and 4 cases were from cervix.

**Table 4: Histopathological Findings of Endometrium**

	Histopathological findings	Cases	Percentage (%)
Normal 109 (65.66%)	Proliferative Endometrium	83	50.00 %
	Secretory Endometrium	26	15.66 %
Non-neoplastic 43 (26.00%)	Atrophic Endometrium	32	19.27 %
	Pseudodecidual change	01	00.60 %
	Decidualisation	04	02.40 %
	Placenta accreta	03	01.80 %
	Placenta Increta	03	01.80 %
Benign 07 (04.21%)	Endometrial Polyp	02	01.20 %
	Simple cystic hyperplasia	05	03.01 %
	Complex hyperplasia	01	00.60 %
Pre-malignant 01 (00.60%)	Endometrial hyperplasia with atypia	01	00.60 %
Malignant 04 (02.40%)	Endometrioid endometrial adenocarcinoma	03	01.80 %
	Mixed Epithelial and mesenchymal tumour - Adenosarcoma with Sarcomatous Overgrowth	01	00.60 %
	Tumor invasion	01	00.60 %
	Total	166	100 %

**Table 5: Histopathological Findings of Myometrium**

Histopathological findings	cases	Percentage (%)
Leiomyoma	52	31.32 %
Adenomyosis	21	12.60 %
Leiomyoma with adenomyosis	06	03.61 %
Adenomyoma	04	02.40 %
Tumor invasion	04	02.40 %
No remarkable pathology	79	47.60 %
Total	166	100 %

**Table 5: Histopathological Findings of Cervix**

Type of Lesions	Histopathological findings	cases	Percentage (%)
Non-neoplastic 129 (77.71%)	Chronic cervicitis	76	45.78 %
	Papillary endocervicitis	14	08.43 %
	Chronic cervicitis with hyperplastic lining ectocervix	22	13.25 %
	Chronic cervicitis with squamous metaplasia of endocervix	17	10.24 %
Benign	Endocervical polyp	01	00.60 %
Pre-malignant 04 (02.40%)	Cervical dysplasia	02	01.20 %
	Cervical intraepithelial neoplasia	02	01.20 %
Malignant 02 (01.20%)	Squamous cell carcinoma	01	00.60 %
	Clear cell carcinoma	01	00.60 %
	No remarkable pathology	30	18.08 %
	Total	166	100 %

**Table 6: Histopathological Findings of Ovaries**

Type of Lesions	Histopathological findings	Cases	Percentage (%)
Non neoplastic 14 (25.92%)	Follicular cyst	05	09.25 %
	Simple Ovarian Cyst	04	07.40 %
	Corpus luteal cyst	01	01.85 %
	Hemorrhagic cyst	01	01.85 %
	Chocolate Cyst	02	03.70 %
	Dermoid Cyst	01	01.85 %
Benign 09 (16.66%)	Sex-cord Stromal Tumor – Fibroma	01	01.85 %
	Serous cystadenoma	05	09.25 %
	Mucinous cystadenoma	03	05.56 %
Malignant 06 (11.12%)	Serous cystadenocarcinoma	04	07.40 %
	Mucinous cystadenocarcinoma	-	-
	Well differentiated Endometrioid Adenocarcinoma	01	01.85 %
	Clear cell adenocarcinoma	01	01.85 %
	No remarkable pathology	25	46.30 %
Total		54	100 %

**Table 7: Histopathological Findings of Fallopian**

Histopathological findings	Cases	Percentage (%)
Hydrosalpinx	02	02.63%
Paratubal cyst	02	02.63%
Tumor metastasis	01	01.31 %
No remarkable pathology	71	94.31 %
Total	76	100 %

## DISCUSSION

In the present study age range of the patients were between 20 to 80 years with majority of patients in age group of 41-50 years (35.00%), which was similar to Walter F. Watts et al's.<sup>[2]</sup> study, in whose study age range of patients were from 19 to 87 yrs. In the study of Ajmera Sachin K et al.<sup>[3]</sup> the age range was between 30 to 94 years. In Mandakini B. Tengli et al's.<sup>[4]</sup> study, the age ranges from 20-80 years. In Gulfaren Haidar et al's.<sup>[5]</sup> study it was seen in the patient whose age was less than 30 year and more than 50 years. The peak age incidence in present study and all others study was between 41-50 years of age.

In present study the preferred approach in majority of cases was abdominal (59.03%) followed by vaginal route (34.33%). The mean age of the patient who had undergone hysterectomy was  $45.47 \pm 11.76$  years. This findings are similar with study done by Deepti Verma et al.<sup>[6]</sup> and Ranabhat et al.<sup>[7]</sup>

In present study the most common clinical indication for hysterectomy was menorrhagia (24.32%) followed by uterovaginal prolapse (23.87%) and then fibroid (20.72%). In various other studies by Sobande AA et al.<sup>[8,2]</sup>, Parveen S. et al.<sup>[9]</sup> and Gousia Rahim Rather et al.<sup>[10]</sup>, Menorrhagia was the most common clinical indication.

The second most common indication in our study was uterovaginal prolapse, indicated in 53 (23.87%) cases of hysterectomy; which was similar with study done by Jha R. et al.<sup>[11]</sup>, in which it was indicated in 37.1% cases and Deepti Verma et al.<sup>[6]</sup>, where indication was 37.5% of cases. Next indication was leiomyoma which was indicated in 24.9% in study of Jha R et al and 25.8 % in study by Sobande AA et al.<sup>[8]</sup> In present study fibroid was indicated in 46 cases (20.72%).

In our study, out of total 54 specimens of ovary studied, 14 (26%) accounted for benign non-neoplastic lesions. Amongst those, the highest number of cases reported were of follicular cysts i.e. 5 cases (35%) followed by simple ovarian cysts which accounted for 4 cases (29%) of the total non-neoplastic lesions. This finding in present study was in concordance with other studies done by Abu Khalid Muhammad Maruf Raza et al.<sup>[14]</sup>, in which figure was 24 %. However 57% cases were reported by Ajaz Amin Zargar et al.<sup>[15]</sup>, this difference may be due to low sample size in present study.

There were 2 cases (03.70%) of chocolate cysts, one case (1.85%) of corpus luteal cysts, one case

(1.85%) of hemorrhagic cyst and one case (1.85%) of dermoid cyst was found.

In our study, the most common surface epithelial tumors was benign serous cystadenoma 9.25% (5 cases) followed by mucinous cystadenoma 5.56% (3 cases), which was higher than the finding reported by Jha et al.<sup>[16]</sup> with 4.5% for the benign serous cystadenoma, 3.1% for mucinous cystadenoma and lower than finding reported by Pity et al.<sup>[17]</sup> with 25.7% of benign surface epithelial tumors were serous cyst adenoma and 6.7 % were for mucinous cyst adenoma. Abdullah et al study showed.<sup>[18]</sup> serous cystadenoma (44.6%) and mucinous cystadenoma (13.6%). The low figure in our study may be related to sample size of study.

One case (1.85 %) of sex cord stromal tumor - fibroma was also noted in our study.

In present study, malignant serous cystadenocarcinoma were the most common malignant ovarian neoplasm and represent 7.40% (4 cases) of the cases and no cases reported as mucinous cystadenocarcinoma and this data approximates the figure published by Jha et al.<sup>[11]</sup> where 3.4% of their cases were malignant serous cystadenocarcinoma and 0.8% were malignant mucinous cystadenocarcinoma. Whereas malignant serous cystadenocarcinoma (33.3%) and malignant mucinous cystadenocarcinoma (15.4%) were reported by Abdullah et al.<sup>[18]</sup> in their study. The low figure in our study may be due to low sample size.

In our study out of all malignant tumor of the ovary, one case of well differentiated Endometrioid adenocarcinoma and one case of clear cell adenocarcinoma was noted, incidence of which was 1.85% for each

## CONCLUSION

In this observational study, most common lesion seen after histopathological analysis of hysterectomy specimen was chronic cervicitis followed by leiomyoma. This study provides a fair insight into the histopathological patterns of lesions in hysterectomy specimens. A wide range of lesions is encountered when hysterectomy specimens are subjected to histopathological examination.

Though the histopathological analysis correlates well with the clinical diagnoses, few lesions like chronic cervicitis and adenomyosis encountered as pure incidental findings. Hence, it is mandatory that every hysterectomy specimen, even if it grossly appears to be normal, should be subjected to

detailed histopathological analysis so as to ensure a better postoperative management.

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