

# Histopathological Spectrum of Lesions of Hysterectomy Specimens

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## ABSTRACT

**Objective:** To assess the range of pathological lesions in the hysterectomy specimens and correlate the findings with the clinical indications.

**Study Design:** Observational study

**Place and Duration of study:** This study was conducted at the Department of Pathology, Women Medical College Abbottabad and Department of Gynaecology and Obstetrics, Women and Children Teaching Hospital Abbottabad from Jan 2013 to Dec 2015.

**Materials and Methods:** All cases of hysterectomy sent to the Histopathology Department were included in the study. Data regarding patient characteristics and indications were collected from files and patients records. The slides stained with hematoxylin and eosin were examined. Pathological findings in the uterus, cervix and ovaries were noted. The results were analysed by using percentages.

**Results:** Total of 110 hysterectomy specimens were received. The commonest type of hysterectomy was Total abdominal hysterectomy with bilateral salpingo-oophorectomy with 59 cases (53.6%). Mean age of patients was 46 years ranging from 35 - 67 years. Most common preoperative diagnosis was fibroid uterus in 38 cases (34.5%) followed by dysfunctional uterine bleeding in 34 cases (30.9%). Most common pathology found in uterine corpus was Leiomyoma (36.3%) followed by adenomyosis (19%) and endometrial hyperplasia (11.8%). Chronic cervicitis in cervix and functional cysts in ovaries were most common histological findings. Ovarian neoplasms accounted for 14% of ovarian pathology. 67.6% of cases pre-operatively diagnosed as DUB had a defined pathology like adenomyosis, leiomyoma or both, endometrial polyps and endometrial hyperplasia.

**Conclusion:** Uterine fibroids and adenomyosis were the most common benign lesions. Justification of hysterectomy is proved when the Histopathology report is compatible with the preoperative diagnosis. All hysterectomy specimens should be sent for histopathological examination regardless of the pre-operative microscopic assessment.

**Key Words:** Hysterectomies, Indication, Pathology

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## INTRODUCTION

Uterus, a vital reproductive organ is subjected to many benign and malignant diseases.

Together with the lesions that affect the cervix, the lesions of the corpus of the uterus and the endometrium account for most patient visits to gynaecologists. Hysterectomy is the commonest gynaecological surgery in pre and post-menopausal women all over world.<sup>1</sup> It is the second common surgical procedure in USA.<sup>2</sup>

It is the definitive cure for pelvic pathology including dysfunctional uterine bleeding, fibroids, utero-vaginal

prolapse, endometriosis and adenomyosis, pelvic inflammatory disease, pelvic pain, gynaecological cancers and obstetric complications.<sup>3</sup>

It produces an intact uterus and consequent control over tissue sampling and hence enabling determination of the origin of a particular lesion.<sup>4</sup> The diagnostic value of histopathological examination is well explained in patients with malignancy where adjuvant treatment is dependent upon grade and extent of invasion of disease. Diagnosis of adenomyosis is only established by histopathology, while DUB is a diagnosis of exclusion.

Life time risk of hysterectomy is 25% in the U.S.A and 10.5% in Denmark.<sup>5</sup> Around 60-80% of hysterectomies in the USA and the UK are performed via abdominal route.<sup>6</sup> Rates of hysterectomy vary with geographic area, patient expectations and training and practice patterns of the local gynaecological surgeons

This study was conducted to assess the range of pathological lesions in the hysterectomy specimens in our setup and correlate the histopathological findings with the clinical indications.

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**MATERIALS AND METHODS**

This present retrospective study was conducted at Department of Pathology, Women Medical College and Department of Gyneacology and Obstetrics, Women and Children Teaching Hospital Abbottabad from the year Jan 2013 to Dec 2015. 110 cases of hysterectomy specimens were received in Histopathology Dept. The clinical information and the relevant investigations of the patients who underwent hysterectomy during this period were obtained from the histopathological requisition forms and clinical case sheets.

The specimens were properly labelled, numbered and fixed in 10% buffered formalin. After a detailed gross examination of the specimens, multiple bits were taken from representative sites, processed and paraffin blocks were made. The blocks were sectioned and stained routinely with hematoxylin and eosin. After thorough microscopic examination a histopathological diagnosis was given. Data was analysed by using percentages

**RESULTS**

A total of 110 hysterectomy specimen were received. 62.7% of the patients were in the age group 41 – 50 years. Mean age of patients was 46 years ranging from 35 - 67 years (Table 1).

**Table No.1: Age wise distribution of women undergoing hysterectomy (n = 110)**

Age (yrs)	Total cases	Percentage
30 – 35	03	2.7%
36 – 40	08	7.2%
41 – 45	28	25.4%
46 – 50	41	37.2%
51 – 55	11	10%
56 – 60	12	10.9%
Above 60	07	6.3%

**Table No.2: Distribution of Types of Hysterectomies (n = 110)**

Types of Hysterectomy	Total cases	Percentage
Total Abdominal Hysterectomy With Bilateral Salphingo-Oophorectomy	59	53.6%
Total Abdominal Hysterectomy	23	20.9%
Total Abdominal Hysterectomy With unilateral Salphingo-Oophorectomy	12	10.9%
Vaginal Hysterectomy	14	12.7%
Subtotal / Supracervical hysterectomy	02	1.8%

**Table No.3: Clinical Indications of Hysterectomy (n = 110)**

Clinical Diagnosis	Total cases	Percentage
Leiomyoma (Fibroids)	38	34.5%
Dysfunctional Uterine Bleeding (DUB)	34	30.9%
Uterovaginal (Uv) Prolapse	14	12.7%
Endometrial Hyperplasia	07	5.4%
Adenomyosis	07	6.3%
Ovarian Cysts/Tumors	06	5.4%
Uterine polyps	02	2.7%
Cervical dysplasia	01	0.9%
Carcinoma Cervix	01	0.9%

**Table No.4: Histopathological lesions of endomyometrium of corpus uteri (n=110)**

Histopathological Finding	Total cases	Percentage
<b>Lesions in the endometrium</b>		
Atrophic endometrium	07	6.3%
Simple cystic hyperplasia	07	6.3%
Complex hyperplasia without atypia	04	3.6%
Complex hyperplasia with atypia	02	1.8%
Disordered proliferative phase	06	5.4%
Pseudodecidual change	04	3.6%
Endometrial polyp	05	4.5%
Endometritis	05	4.5%
Normal histology	70	63.6%
<b>Lesions in the myometrium</b>		
Leiomyoma	40	36.3%
Adenomyosis	21	19%
Leiomyoma & Adenomyosis	04	3.6%
Normal histology	45	40.9%

The commonest type of hysterectomy was Total Abdominal Hysterectomy with Bilateral Salphingo-oophorectomy 53.6% with 59 cases (Table 2). Various indications for hysterectomy are listed in Table 3. Commonest indication was fibroid, followed by Dysfunctional uterine bleeding.

On histopathology in many hysterectomy specimens morethan one pathology was found.

Most common pathology found in uterine corpus was Leimyoma followed by adenomyosis (Table 4).Chronic cervicitis was an incidental finding in most of the cases. Only one case of squamous cell carcinoma of the cervix was noted (Table 5). Functional cysts were most common histological findings in 35.2% ovarian specimen. While ovarian neoplasms accounted for 14% of ovarian pathology (Table 6).

34 cases diagnosed clinically as dysfunctional uterine bleeding were histopathologically identified as follows: 14 adenomyosis (41%), 02 leiomyoma (5.8%), 04 cases of combined pathology having adenomyosis and leiomyoma (11.7%), 02 Endometrial polyps (5.8%), 01 endometritis (2.9%). 11 cases (32.3%) did not reveal any abnormality.

**Table No.5: Histopathological Lesions in the cervix (n=108)**

Histopathological Finding	Total cases	Percentage
Chronic Non-Specific Cervicitis	83	76.8%
Chronic cervicitis with squamous metaplasia of endocervix	09	8.3%
Papillary endocervicitis	02	1.8%
Endocervical Polyp	02	1.8%
Cervical Leiomyoma	02	1.8%
Cervical dysplasia	02	1.8%
Squamous cell carcinoma	01	0.9%
Normal histology	07	6.3%

**Table No.6: Histopathological Lesions in the ovary (n=71)**

Histopathological Finding	Total cases	Percentage
Simple follicular cyst	21	29.5%
Hemorrhagic cyst	02	2.8%
Corpus luteal cyst	02	2.8%
Serous cystadenoma	05	7%
Serous cystadenocarcinoma	01	1.4%
Borderline serous tumor	01	1.4%
Mucinous cystadenoma	01	1.4%
Benign cystic teratoma	01	1.4%
Metastatic mucinous carcinoma	01	1.4%
Endometriosis	02	2.8%
Normal histology	34	47.8%

## DISCUSSION

Hysterectomy is the most commonly performed major gynaecological surgery throughout the world. Limited data is available in our community regarding histopathological analysis of hysterectomy specimens and relationship between the preoperative clinical indications and pathological diagnosis. It is observed that more than 90% of gynaecological surgeries are performed for benign conditions with the major objective of improving the patient's quality of life.<sup>7</sup>

In our study Abdominal approach was preferred in 87.2 % and vaginal route for cases of uterovaginal prolapse in 12.7% cases. Majority of the cases (53.6%) included TAH with bilateral salpingo-oophorectomy. Comparable findings were noted in a study by

MacKanzie and Abdullah et al.<sup>8,9</sup> Peak age incidence of most of the pathologies was 41-50 years which is similar to that reported in other studies.<sup>10,11</sup>

The indications for abdominal hysterectomy in our study were consistent with other studies.

Commonest indication was fibroid (40.4%) and DUB (29%) in the study by Jaleel R.<sup>12</sup>

Similar results have been reported by Shergill SK. and Gupta et al.<sup>13,14</sup> Clarke A has reported the commonest indication to be DUB (58%), followed by fibroids (23.2%).<sup>15</sup>

Upon review of histopathology reports, leiomyoma was the most common diagnosis in our study, followed by adenomyosis. Other national studies have also reported leiomyoma as the most common pathological lesion with the frequencies ranging from 25-48%<sup>16,17,18</sup>

Incidence of leiomyoma reported is 25.8% in Saudi Arabia<sup>19</sup>, 48 % in Nigeria<sup>20</sup> and 78% in USA.

<sup>21</sup>Geographical and racial influences are thus apparent on the prevalence of uterine leiomyoma. Hysterectomy was treatment of choice as it decreases the morbidity associated with massive vascular leiomyoma

Adenomyosis was next common uterine pathology as seen in other studies. Its prevalence was 56.5% in a study at Agha Khan University Hospital Karachi and 20.6% in Swat.<sup>22,23</sup> Incidence of adenomyosis is

high in parous women which supports the theory of implantation of the basal endometrium deep in the myometrium. Transvaginal ultrasound is the preferred choice for diagnosis of adenomyosis.<sup>24</sup> Adenomyosis is under-diagnosed because of relatively less use of imaging techniques and thus hysterectomy remains the diagnostic and therapeutic modality. Higher degree of suspicion and better technique may help in diagnosing the missed indications.

Four cases (3.6%) in this study revealed the presence of both leiomyoma and adenomyosis. Other studies have also reported this association.<sup>12,18</sup> Endometrial hyperplasia constituted 11.7% cases in our study. A great difference of opinion prevails in the literature regarding the incidence of endometrial hyperplasia which may in part be due to different conceptions of what constitutes endometrial hyperplasia. This findings are similar to study by Jaleel et al.<sup>12</sup>

No case of endometrial carcinoma was diagnosed in this series, which denotes low frequency of carcinoma and other malignancies of the body of uterus as compared to other gynaecological malignancies in this region. This is similar to the findings of other workers in the sub-continent<sup>25</sup>

Most common incidental finding was chronic cervicitis with or without squamous metaplasia in 85% cases. Cervicitis is extremely common in parous women. The incidence was similar to that reported by other studies.<sup>18,26</sup> Cervical dysplasia was seen in 2 cases and a single case of squamous cell carcinoma was reported in our study.

In ovarian specimens, cysts of variable morphology was the most common pathology noted. Majority were simple follicular cysts. Incidence of the functional ovarian cysts was similarly high in other studies.<sup>3, 27</sup> Ovarian tumours constituted 14% of ovarian pathology in our study. Most common were serous cystadenomas. Among malignancies a single case of serous cystadenocarcinoma, metastatic mucinous carcinoma and one case in borderline category was noted. The incidence is close to that quoted by Talukder and Jha et al.<sup>26,28</sup> Ovarian tumors were observed in 13.1% of the hysterectomy cases by Verma D.<sup>29</sup>

Eighty three percent gynaecologist recommend oophorectomy in postmenopausal women, fifty percent in perimenopausal women and less than five percent in premenopausal women at the time of hysterectomy.<sup>30</sup> However, removal of ovaries without the suspicion of any pathology seems to be unnecessary. The removal of ovaries leads to estrogen hormone deficiency, hastens up the menopause and patient's psychosexual health is affected.

Majority of pre-operative diagnosis were confirmed on hysterectomy. Those missed were mainly patients with dysfunctional uterine bleeding. DUB is a blanket diagnosis. It was confirmed in 32.3% of cases clinically diagnosed as DUB. Rest of our cases preoperatively diagnosed as DUB revealed adenomyosis, small leiomyomas or both and endometrial polyps on histopathology. Almost similar findings have been reported by Jaleel et al. and Shergill SK.<sup>12, 13</sup>

## CONCLUSION

The present study provides a fair insight into the histological patterns of lesions in hysterectomy specimens in our institution. Though the histopathological analysis correlates well with the clinical diagnosis, quite a few lesions are also encountered as pure incidental findings. Hence, it is mandatory that every hysterectomy specimen should be subjected to detailed histopathological examination so as to ensure a better postoperative management.

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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