# Histopathological Analysis of Uterine Lesions in Hysterectomy Specimens

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Abstract: <u>Background</u>: The Female Genital Tract is a hormone responsive system to a degree unmatched by any other system in the body. The gross configuration of uterus changes dramatically throughout life. It is a kind of 'Puppet on a string", thus manipulated throughout life by changing levels of ovarian hormones. The Gynecolological specimen forms the substantial proportion of work load in histopathology department. Two cardinal clinical manifestation of gynecological disease are abnormal uterine bleeding and infertility. Hysterectomy is the most common major gynecological operation in the world It can be done through either abdominal or vaginal route. Cervix is an organ which usually function as normal pathological conditions. While infection of the female genital tract are commonly encountered in gynecological practice, Incidence of non neoplstic and neoplastic lesion of cervix depend on various age group. World wide cancer of cervix is 2<sup>nd</sup> most common cancer in women. <u>Objective of study</u> : The present study is aimed at detailed histopathological evaluation of all lesion of hysterectomy specimen. (It produce an intact uterus and consequent control over tissue sampling and hence enabling determination of origin of particular lesion.) Methodology: 697 cases of hysterectomy specimen during 2 year were reviewed. Statstical data for age, clinical presentation and histopathological diagnosis was reviewed and overall clinicopathologial correalation was done. <u>Result</u>:Peak age group of hysterectomy was 41-50 years with 253 (34.6%)cases. Youngest patient was 21 years old and oldest was 75 years old. Commonest type of hysterectomy done was total abdominal hysterectomy in 485 (69.6%) cases. Commonest clinical indication of diagnosis for hysterectomy was Prolapse uterus in 211(30.3%) cases followed by fibroid uterus in 155(22.2%) cases, dysfunctional uterine bleeding in 136 (19.5%). Most common presenting complaint was menorrhagia and mass per vagina. <u>Conclusion</u>: Hysterectomy is the most common surgery performed in gynaecological practice. A wide range of lesions were noted when hysterectomy specimens are subjected to histopathological examination.

Keywords: Hysterectomy, Histopathology, cervicitis

## 1. Introduction

The female reproductive system has been affected by various abnormalities and diseases and hence has been the subject of interest and the basis for the gynecological practice. The uterus consists of the endometrium and myometrium, which are continuously stimulated by hormones, denuded monthly of its endometrial mucosa and inhabited periodically by fetuses.<sup>1</sup>

The uterus being a vital reproductive and hormoneresponsive organ is subjected to a variety of physiological changes, and benign and malignant disorders.<sup>2</sup> Most common complaints presented are per vaginal bleeding, vaginal discharge, pain in abdomen, menstrual irregularity, difficulty in micturation and postmenopausal bleeding and sensations of something coming out of vagina etc.<sup>3</sup>

Many treatment options are available nowadays including medical and conservative surgical procedures but hysterectomy remains the most preferred method to manage gynecological disorders.<sup>2</sup> Hysterectomy can be done by the vaginal or the abdominal route, or with laparoscopic assistance.<sup>4</sup>. This helps in adequate sampling of the required and suspected areas and thus helps in diagnosis of various lesions without any error of sampling.

This study is entitled to study various gross and histopathological findings in uterus and cervix of the hysterectomy specimens received and their clinicopathological correlation. The objective of the study was to study the histopathological features of varied lesions of uterus, their profile and distribution of different lesion in relation to age and mode of clinical presentation.

## 2. Material and Methods

Total 697 hysterectomy specimens were received in the department of pathology of a tertiary health care centre over a period of 2 years.

Hysterctomy specimens of 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 specimens with indications of tubal or ovarian pathology were excluded from the study. Clinical details of the patients were obtained from the requisition forms received along with specimens and were entered in the proforma.

The Hysterectomy specimens received were immediately transferred into 10% formalin saline in the ratio of 1:10. After 24 hours fixation, the specimen was examined grossly and necessary sections were obtained from uterus that includes endometrium, myometrium and serosa from fundus, body and lower –uterine segment. Additional bits were taken depending on the pathology present, if any, which included a minimum of 3 sections from the lesion. Similarly, minimum 2 bits were obtained from cervix that includes endocervix and ectocervix from both lips of cervix.

Minimum 3 sections from the lesion, if any were also obtained.

The tissue pieces were then processed in automated tissue processor and then paraffin blocks were made and care was taken to ensure proper labeling of the paraffin blocks.

# 3. Result

A total of 697 cases were studied. The hysterectomies were distributed over a wide age range of 21 to more than 70 years. Of these 253 cases (36.2%) were encountered in the age group of 41 - 50 years which is the most common age group . The most common type of hysterectomy was total abdominal hysterectomy comprising of 485 cases (69.6%) followed by vaginal hysterectomy comprising of 212 cases (30.4%).

Indications for hysterectomies varied from menstrual abnormalities to suspected pelvic malignancy. Majority of the patients presented with menorrhagia (29.4%) followed by fibroid uterus (22.2%) fig1,fig2 . Atrophic endometrium was the most common endometrial pathology seen in 16.6% cases followed by endometrial hyperplasia (simple and complex) Malignant tumors comprised only 0.72% of cases .In 56.8 % myometrium was unremarkable.). The most common myometrial pathology encountered was leiomyoma (25.5%) followed by adenomyosis (12.8%) . Only one case of malignant tumor i.e. leiomyosarcoma was observed. Maximum number of cases showed chronic cervicitis as the main cervical pathology (36.6%). Other less frequent cervical pathologies encountered were endocervical polyps, cervical intraepithelial neoplasia and malignant tumors.

## Discussion

Hysterectomy is the most commonly performed major gynaecological surgery throughout the world. It is a successful operation in terms of symptom relief and patient satisfaction and provides definitive cure to many diseases involving uterus as well as adnexae.<sup>5</sup> This study was conducted to analyze the patterns of lesions in hysterectomy specimens in our institution, correlate the findings with the clinical indications and to compare our findings with those ofother workers.

In the present study maximum number of patients i.e is 36.3% were seen in the age group of 41-50 years. In an analysis of 1000 consecutive operation by Watts et al <sup>6</sup> most number of cases i.e 45.2 were distributed in age group of 41-50 years. Various studies done by Rather GR et al <sup>7</sup>, Ramchandran T et al<sup>8</sup> and Ajmera et al <sup>9</sup> had similar findings.

The commonest surgical approach in the present study is abdominal hysterectomy (69.6%) followed by vaginal hysterectomy (30.4%). In a study by Ajmera et al <sup>9</sup> abdominal approach was preferred in 54.4% cases and vaginal route in 38.9% cases. In the present study, 17(2.5%)cases of endometrial hyperplasia were noted. Out of which 13 were simple hyperplasia without atypia and 4 were complex hyperplasia without atypias Maximum number of cases were seen in the age group of 41-50 years. This finding was comparable with the studies done by Ojeda VJ <sup>10</sup> and Ranabhat et al <sup>11</sup>, which showed 22.3% and 16% cases of endometrial hyperplasia respectively.

Three cases (0.4%) of endometrial carcinoma in the both age group of 41-50 years were encounterd in the study. All cases presented with post menopausal bleeding and were clinically diagnosed with endometrial carcinoma. Postmenopausal bleeding and abnormal pre menopausal bleeding are the presenting symptom in the cases of endometrial carcinoma.

Leiomyoma is the most common myometrial lesion in this study. Most of the studies done on the histopathological study of hystrecomy specimen till date reveals uterine fibroid are the most common pathology noted in the uterus. Studies done by Watts WF et al <sup>6</sup> Abdullah  $LS^{12}$ , and Ranabhat SK et al<sup>10</sup> had distribution of fibroid being 41.5%, 34.6%, and 30.3% respectively.The present study noted fibroid in 152(21.8%).Per vaginal bleeding was the commonest symptoms.

Adenomyosis **fig:4** is the second most common myometrial pathology in this study. Adenomyosis is rarely diagnosed preoperatively and is still largely under diagnosed as it has no specific symptoms of its own <sup>13</sup> It is usually diagnosed after hysterectomy by histopathological examination <sup>14.</sup> Many cases (8.02%) in this study revealed the presence of both leiomyoma and adenomyosis.

Carcinosarcoma are highly aggressive biphasic neoplasms composed of carcinomatous and sarcomatous components .In this study , one cases of carcinosarcoma was noted and patient presented with complaints of mass per abdomen.

Cervical fibroid are morphologically similar to the uterine fibroid and they can undergo degenerative changes **fig3**, similar to other fibroid. Two cases of cervical fibroid were noted in the present study.

Chronic cervicitis is an extremely common condition in adult females, at least at the microscopic level. It is the commonest cervical pathology in this study, detected in 70 % cases which is comparable to that reported by Talukder<sup>15</sup>. Cervical dysplasia is considered as pre neoplastic lesion for development of cervical cancer. In the present study, 3(0.4%) cases were diagnosed as mild cervical dysplasia. In a study by Ranabhat SK et al <sup>11</sup> similar findings were noted . Only eight cases of malignant tumors of cervix (**fig 5, 6**) were observed in the present study. This incidence is close to that reported by Watts WF et al<sup>6</sup>



Figure 1: Intramural & Subserosal Fibroid



Figure 2: Interlacing Fascicles of smooth muscles cells(H&E)



Figure3: Cervical fibroid showing degenerating



Figure 4: Adenomycosis change



Figure 5: Carcinoma Cervix



Figure 6: Basosquamous carcinoma (H&E)

# 4. Conclusion

Hysterectomy is the most common surgery performed in gynaecological practice. A wide range of lesions are noted when hysterectomy specimens are subjected to histopathological examination. The question still remains whether microscopic assessement and clinicopathological correlation of all grossly visible pathologies in hysterectomy is necessary or not. The answer is definitely yes, as grossly identifiable benign pathology may harbor in focus of malignancy. In the study many hysterectomy specimen has no significant findings, from this we can concludes that now a days many unwanted hysterectomies are also done.

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