

# Histopathological Evaluation of Hysterectomy Specimens among Rural Patients in a Zonal Care Centre & Its Clinicopathological Correlation

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## Abstract

**Background:** Hysterectomy is considered the gold standard gynaecological procedure and is performed all over the world for the treatment of benign and malignant disorders.

**Aim & Objective:** To study the clinical indication, gross and histopathological feature of uterus and cervix in hysterectomy specimens and correlate with clinical finding.

**Material & Methods:** A retrospective was conducted in Department of Pathology Aug 2020 to Aug 2022. A total duration of the study was two years. The gross and histopathological findings of 70 hysterectomy specimens received in the department of pathology. Surgical specimens were fixed in formalin and tissues were adequately processed from them and stained with hematoxylin and eosin. A thorough microscopic examination of the stained slide were carried out & a histopathological diagnosis was made. The histopathological findings of the hysterectomy specimen were noted and then correlated with the clinical findings.

**Results:** A clinicopathological correlation was noted in 70 cases. The endomyometrium was the most commonly seen in 39 cases, the cervix 20 cases and ovary 11 cases. The incidence of chronic cervicitis was high, followed by squamous metaplasia, carcinoma of the cervix, neobothian cysts and cervical leiomyoma. The most common lesion among the endometrium was hyperplasia without atypia, followed by endometrial polyps, endometrium carcinoma, and atypical hyperplasia. Among the myometrium lesions leiomyomas were the most common followed by adenomyosis. Among the ovarian lesions were simple cysts, corpus luteal cysts, follicular cysts, fibroma, and serous cystadenoma.

**Conclusion:** This study found a good correlation between clinical indication and histopathology in benign and malignant pathologies. All the hysterectomy specimens should be sent for histopathological examination to ensure better post-operative management, especially in malignant diseases.

**Keywords:** Benign; Malignant; Endometrium; Hysterectomy; Squamous Cell Carcinoma; Endometrial Adenocarcinoma; Adenomyosis; Leiomyoma.

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## INTRODUCTION

Uterus is a hollow pear shaped organ that weights between 40-80g in adult female. It is divided into the corpus, the lower uterine segments, and the cervix. The uterine cavity is triangular, measuring on average 6 cm in length. It is composed of the inner endometrial lining and the myometrium with muscular serosal coverings that extend to the

peritoneal reflection. It is a vital reproductive organ, that is subjected to many benign and malignant diseases. There are several treatment options are available, but hysterectomy is widely regarded as the gold standard gynecological procedure for the treatment of dysfunction uterine bleeding, fibroid, uterovaginal prolapse, adenomyosis, endometriosis, cervical cancer, uterine cancer, ovaries carcinoma and obstetric complications. A hysterectomy is the surgical removal of the uterus. It involved the removal of the cervix, ovaries, fallopian tubes, and other surrounding structures. Histopathological examination of hysterectomy specimens carries diagnostic and therapeutic importance. Subtotal hysterectomy (removing uterine body only), total hysterectomy (removing uterine body with cervix), hysterectomy with BSO (removing uterus with bilateral salpinx oophorectomy), and radical hysterectomy (removing total hysterectomy with pelvic lymph node, paracervical tissue and upper one third of vagina) are the all options. Hysterectomy is usually performed by abdominal, vaginal and laproscopic routes. Hysterectomy is considered the gold standard for diagnosing endometrial pathologies.<sup>1</sup> It has been discovered that hysterectomy may change the diagnosis, especially if there is little pathology missed on endometrial biopsy, but the significance of the hysterectomy specimen cannot be overstated. This study was conducted with the view of getting insight into the pattern of lesions in hysterectomy in a zonal hospital.

## MATERIAL & METHODS

This study consisted of 70 cases of hysterectomy specimens received in the Department of Pathology. The total duration of the study was two years. Hysterectomy specimen of the patient were fixed in 10% formal saline, large specimens were cut and left for fixation. After a detailed gross examination, the tissue was embedded, paraffin blocks of the tissue were made, and a section was cut and stained with hematoxylin and eosin. A thorough microscopic examination of the stained slide was carried out & a histopathological diagnosis was made. The data was collected for the study.

## RESULTS

In our 70 cases study, the most common age group underwent hysterectomy was 41-50 years followed by 31-40 yrs and the age group 61-70 yrs had the fewest hysterectomies (Table 1). The type of hysterectomy performed most commonly in

**Table 1:** Age wise distribution of cases

S. no.	Age group	No of cases	%
1	20-30	02	2.8
2	31-40	24	34.28
3	41-50	33	47.14
4	51-60	10	14.28
5	61-70	01	1.42
	<b>Total</b>	<b>70</b>	<b>100</b>

**Table 2:** Clinical Indication of Hysterectomy.

S. no.	Clinical Diagnosis	No. of cases	%
1	Fibroids	21	30.0
2	Abnormal uterine bleeding	14	20.0
3	Adenomyosis	07	10
4	Utero-Vaginal prolapse	03	4.2
5	Endometrial polyp	06	8.5
6	Cervical Leiomyoma	02	2.8
7	Ca cervix & CIN	04	5.7
8	Ovarian cyst/tumor	13	18.5
	<b>Total</b>	<b>70</b>	<b>100</b>

this study was total abdominal hysterectomy, next most common was total abdominal hysterectomy with bilateral salpino-oophorectomy (Table 3) and the least common was vaginal hysterectomy. The endomyometrium was the most commonly seen in 39 cases, the cervix 20 cases and ovary 11 cases (Table 4). In this study, the incidence of chronic cervicitis was high, followed by squamous metaplasia, carcinoma of the cervix, neobothian cysts and cervical leiomyoma. The most common lesion among the endometrium was hyperplasia without atypia, followed by endometrial polyps, endometrium carcinoma, and atypical hyperplasia. Among the myometrium lesions leiomyomas were the most common followed by adenomyosis. Among the ovarian lesions were simple cysts, corpus luteal cysts, follicular cysts, fibroma, and serous cystadenoma.

The correlation between the clinical and

**Table 3:** Types of Hysterectomies

S. no.	Type of hysterectomy	No of cases	%
1	Total abdominal hysterectomy	58	82.85
2	Vaginal hysterectomy	03	4.2
3	Total abdominal hysterectomy with bilateral salpinx oophorectomy	09	12.8
	<b>Total</b>	<b>70</b>	<b>100</b>

**Table 4:** Histopathological lesions of hysterectomy specimen.

S. no.	-	Type of lesions	No. of cases	%
1.	Cervix (N-20) 28.5%	Chronic cervicitis	10	14.2
		Chronic cervicitis with squamous metaplasia	04	5.7
		Carcinoma of cervix & CIN	03	4.2
		Nebothian cyst	02	2.8
		Cervical Leiomyoma	01	1.4
2.	Endometrium (N-39) 55.7%	Endometrial polyp	03	4.2
		Leiomyoma	19	27.1
		Hyperplasia without atypia	08	11.4
		Hyperplasia with atypia	02	2.8
		Adenomyosis	05	7.1
3.	Ovary (N-11) 15.7%	Simple cyst	04	5.7
		Corpus leuteal cyst	03	4.2
		Follicular cyst	02	2.8
		Fibroma	01	1.4
		Serous cystadenoma	01	1.4
-	Total	-	70	100

histopathological diagnosis of benign uterine pathologies was found to be good. On histopathology, 90.4% of fibroids tumours diagnosed clinically were confirmed leiomyomas. 84.61% benign ovarian pathology, 71.4% Adenomyosis and 57.1% of case diagnosed clinically were confirmed on histopathology. The cases were classified as abnormal uterine bleeding,

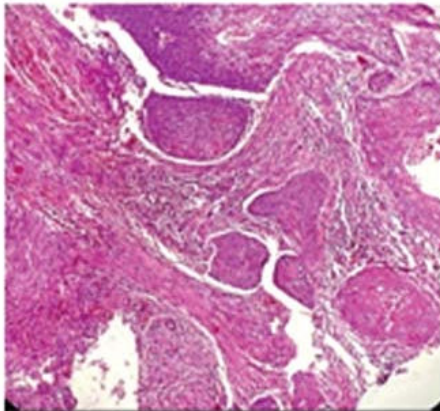
and the histopathological examination found definitive pathology in about 14 of the cases. Out of 14 cases of abnormal uterine bleeding 08 cases were diagnosed as endometrial hyperplasia, 02 cases as atypical hyperplasia, 02 cases as endometrial carcinoma, and 02 cases as cervical carcinoma. The clinicopathological correlation is shown in (Table 5)

**Table 5:** Correlation between clinical and histopathological diagnosis

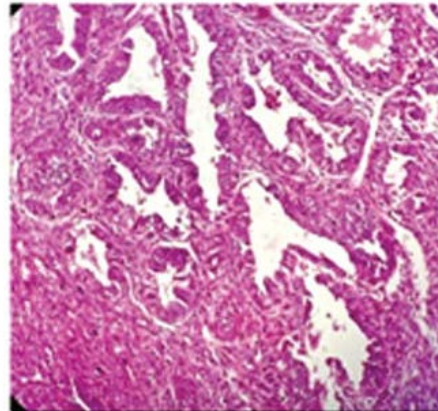
Clinical diagnosis	Number	HPE correlated	Percentage
Fibroids	21	19	90.4
Adenomyosis	07	05	71.4
Endometrial polyp	06	03	50
Cervical Leiomyoma	02	01	50
Ca cervix & CIN	04	03	75
Ovarian cyst/Tumor	13	11	84.61



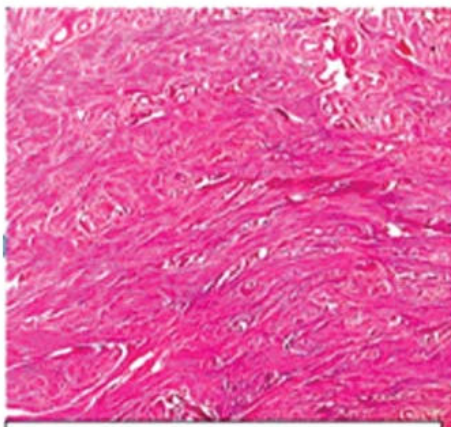
## MICROPHOTOGRAPH



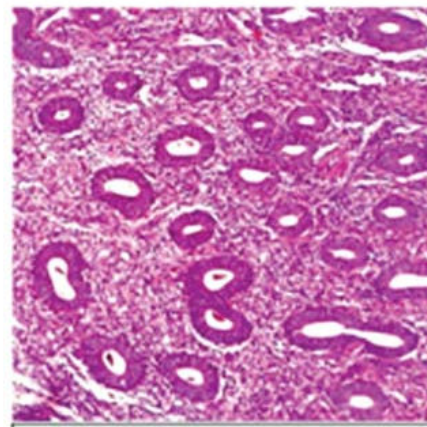
Microphotograph of Non keratinising squamous cell carcinoma showing tumour cells in nests and absent keratin pearls HPE-20X



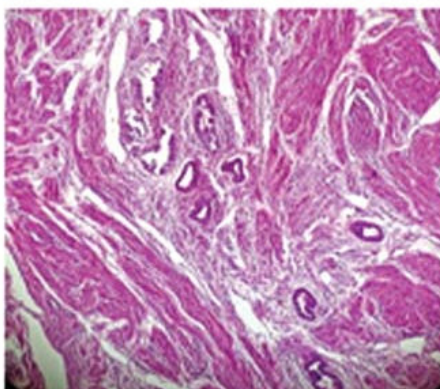
Microphotograph of Endometrial adenocarcinoma showing tumour in irregular, complex glandular pattern and pleomorphic columnar epithelium with prominent nuclei. HPE-20X



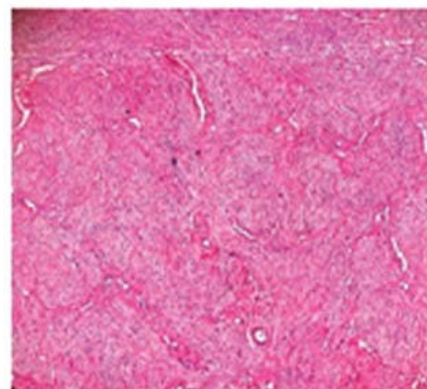
Microphotograph of cervical leiomyoma showing interlacing fascicles of smooth muscle cells. No atypical mitosis or hyperchromatic nuclei seen. HPE 10X



Microphotograph of endometrial hyperplasia showing increase gland to stroma ratio with variability in gland size and cystic glandular dilatation. HPE-20X



Microphotograph of adenomyosis showing benign endometrial glands in myometrial stroma. HPE-20X



Microphotograph of leiomyoma of showing fascicles of spindle cells with cigar shaped nuclei. No atypical mitosis or atypia seen. HPE-20X

## DISCUSSION

Hysterectomy is the most commonly performed gynaecological surgery worldwide<sup>2</sup> and the prevalence of hysterectomy varies from country to country, region to region. It provides a definitive cure and an accurate diagnosis. The type of hysterectomy depends on the age of the patient, the size of the uterus, and the clinical presentation.

The most common age group for the hysterectomy in the current study was 41-50 years, followed by 31-40 years, and the least hysterectomy was done in the age group 20-30 years, which was consistent with other studies 45 years in Yogesh Neena et al<sup>3</sup> and 40-49 years in Vandana et al.<sup>4</sup>

The most common surgical approach in the current study was abdominal hysterectomy 82% which was similar to other studies 85.33% in Chryssiopoulos et al<sup>5</sup> and 79% in MacKanzie et al<sup>6</sup>, was followed by TAH and BSO and the least was vaginal hysterectomy. The most common clinical indication in our study was fibroid, at 37.1% which is similar to other studies 39.3% in Vandana et al<sup>4</sup> and 48.0% in Pradhan SB et al.<sup>7</sup> MacKanzie et al<sup>6</sup> and Karthikeyan et al<sup>8</sup> reported fibroid as second most common indication for hysterectomy.

The endometrial hyperplasia without atypia was discovered in 11.4% of women in our study, which is comparable to 11.7% Pity et al<sup>10</sup> and lower than 59.1% R Jandial et al<sup>12</sup> and 60% in Pradhan SB et al.<sup>7</sup> Atypical endometrial hyperplasia was found at the rate of 1.3% in our study which is higher than the 0.2% reported by R Bala et al.<sup>9</sup> The rate of endometrial polyps in our study was 5.7%, which is comparable to the 5.6% reported by Pity et al<sup>10</sup> and 1.8% in R Jandial et al.<sup>12</sup> We found only two (1.3%) cases of endometrial carcinoma, both adenocarcinoma, which is comparable to the 1.3% in HA Patil et al<sup>11</sup>, 1.2% reported by R Jandial et al<sup>12</sup>, 1% reported by Pity et al<sup>10</sup> and slight higher than the 0.7% reported by SMO Zaid et al<sup>13</sup> and 0.5% reported by Pradhan SB et al.<sup>7</sup>

In this study, leiomyoma represented 27.1% of the myometrial lesions which is similar to the 27.1% reported by Jha et al.<sup>14</sup> Uterine fibroid tumours are benign smooth muscle tumours of uterus. Most of the women have no symptoms, while others may have painful or heavy menstrual cycles. Adenomyosis 7.1% is the second most common finding in myometrial lesions in our study which is lower as compared to 13.7% in HA Patil et al<sup>11</sup> and 19% Bhide et al study.<sup>15</sup> Adenomyosis is rarely diagnosed preoperatively and is still largely underdiagnosed as it has no specific symptoms.<sup>16</sup>

Chronic cervicitis accounted for 14.2% of all cervical pathologies in our study, which is comparable to 12.2% in Ebinesh A<sup>17</sup>, and lower than 46.8% reported by R Jaindal et al.<sup>12</sup> Chronic cervicitis with squamous metaplasia accounts for 5% as reported by R Jaindial et al<sup>12</sup> which is similar to our study 5%. In our study, squamous cell carcinoma of cervix occur at the rate of 4.2% which is comparable to 3.7% in Shakera et al study.<sup>18</sup> Cervical carcinoma starts in the cervix due to the abnormal and uncontrolled proliferation of lining cells. Majority of cervical carcinoma are squamous cell carcinoma, with adenocarcinoma, which develop from the mucosal glands in the endocervix, being the second most common. The human papillomavirus is found in about 99% of cervical cancers.

The ovarian lesion showed variable morphology in our study (Table 4), which is similar to another study by Jamal S et al.<sup>19</sup> Ovarian tumours are tumours arising from the ovary. They can be benign or malignant. The risk of ovarian tumours increases in women who have ovulated more during their lives. The clinicopathological correlation between the clinical and histopathological examinations was more fabulous in benign conditions. The difference between clinical and histopathological diagnosis in malignant correlation was 75% but clinical suspicion was higher than histopathological diagnosis in our study, which is similar with Singh K et al<sup>20</sup> study.

## CONCLUSION

Hysterectomy is a very commonly performed gynecological surgery. The most common indication for hysterectomy is leiomyoma, which is the most common pathology diagnosed preclinically and histopathological examination. This study shows the higher incidence of benign conditions of the uterus in our rural area and a strong clinicopathological correlation. All hysterectomy specimens should be sent for histopathological examination to ensure better postoperative management, especially in malignant disease.

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*Conflict of Interest:* None

## REFERENCES

1. Saadia A, Mubarak A, Zubair A, Jamal S, Zafar A. Diagnostic accuracy of endometrial curettage in endometrial pathology. Journal of Ayub Medical College Abbottabad. 2011;23(1):129-31.
2. Wu JM, Wechter ME, Geller EJ, Nguyen TV, Visco AG. Hysterectomy rates in the United States, 2003.



- Obstetrics & Gynecology. 2007;110(5):1091-5.
3. Neena Y, Honey B. Clinico-pathological correlation of hysterectomy specimens for abnormal uterine bleeding in rural area. *Journal of Evolution of Medical and Dental Sciences*. 2013;39(2):7506-12.
  4. Gangadharan V, Prasanthi C. Hysterectomy-a clinico-pathological correlation in a rural setting. *Indian Journal of Basic and Applied Medical Research*. 2016;5(2):8-15.
  5. Chryssikopoulos A, Loghis C. Indications and results of total hysterectomy. *International surgery*. 1986;71(3):188-94.
  6. MacKenzie IZ, Naish C, Rees M, Manek S. 1170 consecutive hysterectomies: indications and pathology. *British Menopause Society Journal*. 2004;10(3):108-12.
  7. Pradhan SB, Sedhain M, Acharya S, Maharjan S, Regmi S. Clinico-pathological study of hysterectomy specimens in Kathmandu Medical College Teaching Hospital. *Birat Journal of Health Sciences*. 2018;3(2):423-6.
  8. Karthikeyan T, Veenaa N, Kumar A, Thomas E. Clinico-pathological study of hysterectomy among rural patients in a tertiary care center. *IOSR Journal of Dental and Medical sciences*. 2015;14(5):25-7.
  9. Bala R, Devi PK, Singh CM. Trend of hysterectomy: A retrospective analysis. *Journal of Medical Society*. 2015;29(1):1.
  10. Pity IS, Jalal JA, Hassawi BA. Hysterectomy: a clinicopathologic study. *Tikrit Medical J*. 2011;17(2):7-16.
  11. Patil HA, Patil A, Mahajan SV. Histopathological findings in uterus and cervix of hysterectomy specimens. *MVP Journal of Medical Sciences*. 2015:26-9.
  12. Jandial R, Choudhary M, Singh K. Histopathological analysis of hysterectomy specimens in a tertiary care centre: study of 160 cases. *International Surgery Journal*. 2019;6(8):2856-9.
  13. Zaid SMO, Thabet MAB. Histopathological findings in hysterectomy specimens: A retrospective study. *Middle east Journal of Internal Medicine*. 2017;10(1):12-24.
  14. Jha R, Pant A, Jha A, Adhikari R, Sayami G. Histopathological analysis of hysterectomy specimens. *JNMA; journal of the Nepal Medical Association*. 2006;45(163):283-90.
  15. Bhide P, Bhide A. Uterine adenomyosis. *J Obstet Gynecol*. 1994;44(4):612-5.
  16. Weiss G, Maseelall P, Schott LL, Brockwell SE, Schocken M, Johnston JM. Adenomyosis a variant, not a disease? Evidence from hysterectomized menopausal women in the Study of Women's Health Across the Nation (SWAN). *Fertility and sterility*. 2009;91(1):201-6.
  17. Ebinesh A, Sharada M, Krishna M. Clinicopathological correlation of abdominal hysterectomy specimens. *International Journal of Science and Research (IJSR)*. 2013;4:1084-89.
  18. Perveen S, Tayyab S. A clinicopathological review of elective abdominal hysterectomy. *Journal of Surgery Pakistan (International)*. 2008;13(1):27.
  19. Jamal S, Baqai S. A clinicohistopathological analysis of 260 Hysterectomies Pakistan. *J Pathol*. 2001;12(2):11-4.
  20. Singh K, Agarwal C, Pujani M, Raychaudhuri S, Sharma N, Chauhan V, et al. A clinicopathological correlation of international federation of gynecology and obstetrics's PALM-COEIN classification of abnormal uterine bleeding: Indian scenario. *Journal of mid-life health*. 2019;10(3):147.

