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Histopathological analysis of hysterectomy specimens in a tertiary care centre

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Abstract

Aim: The primary objectives of the present investigation were to ascertain the diverse clinical indications, examine the clinicopathological correlation among hysterectomy specimens, and evaluate the lesion patterns observed in hysterectomy specimens.

Methods: 150 hysterectomy specimens submitted to the Department of Pathology were utilized in this retrospective analysis. A comparison was made regarding the pathology of hysterectomy specimens and the age of the patients. The histopathological characteristics of hysterectomy specimens were documented and subsequently analyzed in relation to the clinical diagnosis.

Results: With 100 cases (66.6%), total abdominal hysterectomy with bilateral salpingoophorectomy was the most prevalent type of hysterectomy. A peak incidence of 38%, or 57 cases, was observed during the fourth decade of life. Fibroid uterus was the prevailing clinical indication in 75 cases, accounting for 50% of the total. In 85 cases (56.6%), the proliferative phase of the endometrium was the most frequently observed. Regarding the myometrium, 92 leiomyomas were identified. After histomorphological examination of cervical lesions, chronic cervicitis was identified in the majority of cases (70, or 46.6%).

Conclusion: Clinically, few instances of double pathologies can be overlooked; therefore, it has been demonstrated that clinicopathological correlation is crucial in all hysterectomy cases to enhance post-operative management and optimize clinical outcomes.

Keywords: Histopathological analysis, hysterectomy specimens, tertiary care centre

Introduction

A complex yet captivating anatomical structure, the female genital system comprises the vagina, uterus, ovaries, fallopian tubes, and internal and external genitalia. Both endometrium and myometrium make up the uterine corpus. Among the most important female reproductive organs is the uterus, also referred to as the cervix and womb ^[1]. The uterus, an essential reproductive organ, is susceptible to a wide range of benign and malignant conditions ^[2]. The uterine corpus experiences a monthly depletion of its endometrial mucosa when controlled by hormones. Uterine corpus and cervix lesions constitute the majority of gynecologist visits ^[3].

Despite the availability of numerous treatment alternatives, including conservative surgical techniques and medication, hysterectomy continues to be the most frequently performed gynecological procedure worldwide ^[4]. Charles Clay performed the initial partial hysterectomy in Manchester, England, in 1843 ^[5]. Subsequently, in 1929, he executed the first total abdominal hysterectomy. Hysterectomy is the most frequently conducted gynecological procedure on females worldwide. It involves the removal of the uterus, which can be affected by a range of benign and malignant conditions throughout a woman's lifetime ^[6]. when the potential for preserving the uterus outweighs the risk of its removal, or when there are incapacitating symptoms for which no effective medical treatment exists, uterine incisions should be performed ^[7].

The primary objectives of the present investigation were to ascertain the diverse clinical indications, examine the clinicopathological correlation among hysterectomy specimens, and scrutinize the lesion patterns observed in hysterectomy specimens.

Methods

The current investigation was a retrospective analysis of the morphological and histopathological characteristics of the cervix and uterus in 150 hysterectomy specimens that the Department of Pathology had received.

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Inclusion criteria

All types of hysterectomy were incorporated into the study, such as total abdominal, vaginal, laparoscopic, and abdominal hysterectomy, with or without unilateral or bilateral salpingectomy or salpingo-oophorectomy.

Exclusion criteria: Obstetric hysterectomy was the only exclusion criterion for this study.

Data collection

The documentation included the patient's name, age, sex, clinical appearance, and differential diagnosis, along with a detailed clinical history and information from the gynecological request form.

Study methodology

Upon receipt, the hysterectomy specimens were transferred promptly into 10% fresh formalin. Following a 24-hour fixation period, the specimen underwent a clinical examination, and essential sections from the uterus, including the endometrium, myometrium, ectocervix, and endocervix, were obtained. Further pieces were extracted in accordance with the presence of pathology. Following the processing of the tissue sections in a tissue processor, paraffin blocks were prepared with the utmost attention to labeling.

Sections measuring around 2 to 3 microns in thickness were sectioned using a microtome and were routinely stained with hematoxylin and eosin; when necessary, special stains were

applied. The histopathological observations of the uterus and cervix were subsequently documented and compared to the clinical diagnosis.

Statistical Analysis

Analyzable data from histopathology database were analysed using SPSS 16.0 version.

Results

The present study was undertaken in Department of Pathology. A total of 150 hysterectomy specimens were analysed in the histopathology section of the department over a period of one year.

Table 1: Age distribution of hysterectomy specimens (N = 150)

Age group (Years)	Number of cases (N)	Percentage (%)
25 – 35	22	14.6
35 – 45	57	38
45 - 55	42	28
55 - 65	18	12
65 - 75	11	7.3

Hysterectomies were performed in women aged between 25 and 75 years of age. The majority of cases, 57 (38%) of these 150 cases, occurred between the ages of 35 and 45 years, followed by 42 (28%) cases between the ages of 45 and 55 years. The least number of cases, 11 (7.3%), were between the ages of 65 and 75 years.

Table 2: Hysterectomy type

Hysterectomy type	Number of cases (N)	Percentage (%)
Total abdominal hysterectomy with bilateral salpingoophorectomy	100	66.6
Total Abdominal Hysterectomy	35	23.3
Vaginal Hysterectomy	15	10

The most common type of hysterectomy was total abdominal hysterectomy with bilateral salpingoophorectomy with 100 cases (66.6%). Least number of cases were of vaginal hysterectomy in 15 cases (10%).

Table 3: Clinical indication of hysterectomies

Clinical indication	No. of cases	%
Fibroid	75	50
Utero-vaginal prolapse	30	20
Adenomyosis	19	12.6
Abnormal uterine bleeding	18	12
Endometrial polyp	7	4.6
Abdominal mass	1	0.6

The most common clinical indication included fibroid uterus in 75 cases (50%), followed by utero-vaginal prolapse with 30 cases (20%). Only one case of abdominal mass was encountered in the study that turned out to be endometrial adenocarcinoma.

Table 4: Histopathological findings in endometrium

Histopathological diagnosis	No. of cases	%
Proliferative phase	85	56.6
Senile endometrium	36	24
Secretory phase	12	8
Basal endometrium	9	6
Endometrial polyp	3	2
Chronic endometritis	2	1.3
Simple hyperplasia	2	1.3
Endometrial adenocarcinoma	1	0.6

In case of endometrial findings, proliferative phase of endometrium was the commonest finding in 85 cases (56.6%), followed by senile endometrium in 36 cases (24%). one case (0.6%) of endometrial carcinoma was also noted. Endometrial polyp was seen in 3 cases.

Table 5: Histopathological findings in myometrium

Histopathological diagnosis	No. of cases	%
Leiomyoma	92	61.3
Adenomyosis	33	22
Adenomyosis and leiomyoma	20	13.3
Unremarkable	3	2
Adenomyoma	1	0.6
Adenocarcinoma	1	0.6

92 leiomyomas were noted, followed by adenomyosis in 33 cases. Three cases showed unremarkable myometrium and the cause was uterovaginal prolapse. One case of adenomyoma was also studied. In one case, myometrium was invaded by adenocarcinoma.

Table 6: Histopathological findings in cervix.

Histopathological diagnosis	No. of cases	%
Chronic cervicitis	70	46.6
Utero-vaginal prolapse	45	30
Unremarkable	20	13.3
Papillary endocervicitis	8	5.3
Chronic cervicitis with squamous metaplasia	7	4.6

On histomorphological study of cervical lesions, chronic cervicitis was commonest finding in 70 (46.6%) cases, followed by utero-vaginal prolapse and unremarkable cervix in 45 cases and 20 cases, respectively.

Discussion

Globally, hysterectomy stands as the most common gynecological procedure. Offering a permanent resolution for numerous disorders that impact the uterus and adnexa, this procedure is efficacious in mitigating symptoms and ensuring patient satisfaction [7]. The patients included in this study spanned an age range of 25 to 75 years. The study by Adelusola *et al.* [9] had a mean age of 49.1 years, whereas Verma *et al.* [8] reported a mean age of 50.1 years. Hysterectomies were performed most frequently on women between the ages of 35 and 45 in the present study, which is consistent with findings from Dolon MF *et al.* [10] and Choudhary K *et al.* [11]

In our study, total abdominal hysterectomy with bilateral salpingoophorectomy was the prevailing approach (100 cases, or 66.6%), followed by total abdominal hysterectomy alone (35 cases, or 23.3%). Analogous findings were documented by Patil *et al.* [3] and Ajmera *et al.* [12].

The study observed that fibroid was the most prevalent clinical indication (75; 50%). While Ajmera *et al.* [12] and Archana *et al.* [13] reported similar results, Shakira *et al.* [14] and Sobande *et al.* [15] presented findings that contradicted our own.

The proliferative phase of endometrium was the most frequently observed endometrial finding in the current study, comprising 85 cases (56.6%). Senile endometrium was detected in 36 cases (24%). Additionally, one case (0.6%) of endometrial carcinoma was identified. In three cases, endometrial polyps were observed. This finding was consistent with previous research conducted by Khunte *et al.* [16] and Patil *et al.* [3].

In our research, 33 instances of adenomyosis were detected following 92 leiomyomas. Myometrium was found to be unremarkable in three instances, with uterovaginal prolapse being the underlying etiology. Furthermore, an adenomyoma case was investigated. Adenocarcinoma had infiltrated the myometrium in one instance. Chronic cervicitis exhibited the highest frequency of histomorphological observations in 70 cases (46.6%) of cervical lesions. A utero-vaginal prolapse was observed in 45 cases, while an unremarkable cervix was detected in 20 cases. The results obtained were similar to those reported by Patil *et al.* [3] and Khunte *et al.* [16]. Verma *et al.* [8] reported comparable findings in the endometrium and cervix; however, the myometrium exhibited the highest prevalence of adenomyosis.

A substantial percentage (70–100%) of the preoperative clinical diagnoses that were confirmed by histopathological reports in our study. Comparable to our findings, Jaleel R *et al.* [17] reported nearly identical results. One hundred percent correlation exists between histopathological reports and the preoperative clinical diagnosis of cervical fibroid, uterovaginal prolapse, and adenomyosis. Without further investigation, the present inquiry was constrained to its exclusive limitation.

Conclusion

This investigation demonstrates that histopathological analysis is crucial for all hysterectomy specimens, notwithstanding the specimen's apparent normalcy, due to a few incidental findings. Additionally, clinical observation may fail to detect certain double pathologies; therefore, clinicopathological correlation has been demonstrated to be crucial in all hysterectomy cases in order to enhance post-operative management and clinical

outcome.

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