Histopathological Analysis of Uterine Lesions in Hysterectomy Specimen at a Tertiary Hospital

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Abstract

Background: 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.The gynecological specimen forms the substantial proportion of work load in histopathology laboratory. Hysterectomy is the most common major gynecological operation in the world which can be done through either abdominal or vaginal routes.

Objective: To find the histopathological features of various lesions of uterine body and cervix, their profile and distribution of different lesion in relation to age.

Method: This descriptive type of study was carried out with 808 patients who undergone hysterectomy operation through either abdominal or vaginal routes. After fixation, necessary blocks were obtained from the uterus that includes endometrium, myometrium, lower uterine segment and cervix. The tissue pieces were then processed manually and histopathological slides were made using hematoxylin and eosin stain.

Results: All of 808 cases, the most common type of hysterectomy was abdominal hysterectomy comprising of 651 cases (80.57%) followed by vaginal hysterectomy comprising 157 cases (19.43%). Most of the abdominal hysterectomy was done in 36-45 years age group and in older age group most of the hysterectomy was done by vaginal route. Chronic cervicitis is the most common cervical pathology in this study which was 58.42 %. Cervical intraepithelial neoplasia (CIN), mild and moderate were 31(3.84%) cases and 10(1.24%) cases respectively and cervical cancer (invasive squamous cell carcinoma) was found 11(1.35%) cases in which most of the cases 7(63.64%) were in between 46-50 years age group. Pathological lesion of body of uterus shows most of the cases adenomyosis and leiomyoma which were 297(36.76 %) cases and 309 (38.24 %) cases respectively and 7 (0.87%) patients had endometrial adenocarcinoma.

Conclusion: Uterine fibroids and adenomyosis were the most common benign conditions in hysterectomy specimens in our community with peak incidence at fourth decade while cervical cancer peaked at the same age group and endometrial adenocarcinoma peaked at fifth decade. At the same time, vaginal hysterectomy was performed exclusively for utero-vaginal prolapse.

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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 gynecologicalpractice.[1]The female reproductive system includes uterus, two ovaries and two fallopian tubes. Uterus consists of cervix, lower uterine segment, endometrium and myometrium, which are continuously stimulated by ovarian hormones, denuded monthly of its endometrial mucosa and inhabited periodically by fetuses.[2]

The uterus being a vital reproductive and hormone responsive organ is subjected to a variety of physiological change, benign and malignant disorders.[3]Most common complaints presented are per vaginal bleeding, vaginal discharge, pain in abdomen, menstrual irregularity, difficulty in micturition, and post-menopausal bleeding and sensations of something coming of vagina etc.[4]

Many treatment options are available now a day including medical and conservative surgical procedures but hysterectomy remains the most preferred method to manage gynecological disorders.[3] Hysterectomy can be done by the vaginal or the abdominal routeor with laparoscopic assistance.[5]This helps in adequate sampling of the required and suspected areas and thus help in diagnosis of various lesions without any error of sampling.[1]

This study is entitled to study various gross and histopathologicalfindings in body of uterus and cervix of the hysterectomy specimens received.

The objective of the study was to see the histopathological features of various lesions of uterine body and cervix, their profile and distribution of different lesion in relation to age.

Methods

This descriptive type of study was carried out withpatients who undergone hysterectomy operation and specimens received in the department of pathology in Ad-din Women's Medical College Hospital during the period of January' 2016 to December' 2017.Eight hundred and eight patients were selected for the study purposively those who were meet the inclusion criteria.

Hysterectomy specimens of female patients with age 26 or more were with uterine and cervical indications for hysterectomy irrespective of type 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 were received in 10 % formalin.After 24 hours fixation, the specimens were examined grossly and necessary blocks were obtained from the uterus that includes endometrium, myometrium, and lower uterine segment. Additional bits were taken depending on the pathology present, if any, which included a minimum of 3 blocks from the lesion. Similarly, 2 bits were obtained from cervix that includes endocervix and ectocervixfrom both lips of cervix. Minimum 3 blocks from the lesion, if any were also obtained.

The tissue pieces were then processed manually andparaffin blocks were made and care was taken to ensure proper labeling of the paraffin blocks.Histopathological sections were taken on slides using microtome and water bath. The slides werethen stained with hematoxylin and eosin stain.

Results

A total of 808 patients were included in this study on the basis of inclusion criteria. Age distribution ranged from 26 years to 80 years. The patients are divided into nine age groups which are shown in Table I.

Table l: Distribution of patients according to age

Age in Years	Number of cases	Percentage (%)
26-30	42	5.20
31-35	78	9.65
36-40	162	20.05
41-45	219	27.10
46-50	156	19.31
51-55	48	5.94
56-60	53	6.56
61-65	26	3.22
66-70	19	2.35
71-75	3	0.37
76-80	2	0.25
Total	808	100

In this study among 808 patients, the most common type of hysterectomy was abdominal hysterectomy comprising of 651 (80.57%) cases followed by vaginal hysterectomy comprising 157(19.43%) cases .This is illustrated in figure 1.

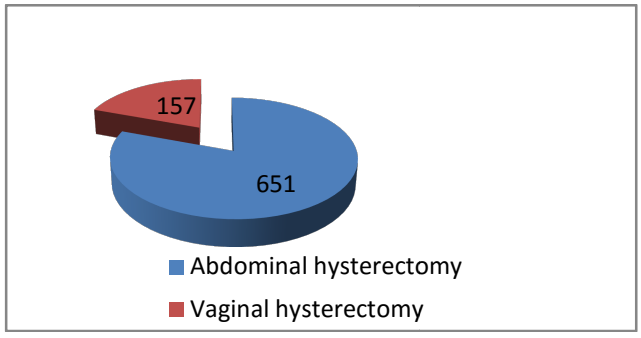


Figure 1. Types of hysterectomy(n=808).

Most of the abdominal hysterectomy was done in 36-45 years age group and in older age group most of the hysterectomy was done by vaginal route. 651 cases of abdominal hysterectomy and 157 cases of vaginal hysterectomy in different age groups are shown in table II and table III respectively.

Table II: Abdominal hysterectomy in different age groups(n=651).

Age in Years	Number of cases	Percentage (%)
26-30	42	6.45
31-35	73	11.21
36-40	149	22.89
41-45	204	31.34
46-50	125	19.20
51-55	31	4.76
56-60	21	3.23
61-65	4	0.61
66-70	2	0.31
71-75	0	0
76-80	0	0
Total	651	100

Table III: Vaginal hysterectomy in different age groups(n=157).

Age in Years	Number of cases	Percentage (%)
26-30	0	0
31-35	5	03.18
36-40	13	08.28
41-45	15	09.55
46-50	31	19.75
51-55	17	10.83
56-60	32	20.38
61-65	22	14.01
66-70	17	10.83
71-75	3	01.91
76-80	2	01.28
Total	157	100

Cervical Pathology

All of the 808 cases of hysterectomy cases, cervical pathology was categorized intochronic cervicitis, chronic cervicitis with squamous metaplasia, CIN-I, CIN-II, CIN-III and invasive squamous cell carcinoma. These findings are shown in Table –IV.

Table IV: Cervical pathology (n= 808).

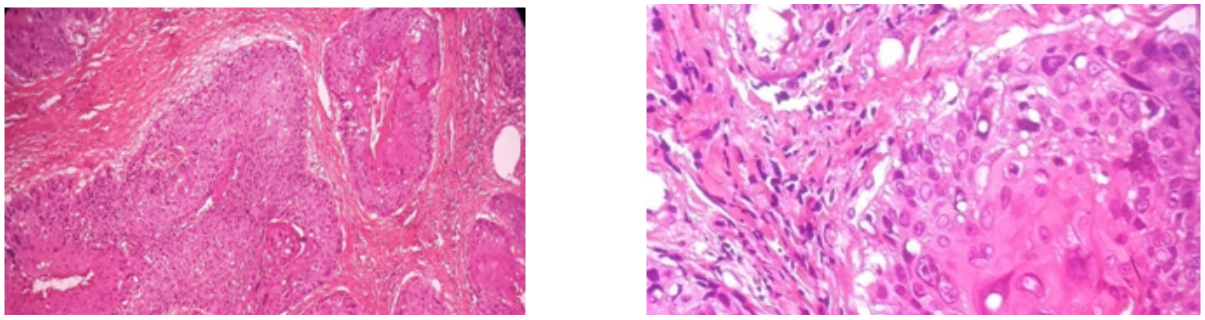
Pathological lesion of cervix	Number of cases	Percentage (%)
Chronic cervicitis	472	58.42
Chronic cervicitis with squamous metaplasia	284	35.15
CIN-I	31	3.84

CIN-II	10	1.24
CIN-III	0	0
Invasive squamous cell carcinoma	11	1.35
Total	808	100

Additional pathological lesion was found in cervix which were endocervical polyp and comprising 18 cases (0.02%) and cervical prolapsed which was foundall of the 157 cases of vaginal hysterectomy. Most of the cervical carcinoma (Figure 2) was in 46-50 years age groups and these 11 cases of cervical carcinoma in different age groups are shown in Table V.

Table V: Cervical carcinoma in different age groups(n=11).

Age in Years	Number of cases	Percentage (%)
26-30	0	0
31-35	0	0
36-40	0	0
41-45	1	9.09
46-50	7	63.64
51-55	1	9.09
56-60	1	9.09
61-65	1	9.09
66-70	0	0
71-75	0	0
76-80	0	0
Total	11	100



A B

Figure 2. Cervical carcinoma (Microscopic picture A.10X and B.40X view).

All of the 808 cases of hysterectomy cases, pathological lesion of body of uterus were found chronic endometritis, adenomyosis, endometrial polyp, leiomyoma, endometrial hyperplasia, invasive mole, choriocarcinoma and endometrial adenocarcinoma. These findings are shown in Table –VI.

Table VI: Types of pathological lesion in body of uterus of 808 cases of hysterectomy patients.

Pathological lesion of body of uterus	No of cases(N=808)	%
Chronic endometritis	26	3.22
Endometrial polyp	45	5.57
Adenomyosis	297	36.76
Endometrial hyperplasia	4	0.50
Leiomyoma	309	38.24
Invasive mole	1	0.12
Choriocarcinoma	1	0.12
Endometrial adenocarcinoma	7	0.87

Large number of patients had adenomyosis (Figure 3) and leiomyoma (Figure 4&5) which were297(36.76 %) cases and 309 (38.24 %) cases respectively and 7 (0.87%) patients had endometrial adenocarcinoma(Figure 6&7). These pathological lesions in different age group are shown in Table VII, Table VIII and Table IX respectively.

Table VII: Adenomyosis in different age groups

Age in Years	Number of cases	Percentage (%)
26-30	4	1.35
31-35	22	7.41
36-40	63	21.21
41-45	112	37.71
46-50	69	23.23
51-55	16	5.39
56-60	7	2.36
61-65	3	1.01
66-70	1	0.33
71-75	0	0
76-80	0	0
Total	297	100

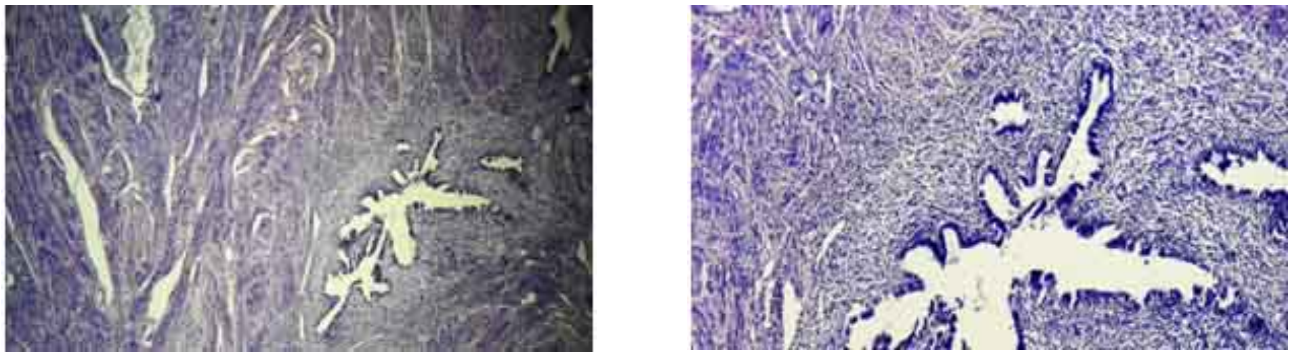


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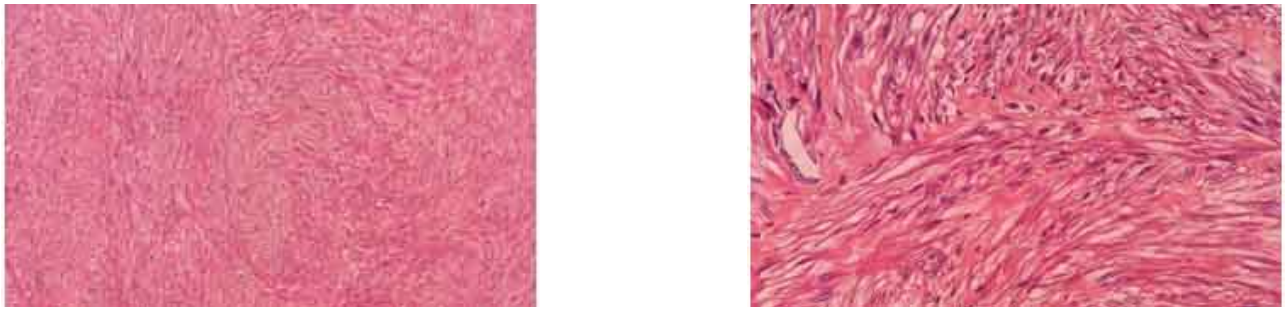
Figure 3. Microscopic picture of adenomyosis (A 4X and B 10X view)

Table VIII: Leiomyoma in different age groups

Age in Years	Number of cases	Percentage (%)
26-30	21	6.80
31-35	39	12.62
36-40	71	22.98
41-45	102	33.01
46-50	53	17.15
51-55	10	3.24
56-60	8	2.59
61-65	2	0.65
66-70	3	0.96
71-75	0	0
76-80	0	0
Total	309	100

Figure 4. Leiomyoma of uterus (Gross)



A B

Figure 5. Leiomyoma of uterus (microscopic picture A. 10X and B. 40X view)

Table IX: Endometrial adenocarcinoma in different age groups

Age in Years	Number of cases	Percentage (%)
26-30	0	0
31-35	0	0
36-40	1	14.29
41-45	1	14.29
46-50	0	0
51-55	2	28.57
56-60	2	28.57
61-65	0	0
66-70	1	14.28
71-75	0	0
76-80	0	0
Total	7	100

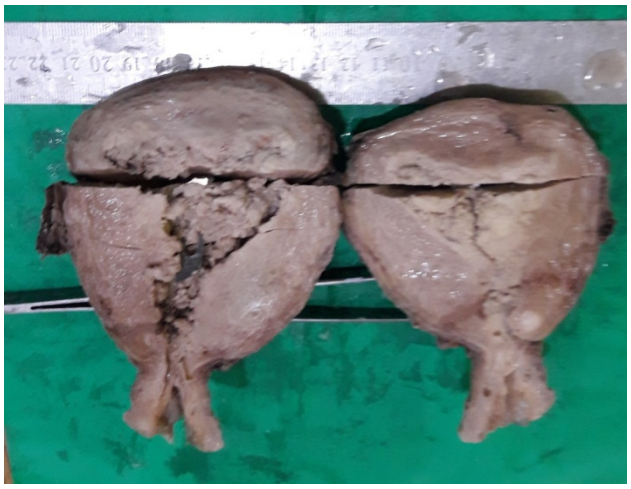


Figure 6. Endometrial Adenocarcinoma (Gross)

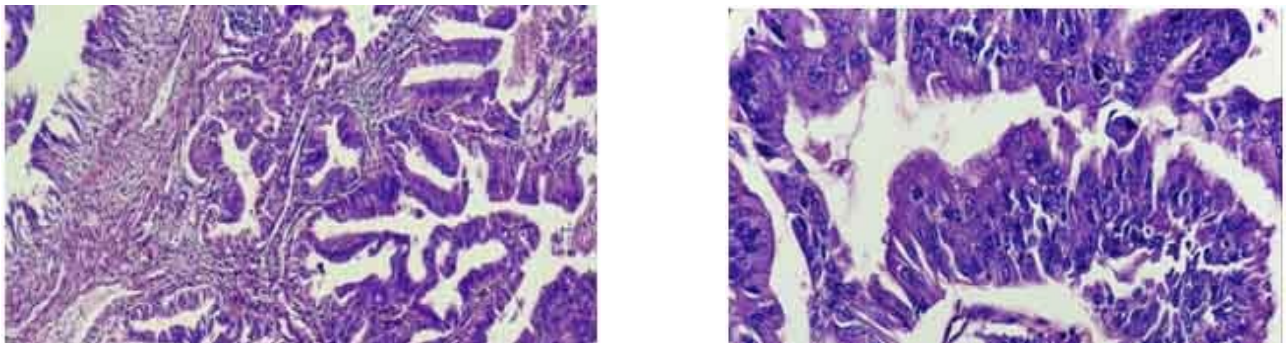


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Figure 7. Endometrial adenocarcinoma(microscopic picture A. 10X and B. 40X view)

Discussion

Hysterectomy is the most commonly performed major gynecologicalsurgery throughout the world. It is a successful operation in terms of symptoms relief and patient's satisfaction. It also provides definitive cure too many diseases involving uterus as well as adnexae.[6]In the present study, maximum number of patients were seen in the age group 41-50 years age which was 46.41 %. In an analysis of 1000 consecutive operation by Watt et al[7]most number of cases 45.2 % in the same age group. Various study done by Vijay Domblae et al,[1] Rather GR et al,[8]Ramchandran T et al,[9] and Ajmera et al[10] had similar findings. So, in present study age group of the patients near about same.

The commonest surgical approach in the present study is abdominal hysterectomy which was 80.57% followed by vaginal hysterectomy which was 19.43%.In the study of Vijay Domblae et al,[1] found 69.6 % abdominal hysterectomy and30.4% vaginal hysterectomy, and Ajmera et al[10] found 64.1 % abdominal hysterectomy and36.9 % vaginal hysterectomy. In the present study abdominal hysterectomy were more than other study. It may be due to number of cases is high in this study.

Chronic cervicitis is most common in adult females, at least at microscopic level. It is commonest cervical pathology in this study which was 58.42% but when it is included

with chronic cervicitis with squamous metaplasia, it is 93.57%. Vijay Domblae et al[1] also found chronic cervicitis is thecommonest cervical pathology which was 70 %.

Cervical intraepithelial neoplasia (CIN) is considered as preneoplastic lesion for the development of cervical cancer. In the present study, mild and moderate CIN were 31(3.84%) cases and 10(1.24%) c**a**ses respectively. Vijay Domblae et al[1] found 0.4% mild CIN in his study. In present study CIN is higher than other study which requires further investigation like HPV to find out the cause.

In the present study, cervical cancer (invasive squamous cell carcinoma) was found 11(1.35%) cases, Vijay Domblae et al[1] and Watts WF et[7] al found 1.15 % and 1.21 % cases respectively which are close to the present study. In the present study, most of invasive squamous cell carcinoma were in between 46-50 years age group which was 7(63.64%) cases, but Hussain A. Sattar[11] mentioned that peak incidence of squamous cell carcinoma at the age of about 45 years which is also close to the present study.

In the present study, endometrial adenocarcinoma was found 7 (0.87%) cases; Vijay Domblae et al[1] found it was 0.4% of cases. In the present study, most endometrial adenocarcinoma was found between the ages 51-60 years age group which was 4(57.14%), but Hussain A. Sattar[11] mentioned that peak incidence of endometrial adenocarcinoma between the ages 55 and 65-years age group. Vijay Domblae et al[1] found that endometrial adenocarcinoma between the ages 41-50 years ages. This reflects age incidence of endometrial adenocarcinoma varies in different countries.

In the present study, Leiomyoma is the most common myometrial lesion which was found 38.24 % cases.Most of the studies done on histopathological study of hysterectomy specimen reveal uterine fibroid is the most common pathology in the uterus like present study. Studies done by Vijay Domblae et al[1] , Watts WF etal[7] , Ranabhat SK et al[12]and Jha R et al[13]showed uterine fibroid were 25.5 %, 41.5 %, 30.3% and 27.1% respectively.

In the present study, adenomyosis is the second most common myometrial lesion which was found 36.76 %. Vijay Domblae et al,[1] Sobande AA et al[14]found in their study 12.8% and 22.7 % cases of adenomyosis respectively. In present study adenomyosis is higher than other study, it may be due to number of cases is high in this study.

Conclusion

Uterine fibroids and adenomyosis were the most common benign conditions in hysterectomy specimens in our community with peak incidence at fourth decades, while cervical cancer peaked at the same age group and endometrial adenocarcinoma peaked at fifth decades. At the same time, vaginal hysterectomy was performed exclusively for utero-vaginal prolapsed.

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