Original Research Article

Histopathological study of hysterectomy specimens

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Abstract

Introduction: Women worldwide suffer from gynecologic and obstetric disorders that require hysterectomy as a treatment option. Uterus, a vital reproductive organ is subjected to many benign and malignant diseases. Many treatment options are available including medical and conservative surgical but hysterectomy still remains the most common gynecological procedure performed.Hysterectomy forms the major bulk among the specimens received in our histopathology laboratory, hence this study was undertaken to know the incidence and also understand the variety of lesions in the hysterectomy specimen.**Materials and methods:**The present study was done in the Department of Pathology, KIMS, HUBLI from June 2010 to May 2012, all types of hysterectomy specimens received during this period were studied, and the tissue was processed and stained with routine H&E on paraffin sections.**Results:**Total numbers of hysterectomy specimen received were 1077. In Endometrium, non-neoplastic lesions were 36 (3.3%). Among neoplastic lesions, benign were 38 in which 18 cases of leiomyomatous polyp and 20 cases of adenomatous polyp. Malignant were 13 (1.2%) in which 8 cases of endometrial adenocarcinoma and 5 cases of endometrial stromal sarcoma. In myometrium, the non-neoplastic lesions were 173 and neoplastic were 343 cases. In non-neoplastic lesions 170 cases were of adenomyosis and 3 cases were of chronic inflammation. Incidence of leiomyoma in present study was 31.8% (343/1077) with mean age of 42.42 years.In cervix there were 5(0.46%) cases of precancerous lesions, 8(0.75%) benign tumours and 22(2.04%) malignant tumours. Among 22 malignant tumours of cervix, 18 (82%) cases were squamous cell carcinoma, 2 (9%) cases of adenocarcinoma, 1 (4.5%) case of adenosquamous carcinoma and 1 (4.5%) case of carcinosarcoma.**Conclusion:** The present study reveals that the majority of tumours were benign, which were leiomyoma's in myometrium, constituted 31.8% in the hysterectomy specimens, with peak age incidence in 4th decade. Among the malignant lesions in the study, majority were carcinoma cervix,which constituted 39% of all malignant neoplasms followed by endometrial malignancies. Majority of patients with malignant neoplasms in the study were in 5th decade.

Keywords: Hysterectomy, Leiomyoma, Carcinosarcoma Cervix

Introduction

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 by changing levels of ovarian hormones.Two cardinal clinical manifestations of gynecological disease are abnormal uterine bleeding and infertility. The clinical differential diagnoses of abnormal uterine bleeding provide a frame work for detailed discussion of uterine morphology and correlation of endocrinologic disturbance with morphology[1].There are many indications for hysterectomy and the uterus can be removed using any of a variety of techniques and approaches, including abdominal, vaginal, or laparoscopic[1].Uterus, a vital

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reproductive organ is subjected to many benign and malignant diseases. Many treatment options are available including medical and conservative surgical but hysterectomy still remains the most common gynecological procedure performed worldwide[2]. It is the definitive cure for many of its indications which include dysfunctional uterine bleeding, fibroids, utero-vaginal prolapse, endometriosis and adenomyosis, pelvic inflammatory disease, pelvic pain, gynecological cancers and obstetric complications. Ultimate diagnosis is only on histology, so every hysterectomy specimen should be subjected to histopathological examination [3].The present study is aimed at a detailed histopathological evaluation of all lesions of hysterectomy specimens.

Aims and objectives

1) To study the histopathological features of varied lesions in hysterectomy specimens in KIMS, Hubli.
2) To study the incidence and distribution of various types of lesions in the hysterectomy specimens in KIMS, Hubli.

Material and methods

This prospective study consists of 1077 hysterectomy specimens collected over a period of two years from June 2010 to May 2012, in the Department of Pathology KIMS, Hubli.The material was obtained from the clinical examination and clinical records. Following the receipt of surgical specimens in 10% formalin, it was allowed to fix for 24-48 hours.Detailed gross examination was carried out and multiple parallel sections were made and examined, the tissue bits from representative areas were taken for histopathological examination and paraffin blocks prepared, the number of blocks prepared depended upon the size and morphology of tumours. Multiple sections of three to five microns thickness were cut and routinely stained with hematoxylin and eosin stain and studied.

Inclusion Criteria: All the hysterectomy specimens received in the Department of Pathology.

Exclusion Criteria: Partial hysterectomy specimens without cervix are excluded from study.

Results

During the Present study period, total specimens received were 7825, and specimens from the Gynecological Department were 2084, of which 1077 (52%) were hysterectomy specimens.Hysterectomy specimens accounted for 13.8% of all specimens received in our Department within the study period.In present study patients age range from 20-90 years, with a mean age of 44.75 years. The youngest patient in the study was 20 years and oldest was 90 years of age. The maximum numbers of hysterectomies were noted in patients in the 5th decade, with 391 (36.30%) cases, followed by 389 (36.12%) in 4th decade.The distribution of neoplastic and non-neoplastic lesions in hysterectomy specimens, out of 1077 [Fig 1] (100%) cases, non-neoplastic were 561 cases (52%), benign tumors were 460 cases (43%) and malignant tumours were 56 cases (5%).

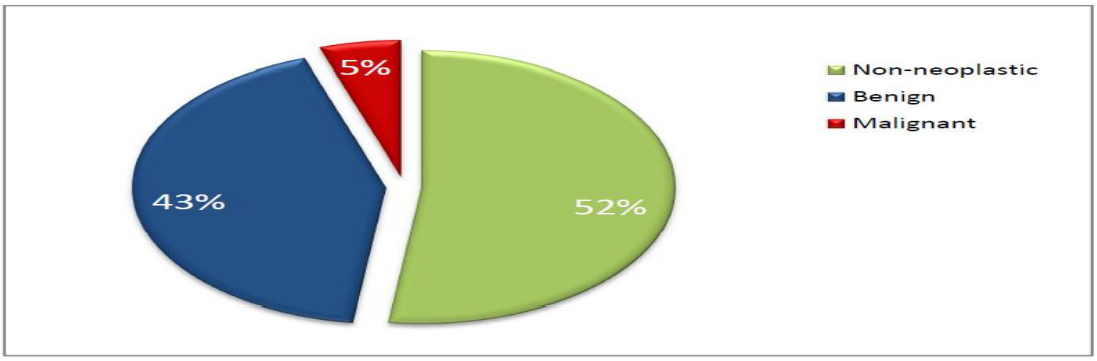

Fig 1: Distribution of neoplastic and non-neoplastic lesions in hysterectomy specimens

Distribution of lesions in endometrium out of 1077 cases 990 were unremarkable, 36 cases were non-neoplastic and 51 cases were neoplastic.In non-neoplastic lesions 3 cases were tubercular endometritis and 5 cases of nonspecific endometritis and 28 cases were hyperplasia. Among 28 hypoplasia cases, 26 cases were simple hyperplasia without atypia and one case of simple hyperplasia with atypia and one case of complex hyperplasia with atypia.

Table 1: Distribution of tumors in endometrium

Tumours	No. of cases	Percentage (%)
Benign	38	75
Malignant	13	25
Total	51	100

Out of total 51 tumours, shown in table 1, benign were 38 (75%) and malignant 13 (25 %) cases.The incidence of endometrial polyps in the present study was 3.5% (38/1077). Among 38 benign tumours all were endometrial polyps, of which 20 adenomatous polyps and 18 leiomyomatous polyps.The age distribution of patients of with endometrial polys,endometrial polyps were seen in all age groups and majority 20 (53%) were seen.between the ages of 41 to 50 years, followed by 34 (13%) in between the age group of 31 to 40 years. Incidence of endometrial carcinoma was 1.2 %. (13/1077), shown in Fig 1. The distribution of malignant tumours in endometrium, among total 13 malignant tumours, 8 (61%) cases were of endometrial adenocarcinoma and 5 (39%) cases were endometrial stromal sarcomas shown in Fig 2.The present study the youngest patient was of 30 years of age and the oldest was of 72 years, with mean age of patients with carcinoma endometrium was 50 years.The age distribution of endometrial carcinoma shown in Fig 2, the peak age incidence was seen in between 41 to 60 years of age with 6 cases (46%).

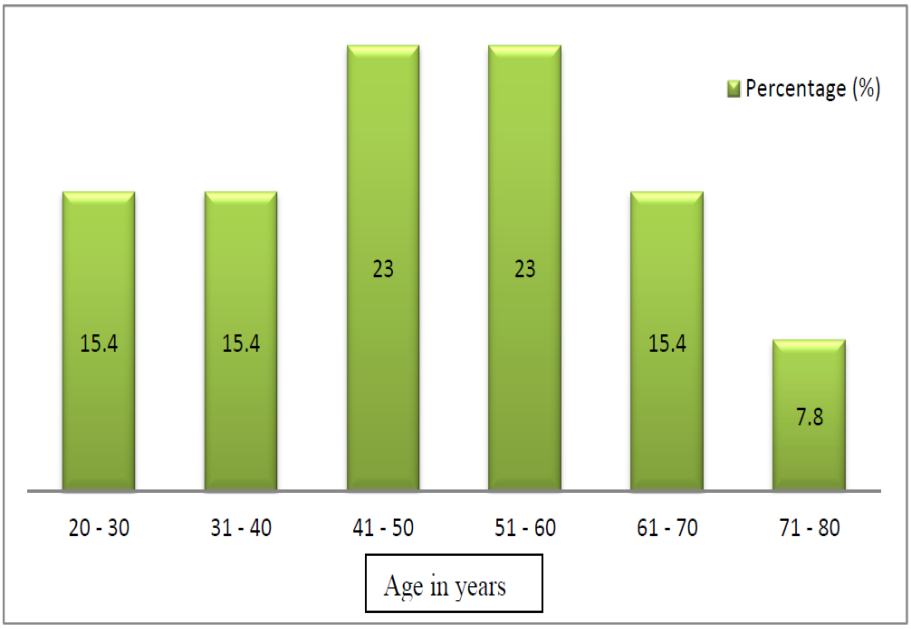

Fig 2: Age distribution of endometrial carcinoma

The distribution of lesions in myometrium, the non-neoplastic lesions were 173 and neoplastic were 343 cases. In non-neoplastic lesions 170 cases were of adenomyosis and 3 cases were of chronic inflammation. Out of 170 cases of adenomyosis, 49 cases were associated with leiomyoma. In neoplastic lesions all 343 cases were leiomyoma.The incidence of adenomyosis in present study was 15.7%. In adenomyosis age range of patients was from 27 to 88 years, with mean age of 44.68 years. Majority of patients with adenomyosis were between 41 to 50 years (43%).The incidence of leiomyoma in present study was 31.8% (343/1077). In leiomyoma age range of patients were from 25 to 70 years, with mean age of 42.42 years.The age distribution of patients with leiomyoma, the peak age of patients with leiomyoma were between 31 to 40 years 157 (46%) cases, followed by 147 (43%) cases in between 41 to 50 years. In present study one case of invasive hydatiform mole was encountered in 22 years old patient.

Table 2: Distribution of lesions in cervix

Distribution of lesions in cervix			No. of cases	Total
Non-neoplastic	Chronic cervicitis		1042	1042
Pre neoplastic	LSIL		3	5
	HSIL		2	
Neoplastic	**Benign**	Leiomyoma	2	8
		Leiomyomatous polyp	4	
		Adenomatous polyp	2	
	Malignant	Squamous cell carcinoma	18	22
		Adenocarcinoma	2	
		Adenosquamous carcinoma	1	
		Carcinosarcoma	1	
Total			1077	1077

The distribution of various lesions of cervix is depicted in table 2, there were 5 precancerous lesions, 8 benign tumours and 22 malignant tumours.In benign tumours 2 were cervical leiomyoma and 6 cases of polyps, of which 4 were leiomyomatous polys and 2 adenomatous polyps.Incidence of carcinoma cervix is 2.04 %. In 22 malignant tumours of cervix shown in fig 3,18 (82%) cases were of squamous cell carcinoma shown in Fig 3, 2 (9%) cases of adenocarcinoma, 1 (4.5%) case of adenosquamous carcinoma and 1 (4.5%) case of carcinosarcoma.

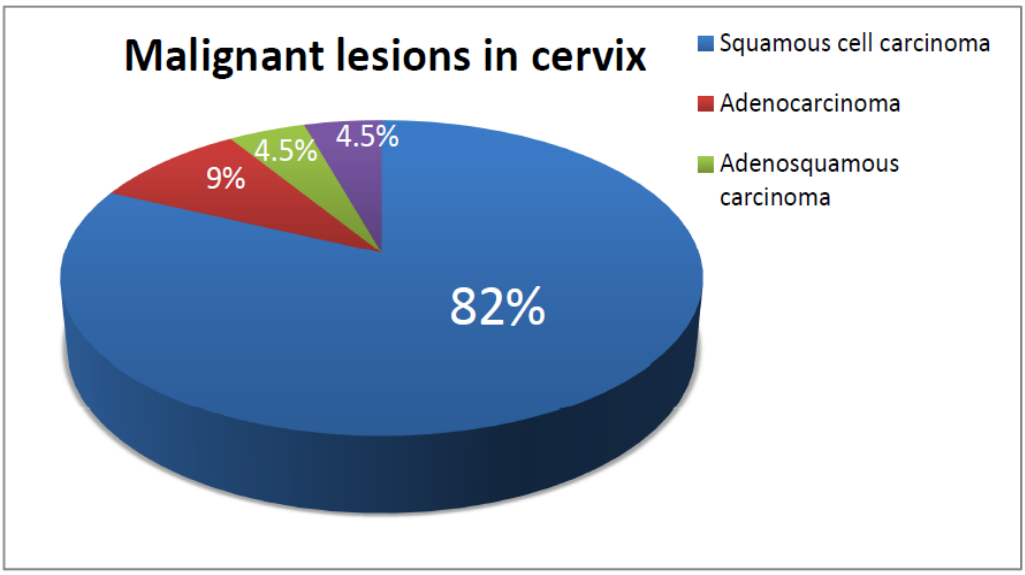

Fig 3: Malignant tumours of cervix

In present study age range of cervical carcinomas were from 30 years to 65 years, with mean age of 45.83%. The age distribution of patients in carcinoma cervix, peak age incidence was noted between 41 to 60 years with 14 (64%) cases, followed by 6 cases in between the age group of 31 to 40 years with 6 cases (27%), and one case each was seen in third and seventh decade.

Table 3: Comparison of age range and peak age incidence of hysterectomy.

SI No.	Study groups	Age range	Peak age group	Percentage (%)
1	Walter F.Watts, et al	19-87	41-50	45.20
2	Kasturi Lal, et al	31-65	41-50	48.57
3	Ajmera Sachin K et al	30-94	41-50	31.64
4	**Present study**	**20-90**	**41-50**	**36.30**

In the present study age range of the patient shown in table 3 were between 20 to 90 years with majority of patients in age group of 41-50 years (36.30%), which was similar to Walter F. Watts et al's [4] study, in which age range of patients were from 19 to 87 years, in Kasturi Lal et al's [5] study the age ranges of patients were from 31 to 65 years and in Ajmera Sachin K et al's [6] study the age range was seen between 30 to 94 years. And the peak age incidence in present study and all others study was in between 41-50 years of age.In the present study the incidence of endometrial polys was 3.5% (38/1077), the incidence was similar to other studies done by Layla S. Abdullah [7] was 5.5 % (10/179) and Mahmoud Khaniki et al's [8] was 2.2% (24/1095) . The peak age incidence of endometrial polyps in present study was in between 41-50 years with 52% (20/38) and in the study done by Mahmoud Khaniki et al's [8] the peak age incidence of endometrial polyps were seen in between the age group of 45 to 60 years with 54% (13/24).In the present study, among 13 cases of carcinoma endometrium , 3 cases each were seen in 5^{th} and 6^{th} decades, followed by 2 cases in 3^{rd}, 4^{th} and 7^{th} decades and 1 case in 8^{th} decade. Study shows the incidence of carcinoma endometrium in present study was 1.2% (13 out of 1077 cases). The incidence in Walter F. Watts et al's [4] study was 0.3% (3/1000) and the incidence in Samaila et al's [9] study was 1.9% (6/317), which correlates with present study. But in the Mahmoud Khaniki et al's [8]study the incidence was 7.3% (80/1095) and the incidence in G. Gupta et al's [10] study was 9.61% (10/108) which was higher when compared with present study.In the present study the peak age incidence of carcinoma endometrium was in between 41 to 60 years , shows the peak age incidence in P.J.D. Milton, et al's [11] study was between 55-64 years, in Gilbert P. et al [12] study incidence was in between 50-59 years and in Samaila et al's [9] study the incidence was in between 40-49 years. The age incidence of carcinoma endometrium in present study and other studies were comparable, as shown in table.The incidence of adenomyosis in present study was 15.7% (170/1077) which is comparable with Kasturi Lal et al's [5] study which was 15% (35/233). The incidence was much higher in H. Sheik et al's [13] study with 39% (164/419) and lower incidence noted in Samaila et al's[9] study which with 6% (19/317). Table shows the peak age incidence of adenomyosis in the present study was in 5^{th} decade which was same in all other studies done by Kasturi Lal et al [5] H. Sheik et al [13] and Samaila et al [9].In the present study the incidence of leiomyoma was 31.8% (343/1077). The incidence was comparable with the G. Gupta et al's [10] study which was 35% (175/500), and the incidence was higher in studies done by Walter F. Watts et al [4] which was 41.5% (415/1000) and Samaila et al [9] which was 68.8% (218/317).In the present study the peak age incidence was in 4th decade with 157 cases (46%) followed by 147 cases (43%) in 5^{th} decade. As compared with Samaila et al [9]and G. Gupta et al's [10] study the peak age incidence was seen in higher age group, which werein 5^{th} decade.In the present study the incidence of carcinoma cervix was 2.04 % (22/1077) cases. When compared with other studies, the incidence was lower in Walter F. Watts et al's [4] study with 0.7% (7/1000) and M L Solapurkar [14] study with 0.36% (2/251). And the incidence was higher when compared to present study in studies done by Samaila et al [9] which was 3.78% (12/317) and Kasturi Lal et al[5] which was 8.57% (3/35).The peak age incidence of cervical carcinoma in present study was noted in between 41 to 60 years of age with 14 cases (64 %). The peak age incidence is comparable with Samaila et al [9] study was seen in between the 40 to 49 years, but in M L Solapurkar [14] study the peak age incidence was lower between 36 to 40 years when compared to present study.In the present study the out of 22 malignant tumours of cervix, majority 82% (18/22) cases were squamous cell carcinomas, 9% (2/22) cases of adenocarcinoma, 4.5% (1/22) case of adenosquamous carcinoma and 4.5% (1/22) case of carcinosarcoma. When compared with study done by M L Solapurkar [14] , Majority 97.8% (477/488) were of squamous cell carcinomas, followed by 6 cases of adenocarcinoma, 3 cases of adeno squamous carcinoma and 2 cases of carcinosarcoma.

In present study one case of carcinosarcoma of cervix was encountered in a 55 years old patient, with gray

white infiltrating growth in the cervix, microscopy shows malignant epithelial component and malignant mesenchymal components with malignant cartilage. Primary carcinosarcoma of the uterine cervix (MMMTs) are exceptionally uncommon neoplasms, with fewer than 50 documented cases in the literature. [15]

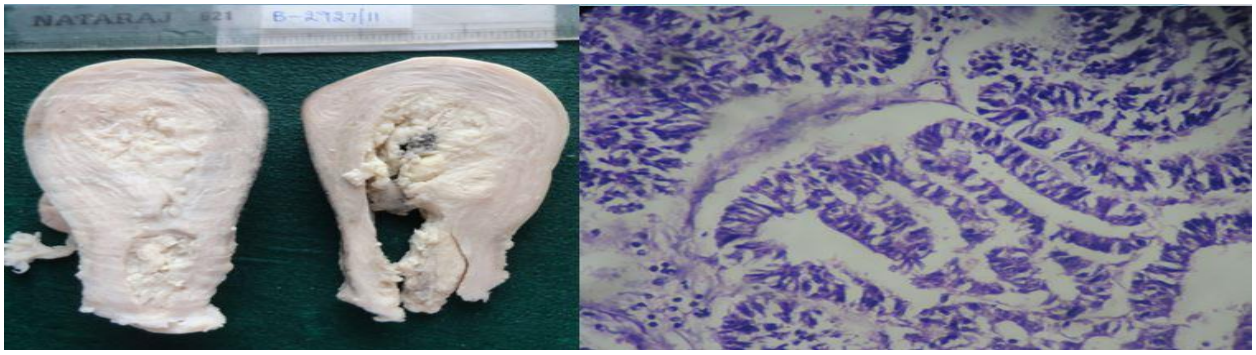

Fig 4:Endometrial carcinoma

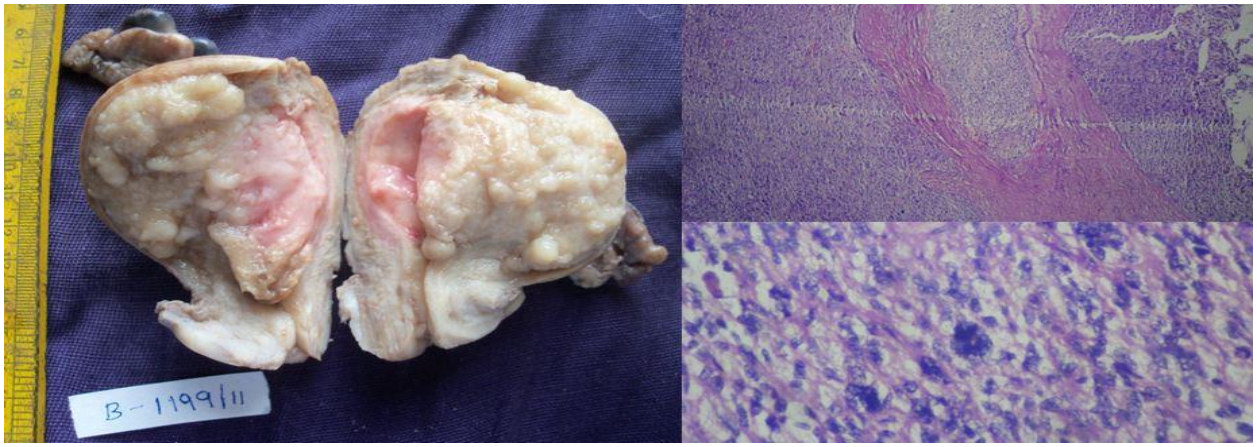

Fig 5:Endometrial stromal sarcoma

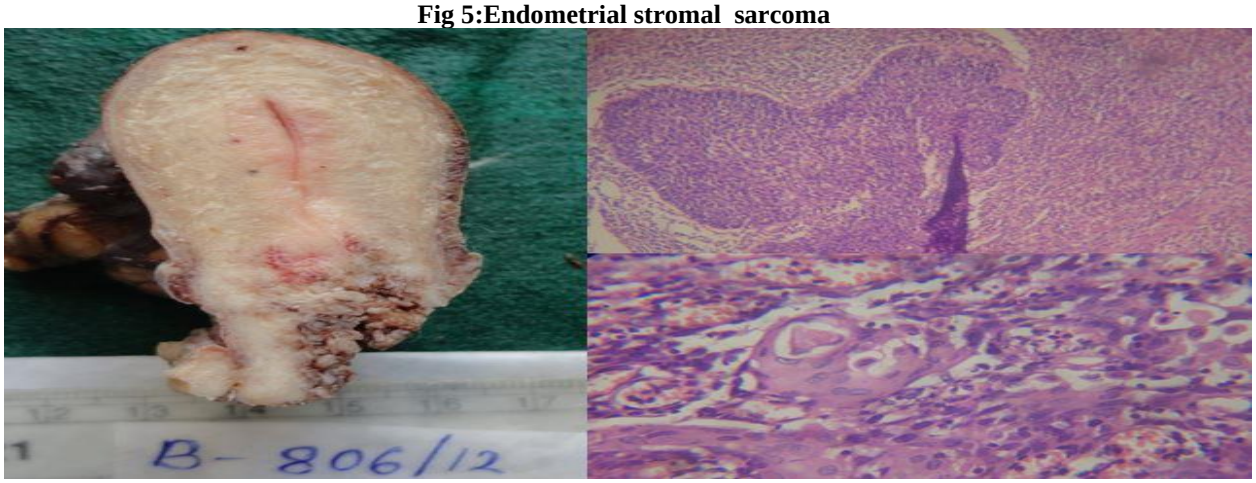

Fig 6:Squamous cell carcinoma

Conclusion

The present study reveals that the majority of tumours were benign, which were leiomyoma in myometrium, constituted 31.8% in the hysterectomy specimens, with peak age incidence in 4th decade. Among the malignant lesions in the study, majority were carcinoma cervix, which constituted 39% of all malignant neoplasms followed by endometrial and ovarian malignancies. Majority of patients with malignant neoplasms in the study were in 5th decade. As hysterectomy specimens are frequently encountered, it need to be studied thoroughly in order to know the different types of lesions.

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