

Original Research Article

Analysis of histopathological examination of the hysterectomy specimens in a north Indian teaching institute

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ABSTRACT

Background: This was a retrospective study in which the histopathological examination (HPE) of the specimens of all the hysterectomies done for the non-oncological causes in the Mayo Institute of Medical Sciences (MIMS), Barabanki, India from January 2015 to July 2016 were analyzed. The aim of the study was to assess the range of pathological lesions in the hysterectomy specimens and correlation of the preoperative diagnosis with the histopathological diagnosis.

Methods: This was a retrospective study which included all the patients who underwent hysterectomy for the non – oncological gynecological causes in Mayo Institute of Medical Sciences, Barabanki, Uttar Pradesh, India over a span of 19 months, from January 2015 to July 2016.

Results: A total of 152 hysterectomies were done for the non-oncological causes in the department of obstetrics and gynecology, MIMS, during the study period. Among these, 95 (62.5%) were done by the abdominal route and 57 (37.5%) were done by vaginal route. Mean age of the patients were 50.86 ± 6.9 years, the mean age for vaginal hysterectomy being higher as compared to the abdominal hysterectomy. Uterovaginal prolapse (37.5%) was the most common preoperative indication, while the fibroid uterus (25.65%) was the commonest indication for the abdominal hysterectomy. Other common indications were dysfunctional uterine bleeding (DUB, 9.87%) and ovarian mass (7.89%). Fibroid uterus in the myometrium, chronic cervicitis in the cervix and functional cysts in the ovaries were the commonest histopathology noted. Adenomyosis was the most missed pathology preoperatively. Patients operated with a preoperative diagnosis of DUB had least HPE correlation. Unremarkable HPE was found in 12.5% cases, all were operated for uterovaginal prolapse

Conclusions: Justification of hysterectomy is proved when the HPE report is compatible with the preoperative diagnosis; hence HPE of all hysterectomy specimens should be done and analyzed.

Keywords: Adenomyosis, Fibroid, HPE, Hysterectomy, Uterovaginal prolapse

INTRODUCTION

Hysterectomy is the removal of the uterus and it is the most common gynecological operation done in the females worldwide. It is considered as the definitive treatment for various benign pelvic pathologies like leiomyoma, dysfunctional uterine bleeding (DUB), chronic pelvic pain, endometriosis, adenomyosis,

uterovaginal prolapse and in some cases of genital tract malignancies.¹

Histopathological analysis of the hysterectomy specimens is mandatory for diagnostic purposes and to assess the pattern of lesions common in the uterus and adenexa in a particular population. The following study was done to assess and analyze the histopathology of the

hysterectomy specimens in a tertiary care rural teaching hospital in north India.

METHODS

This was a retrospective study which included all the patients who underwent hysterectomy for the non – oncological gynecological causes in Mayo Institute of Medical Sciences, Barabanki, Uttar Pradesh, India over a span of 19 months, from January 2015 to July 2016.

All types of hysterectomies were included in the study- abdominal hysterectomy including total abdominal hysterectomy (TAH), TAH with unilateral or bilateral salpingoophrectomy and vaginal hysterectomy done for prolapse and non-prolapse causes.

The histopathological (HPE) reports of the hysterectomy specimens were obtained from the department of pathology.

The corresponding patient information, pre- operative diagnosis, type of surgery and follow up of the patients were obtained from the medical records of the department

of obstetrics and gynecology. The histopathological findings of the endometrium, myometrium, cervix, ovaries and fallopian tubes were recorded.

Preoperative indications were compared with the HPE reports. Justification of the hysterectomy was proved if the histopathology verified the indication for surgery or revealed significant pathology in the specimen. Lesions found in the hysterectomy specimens were categorized as the lesions of the endometrium, lesions of the myometrium, lesions of the cervix and lesions of the ovary. The data was analysed using SPSS for windows.

RESULTS

The results are summarized in Tables 1 and 2. During the study period, a total of 152 hysterectomies were done for various indications.

The histopathological reports of all the hysterectomy specimens were analyzed. Majority of hysterectomies were done by the abdominal route (95 vs 57, p<0.05). Uterovaginal prolapse was overall found to be the most common indication for hysterectomy.

Table 1: Types of hysterectomy and age distribution of patients.

Type of hysterectomy	Number of patients	Percentage	Age distribution (in years)	Mean age (years)
Total abdominal hysterectomy (TAH)	4	2.63	28-32	30.5±1.91
TAH with unilateral salpingo-ophrectomy	14	9.21	28-45	37.07±4.75
TAH with bilateral salpingo-ophrectomy	77	50.66	32-52	49.42±5.92
Vaginal hysterectomy	57	37.5	46-65	57.66±9.42

Fibroid was the next common cause, being the commonest for the hysterectomies done by the abdominal route. Other common causes for abdominal hysterectomy were dysfunctional uterine bleeding and adenomyosis. The age of the patient studied in this particular study ranged from 28 to 65 years, the mean age being 50.86±6.9 years.

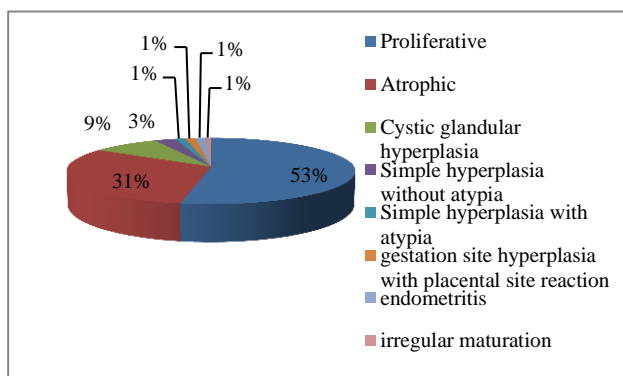


Figure 1: Histopathological analysis of endometrium.

Histopathological analysis of all the hysterectomy specimens revealed that no remarkable pathology was present in 19 (12.5%) patients. All these patients were operated for uterovaginal prolapse and no significant gross pathology was either encountered during surgery.

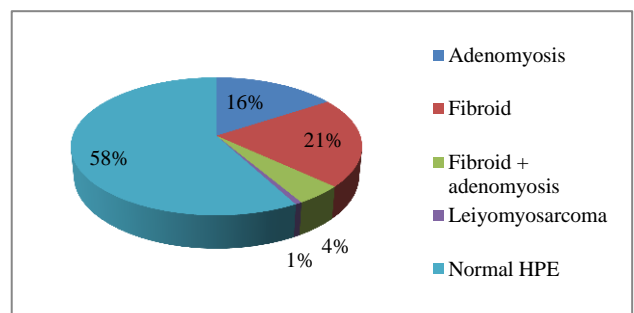


Figure 2: Histopathological analysis of myometrium.

Patients who were operated with a preoperative diagnosis of dysfunctional uterine bleeding (DUB) had least histopathological correlation.

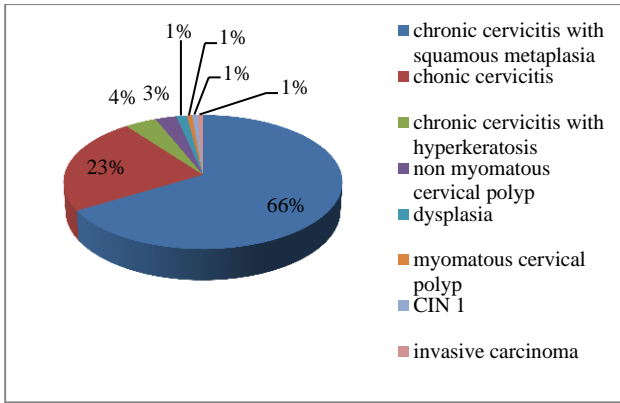


Figure 3: Histopathological analysis of cervix.

The analysis revealed that out of these 35 cases, 13 (37.14%) had cystic glandular hyperplasia, 14 (40%) had adenomyosis, 12 (34.3%) had atypical endometrial hyperplasia, 2 (5.7%) patients had gestational hyperplasia with placental site reaction and 2 (5.7%) had endometrial polyp. These diagnoses were missed pre operatively.

Proliferative endometrium was the commonest pathology noted in the endometrium of all the hysterectomy specimens (53%) (Figure 1). Chronic cervicitis with or without squamous metaplasia was the most common pathological change noted in the cervix (93%). One patient had CIN I and one patient was confirmed to have invasive carcinoma (Figure 3).

Table 2: Preoperative indications and histopathological diagnosis.

Type of hysterectomy	Indications (number of patients)	Combined Indications			Histopathological diagnosis		
		Indication	Number of patients	Percentages	Diagnosis	Number	%
Vaginal Hysterectomy	Uterovaginal prolapse (57)	• Fibroid	39	25.65	• Prolapse	38	25.0
		• DUB	35	9.87	• Fibroid	39	25.6
		• Ovarian mass	12	7.89	• Adenomyosis	14	9.2
		• Chronic PID + TO mass	3	1.97	• Cystic glandular hyperplasia	12	7.9
		• Chronic cervicitis	3	1.97	• Ovarian mass	12	7.9
TAH	Fibroid (3)	• CIN I	3	1.97	• Atypical endometrial hyperplasia	4	2.6
TAH with unilateral salpingo-oophrectomy	Fibroid (8) DUB (2) Ovarian mass (3) Chronic cervicitis (1)	• Leiyo-myosarcoma	1	0.66	• TO mass	3	1.9
			1	0.66	• Chronic cervicitis	3	1.9
					• Endometrial polyp	2	1.3
TAH with bilateral salpingo-oophrectomy	Fibroid (28) DUB (33) Ovarian tumour (9) PID with tubo-ovarian mass (2) Chronic cervicitis (2) CIN I (1) Leiomyosarcoma (1)				• leiomyosarcoma	1	0.65
					• leiomyosarc oma	2	1.3
					• Gestational hyperplasia with placental site reaction	19	12.5
					• Unremarkable		

Of the 91 cases which had removal of ovaries, either unilateral or bilateral, simple follicular cyst was the commonest finding observed. Among the benign tumours, simple serous cystadenoma was the most common followed by mature cystic teratoma and mucinous cystadenoma. One patient had Krukenberg

tumour with primary tumour in intestine (Figure 4). Myometrium was found to be normal in the majority of the specimens. Fibroid and adenomyosis were the most frequent encountered pathologies. One specimen was confirmed to be leiomyosarcoma, which is a very rare malignant myometrial tumour (Figure 2).

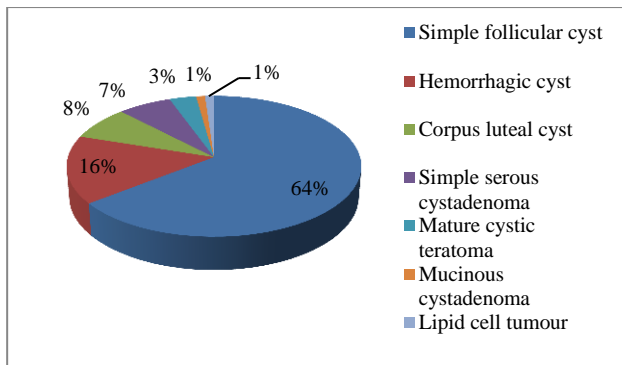


Figure 4: Histopathological analysis of ovaries.

DISCUSSION

Hysterectomy is the most common gynecological surgery done in the females worldwide as it provides definitive cure to a wide range of gynecological diseases, both benign and malignant. The indications to perform this major surgery should always be justified and the pathology should be proved histopathologically. This is so because the hysterectomy is a major surgery which has its own physical, economic, emotional, sexual and medical significance to the women. Histopathological analysis and review is mandatory to evaluate the appropriateness of the hysterectomy.

In this study, 152 hysterectomies were done for the gynecological non oncological causes. The most common route hysterectomy was the abdominal route. The most common procedure was TAH with bilateral salpingoophrectomy (77/152, 50.65%) followed by vaginal hysterectomy (57/152, 37.5%). TAH with bilateral salpingoophrectomy was found to be the commonest type of hysterectomy in various previous studies.²⁻⁴

However, the incidence of vaginal hysterectomies done for uterovaginal prolapse was significantly higher in our study compared to previous studies. The higher incidence of prolapse in this study is due to the population studied. In most of the studies done earlier, the urban population is studied while in this study, rural north Indian population was studied. There is increased incidence of uterovaginal prolapse in the rural population due to increased incidence of unsupervised home deliveries, inadequate rest and nutrition in puerperal period. These factors lead to the damage of the pelvic floor muscles and the supporting ligaments of the uterus, thus leading to increased incidence of pelvic organ prolapse in rural population.

The age of the patient studied in this particular study ranged from 28 to 65 years, the mean age being 50.86 ± 6.9 years. The age was higher when compared to the previous similar studies in which mean age was 45 years.^{2,5} The likely explanation for this age variation is due to the higher incidence of prolapse and late

presentation to the hospital for the concerned illness in the rural population studied.

The most common indication for the hysterectomy was uterovaginal prolapse (57/152, 37.5%). Fibroid uterus was the second most common indication (39/152, 25.65%), however it was found to be the most common indication for the abdominal hysterectomy. This was in contrast with the previous studies in which the fibroid was the most common indication of hysterectomy in the patients studied.^{1,2,6,7}

This variation is likely due to the increased incidence of uterovaginal prolapse in the population studied, due to the causative factors mentioned earlier. Other major explanation for this difference is due to the lower prevalence of fibroid in the study group. Early age at first pregnancy, increased parity, prolonged breastfeeding are common in the rural population in India and this leads to lower incidence of fibroids in this female as there is reduced exposure to the cyclical hormonal changes of the menstrual cycle.

Diagnosis of dysfunctional uterine bleeding (DUB) was made in 9.87% cases. However, on histopathological examination, only 12 patients (12/152, 7.89%) had cystic glandular hyperplasia consistent with the diagnosis of DUB while the rest of the patients operated with this pre-operative diagnosis were found to have adenomyosis, atypical endometrial hyperplasia, endometrial polyp and gestation hyperplasia with placental site reaction. These findings were missed preoperatively.

DUB is a blanket diagnosis, and inadequate work-up, either due to financial constraints or the pressure of the patient to get the surgery done earlier, leads to such scenario. Various previous studies found that the actual diagnosis confirmed by histopathological examination was missed pre operatively in the majority of cases operated with the preoperative indication of DUB.^{1,2,8} This result emphasizes the fact the pre-operative diagnosis of DUB should be made only after comprehensive and necessary investigations are done.

None of the cases of adenomyosis (14/152, 9.21%) were confirmed pre operatively. This was in concordance with previous studies where the adenomyosis was the most missed out pathology preoperatively.^{2,9} This indicates that the histopathology of the hysterectomy specimens is mandatory to confirm the pre-operative diagnosis and to justify the hysterectomy.

Leiomyosarcoma is the most common sarcoma of the uterus, however its incidence is as low as 0.13%.^{10,11} One case of leiomyosarcoma was seen in this study and the incidence was found to be similar to that found in the previous studies.^{10,12} Chronic cervicitis was the commonest histopathology found in the cervix of all the hysterectomy specimens. The incidence was found to be 93%, which was almost similar to that found in various

previous studies done in India and in other nations.^{1,3,12-14} In all the ovarian specimens, cysts of variable morphology was the most common pathology noted. Majority were simple follicular cyst which were functional cyst. Incidence of the functional ovarian cysts was similarly high in other studies.^{1-3,13,15} The incidence of ovarian tumours in the present study was 13.1%, which was close to the incidence quoted by Jha et al in their study.¹ However, removal of ovaries without the suspicion of any pathology seems to be unnecessary. The removal of ovaries leads to estrogen hormone deficiency, hastens up the menopause and patient's psychosexual health is affected.

The commonest endometrial pathology noted in the present study was proliferative endometrium (53%) which was the most common pathology noted in the patients with fibroids and adenomyosis. Incidence of atrophic endometrium was 31%, and this was due to the increased incidence of uterovaginal prolapse, which is commonly the pathology of the postmenopausal females. Simple hyperplasia with or without atypia was present in 4% cases, similar to the studies done earlier.^{3,12,16,17}

No significant pathology was detected in 12.5% patients undergoing hysterectomy. All these patients having unremarkable pathology in the hysterectomy specimens were operated for the uterovaginal prolapse. Incidence of unremarkable pathology in the hysterectomy specimens of the vaginal hysterectomy was high in previously done studies also.^{2,7,18} None of the specimens retrieved after abdominal hysterectomy were found to have unremarkable pathology, thus justifying almost all the abdominal hysterectomies considered in this present study.

CONCLUSION

This study signifies the fact that the histopathological analysis of the hysterectomy specimens should be a mandatory procedure, even if the gross appearance is normal, as few lesions are found to be the pure incidental finding. It also provides a correlation with the clinical and preoperative diagnosis and leads to appropriate management in the postoperative period. Justification of the hysterectomy is also proved when the histopathological diagnosis corresponds with the pre-operative diagnosis. This study emphasizes the fact that even the hospitals in the corporate and private non-teaching institutes should send all the hysterectomy specimens for the histopathology so that a proper audit of this major surgical procedure can be done at all medical centres.

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