

Clinicopathological Analysis of Hysterectomy Specimens

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Abstract

Introduction: The uterus is vital reproductive organ prone to develop several non-neoplastic and neoplastic lesions in woman contributing significantly to increased morbidity and mortality. Although many treatment options are available, hysterectomy is still widely used treatment modality worldwide. **Objectives:** The study was proposed to analyse the patterns of lesions in hysterectomy specimens and to analyse the clinico-pathological correlation in hysterectomy specimen. **Methods:** A 6-month retrospective study was performed in Department of Pathology, Karwar institute of Medical science, Karwar. Baseline data were collected from inpatient files and histopathology reports were collected from Department of Pathology, to identify the most common pathologies in hysterectomy specimens. **Results:** 78 hysterectomy cases were analysed and the peak age group were from 35-45 years (42.30%), and the most common clinical presentation was fibroids (42.30%). Most common histopathological lesion was leiomyoma 37 cases (47.4%), followed by 16 cases (12.82%) presented as adenomyosis, and 14 cases (10.26%) had dual pathology of both leiomyoma and adenomyosis. The commonest incidental histopathological finding seen in hysterectomy specimens was chronic cervicitis. **Conclusions:** Hysterectomy is the most commonly performed elective major gynaecological surgery. Though the histopathological analysis correlates well with the clinical diagnoses, quite a few lesions like chronic cervicitis and adenomyosis were encountered as pure incidental findings. Hence, it is mandatory that every hysterectomy specimen, even if it grossly appears to be normal, should be subjected to detailed histopathological examination for confirming diagnosis and better postoperative management.

Keywords: Hysterectomy, Leiomyoma, Uterine prolapse, Adenomyosis

Introduction

The female genital tract consists of uterus, cervix, the ovaries and fallopian tubes which under hormonal influence is prone to develop many benign and malignant lesions in all age groups leading to significant mortality and morbidity in females. Though conservative and medical treatment is available, hysterectomy is an effective treatment option for many conditions [1].

Hysterectomy is the second most frequently performed major surgical procedure in females all over the world next to caesarean section [2]. It involves removal of uterus by abdominal or vaginal route [3]. It is being performed since early 20th century. Most common indications for which hysterectomy is being done are dysfunctional or abnormal uterine bleeding, uterine fibroids, uterine prolapse, endometriosis and

adenomyosis [4]. Histopathological examination of hysterectomy specimens carries diagnostic and therapeutic significance. The study was proposed to analyse the patterns of lesions in hysterectomy specimens, to find out the different clinical indications and to analyse the clinicopathological correlation in hysterectomy specimen. Limited studies are available involving coastal population of Karnataka, especially Karwar population, hence the study will aid in providing basic information regarding the prevalence of different histopathological lesions in the hysterectomy specimen.

Methods

Type of the study: The present study was conducted after obtaining the permission of institutional ethical committee. This was anon-interventional, retrospective, observational study which included all the patients who underwent hysterectomy in Karwar institute of Medical

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science, Karwar, over a period of 6 months from November 2017 to April 2018.

Inclusion and exclusion criteria: Inclusion criteria were all patients undergoing hysterectomy for various clinical reasons and those not benefitted by conservative or medical management, in whom surgery was not a contraindication. The only exclusion criteria were obstetric hysterectomy.

Sample and Data collection: On receiving hysterectomy specimens, multiple bits of 3-5 microns size were made from representative sites. They were processed and paraffin blocks were made, sectioned and stained by haematoxylin and eosin.

A detailed microscopic examination was done to arrive at accurate diagnosis by pathologists. Patient information, pre-operative diagnosis and type of surgery were obtained from the medical records of the

department of obstetrics and gynaecology. The histopathological findings were obtained from the department of pathology. 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 and fallopian tube.

Statistics: Data collected were tabulated in Microsoft excel and analysed. Correlation of clinical diagnosis and histopathological diagnosis was done. P value < 0.05 was considered as statistically significant.

Ethical considerations: There are no risk factors as this is not an interventional study, it is a retrospective, observational study. The data are collected from the Medical Record Room and histopathological finding from the pathology department. For this necessary permission are obtained from the concerned authorities. Identity of the patient and the treating doctor is not recorded.

Results

In our study involving 78 cases most common age group who underwent hysterectomy was 35-45 years followed by 45-55 years group and least hysterectomies were done in age group 65-75 years.

Table-1: Age wise distribution of hysterectomy specimen.

Age group (years)	Number of hysterectomies done	Percentage (%)
25-35	10	12.82
35-45	33	42.30
45-55	23	29.49
55-65	9	11.54
65-75	3	3.85

The commonest surgical approach in the majority of cases in this study was total abdominal hysterectomy (TAH) with and without bilateral salpingoophorectomy followed by vaginal hysterectomy. The most common indication among the patients who underwent hysterectomy was fibroid followed by mass per vagina.

Table-2: Type of Hysterectomy with indication.

Type of hysterectomy	Indications	Number of patients	Percentages
Vaginal Hysterectomy (22)	Uterovaginal prolapse	22	28.2
TAH with unilateral /bilateral salpingoophorectomy (56)	Fibroid	23	29.4
	DUB	18	23.0
	Ovarian mass	13	16.6
	Cervical fibroid	02	2.54

The most common histopathological diagnosis made was that of chronic cervicitis which was an incidental finding. Followed by single or multiple leiomyoma, non-neoplastic ovarian tumours, adenomyosis, few cases had both adenomyosis and leiomyoma. Most of the cases presented with more than one type of histopathological lesion on examination. A case of endometrioid endometrial adenocarcinoma was also noted.

Table-3: Histopathological Diagnosis

Histopathological Diagnosis	No of cases	%
Chronic cervicitis	60	76.92
Leiomyoma	37	47.4
Adenomyosis	16	20.5
Leiomyoma + Adenomyosis	14	17.94
Ovarian tumours	26 (Non neoplastic) + 1 (neoplastic)	34.6

The most common histopathological finding in cervix were chronic cervicitis and most of them were incidental finding.

Table-4: Histopathological Diagnosis of Cervical Lesions

Histopathological Diagnosis	No of cases	%
Chronic cervicitis	60	76.92
Chronic cervicitis with squamous metaplasia	10	12.8
Papillary endocervicitis	04	5.12
Cervical fibroid	02	2.56
Normal histology	02	2.56

The most common histopathological finding in endometrium was proliferative endometrium followed by atrophic endometrium which was most commonly associated with uterovaginal prolapse.

Table-5: Histopathological Diagnosis of Endometrial Lesions

Histopathological Diagnosis	No of cases	%
Atrophic endometrium	25	32.0
Disordered proliferative phase	05	6.41
Proliferative phase	31	39.7
Secretory phase	15	19.2
Endometrial polyp	01	1.28
Adenocarcinoma	01	1.28

Leiomyoma was the most common myometrial lesion detected followed by Adenomyosis.

Table-6: Histomorphology of Myometrial Lesions.

Histopathological Diagnosis	No of cases	%
Leiomyoma	37	47.4
Adenomyosis	16	20.5
Leiomyoma and adenomyosis	14	17.94
Normal histology	15	19.23

Non neoplastic cyst were most common ovarian lesions seen on histopathology.

Table-7: Histopathological Diagnosis of ovarian Lesions.

Histopathological Diagnosis	No of cases	%
Follicular cyst	20	25.6
Serous cystadenoma	04	5.12
Mucinous cystadenoma	01	1.28
Benign mature teratoma	01	1.28
Serous cystadenocarcinoma	01	1.28
Normal histology	51	65.3

Most of the clinical diagnosis were correlated on histopathology

Table-8: Correlation of Clinical Diagnosis with Histopathological Diagnosis.

Preoperative Diagnosis	No of cases	Histopathological diagnosis	
		No of cases	%
Fibroid	23	20	86.95
Adenomyosis	02	02	100
Serous cystadenoma	07	05	71.4
Dermoid cyst	01	01	100
UV prolapse	22	22	100
Cervical fibroid	02	02	100

Discussion

This study was conducted to analyse the patterns of lesions in hysterectomy specimens in our institution and to correlate the histological findings with the clinical indications and to compare our finding with the other researchers. Hysterectomy is a major and common surgery performed in the obstetrics and gynaecology (OBG) department. The procedure is done for various causes, it can be lifesaving in some cases as in ruptured uterus and can provide permanent relief in many non-neoplastic lesions. The indication of this should be proved histopathologically.

Histopathological examination of the specimen has both diagnostic and therapeutic value. In OBG practice, variety of condition warrant the removal of uterus which do not show any gross and microscopic pathology on examination by the pathologist [5]. Normal uterus may be removed in the treatment of malignancies involving ovaries, fallopian tube, vagina and cervix. Other non-malignant conditions like DUB, pelvic inflammatory disease, endometriosis, pelvic organ prolapse, chronic pelvic pain and pelvic tuberculosis may require removal of normal uterus[6].

In this study of 78 hysterectomies, the most common route of hysterectomy was the abdominal route. The most common procedure was TAH with unilateral/bilateral salpingoophrectomy (71.7%) followed by vaginal hysterectomy (28.2%). TAH with bilateral salpingoophrectomy (57.6%) was found to be the commonest type of hysterectomy in our study which is similar to results noted in studies conducted by MacKenzie IZ et al, Sachin AK et al and by Deeksha Pandey et al[7-9]. Long term data from the united kingdom shows that the abdominal hysterectomy is being performed five to six times more frequently than vaginal hysterectomy [10]. The age of the patient studied in this particular study ranged from 25 to 75 years, the mean age being 50.86±6.9 years. A study conducted by Adelusola K et al had mean age of 49.1 years and study done by Deepti Varma et al had mean age of 50.1 years[11-13].

The most common indication for the hysterectomy was fibroids, followed by mass per vagina, irregular menstrual cycles and mass per abdomen. A study conducted in United states of America by M S Broder had fibroid (60%) as most common indication followed by prolapse (11%)[14]. Similar findings were noted even in study conducted in Pakistan by TA Shaikh[15]. Uterine fibroid was the most common reason for performing hysterectomy even from a study conducted from Africa by JL Butt et al[16]. However, a study conducted by Toma A et al from Canada had DUB as the commonest indication followed by uterine fibroid[17]. A study conducted in Uttar Pradesh, India by Deepti Verma et al had uterovaginal prolapse (37.5%) as most common indication followed by fibroid uterus as the second most common indication (25.65%) but uterine fibroid was the most common indication for the abdominal hysterectomy.

Review of histopathological reports showed chronic cervicitis as the most common incidental finding, detected in 76.9% cases followed by leiomyoma (47.4%). Similar to our study, study conducted by Talukder et al had chronic cervicitis (87.8%) as histological finding followed by leiomyoma [18]. The commonest endometrial lesion noted in the present study was proliferative endometrium (39.7%) which is most commonly associated with pathological lesions like fibroids and adenomyosis. Atrophic endometrium (32%) was commonly seen in uterovaginal prolapse in postmenopausal women.

Leiomyoma is the most common myometrial lesion in our study followed by adenomyosis as noted in other studies [19, 20]. Adenomyosis is under diagnosed preoperatively as it has no specific symptoms. It is usually diagnosed after hysterectomy by histopathological examination[21, 22]. In the present study, only two case out of sixteen had a preoperative clinical diagnosis of adenomyosis; other cases either presented with menorrhagia or were an incidental finding. Some of the specimens showed more than one lesions in the

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uterus and in this study 14 Cases revealed the presence of both leiomyoma and adenomyosis. We observed only 1 case of malignant tumour of endometrium which comprised of endometrioid carcinoma.

Pre-operative diagnosis of dysfunctional uterine bleeding (DUB) was made in 23% cases. On histopathological examination only one case had cystic glandular hyperplasia which is consistent with the diagnosis of DUB while rest of the patients undergoing hysterectomy with this diagnosis showed adenomyosis, endometrial polyp, secretory endometrium and disordered proliferative endometrium.

Of the 56 cases which had removal of ovaries, either unilateral or bilateral, simple follicular cyst was the commonest ovarian lesion noted similar to various previous studies [9, 23, 24]. Among the benign tumours, simple serous cystadenoma was the most common. One case of mature cystic teratoma, mucinous

cystadenoma and adenofibroma each was identified. One patient had malignant papillary serouscystadenocarcinoma. Histopathological examination revealed no pathological lesions in the fallopian tubes, in the present study

In our study most of the preoperative clinical diagnoses were confirmed on histopathological examination, the percentage of confirmation ranging from 71.4% to 100%. Patients who presented with dysfunctional uterine bleeding and menorrhagia had small leiomyoma or adenomyosis, endometrial polyp, secretory endometrium and disordered proliferative endometrium.

As mentioned earlier limited studies are conducted involving Karwar population, the present study provides the basic demographic information of patients undergoing hysterectomy, common indication for hysterectomies and various histopathological lesions in the hysterectomy specimens in this population.

Conclusion

In this retrospective study done in our institution the most common lesion seen after histopathological analysis of hysterectomy specimen was leiomyoma. Benign lesions were more common than their malignant counterparts. Though the histopathological analysis correlates well with the clinical diagnoses, quite a few lesions like chronic cervicitis and adenomyosis were encountered as pure incidental findings. Hence, it is mandatory that every hysterectomy specimen, even if it grossly appears to be normal, should be subjected to detailed histopathological examination for confirming diagnosis and better postoperative management

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Author contribution

Author	Contribution
Dr Ashwini Kolar Assistant professor Department of Pathology	Involved in idea, concepts, design of the research project. Protocol preparation, literature search. Later with data collection and analysis. Manuscript – manuscript preparation, editing (as suggested by the reviewer)
Dr. Shreya S Desai, Student, Phase III, Part I. Dr. Sneha Reddy R, Student, Phase III, Part I. Dr. Sahana Nayak, Student, Phase III, Part I.	Literature search. Involved in data collection and analysis. Aiding in manuscript preparation

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