

ORIGINAL ARTICLE

Hysterectomies: An Audit at A Tertiary Care Public Sector Hospital in Lahore, PakistanMADIHA IQBAL¹, ASMAA QURESHI², SHAHZAD SAEED³, RABIA BASHARAT⁴, FARAH KALSOOM⁵, FARRUKH KAMAL⁶, RUBINA FARRUKH⁷, KHAWAJA MOEEN UD DIN⁸, MUHAMMAD ALI KHAN⁹¹Senior Demonstrator, Department of Pathology, Fatima Jinnah Medical University/Sir Ganga Ram Hospital, Lahore, Pakistan²Associate Professor, Department of Pathology, Fatima Jinnah Medical University/Sir Ganga Ram Hospital, Lahore, Pakistan³Assistant Professor, Department of Radiology, Services Institute of Medical Sciences/Services Hospital, Lahore, Pakistan⁴Associate Professor, Department of Pathology, Post Graduate Medical Institute / Ameer ud Din Medical college/ General Hospital, Lahore Pakistan⁵Senior Demonstrator, Department of Pathology, Fatima Jinnah Medical University/Sir Ganga Ram Hospital Lahore, Pakistan⁶Professor, Department of Pathology, Services Institute of Medical Sciences / Services Hospital, Lahore, Pakistan⁷Professor, Department of Obstetrics & Gynecology, Services Institute of Medical Sciences / Services Hospital, Lahore, Pakistan⁸Final year MBBS student, Allama Iqbal Medical College, Lahore, Pakistan⁹A Levels Student. Lahore, Pakistan.Correspondence to: Madiha Iqbal, Email: madiha.1983@hotmail.com, Cell: 03224445375**ABSTRACT****Background:** Hysterectomy is a common gynecological surgery worldwide. Thorough preoperative clinical and radiological assessment of the patients followed by histopathological evaluation of the specimens is mandatory for providing good health care services to the patients.**Objective:** The objective of the study was to analyze the spectrum of histopathological findings in hysterectomy specimens & correlate them with their clinical & radiological findings.**Patients and Methods:** This was a retrospective, descriptive, cross sectional study, carried out at the Pathology Department of Fatima Jinnah Medical University, Lahore. All the gynecological hysterectomies received at the department from 1st December 2018 to 30th November 2020 were included in the study. Data collected, included age of the patient, clinical presentation, radiological findings, type of hysterectomy performed and complete histopathology report of the specimen. Data was analyzed using SPSS version 17.**Results:** A total of 637 hysterectomy specimens were included in the study. The age of the patients ranged from 22 years to 80 years with a mean age of 46 ± 9 years. The commonest clinical indication was a uterine mass (47.7%). Most frequent preoperative radiological (USG/ CT scan/MRI) finding was uterine mass/polyps (52%). The commonest surgical procedure was total abdominal hysterectomy (52.4%). On histopathological evaluation, 99% of the cases showed chronic cervicitis. The commonest diagnosis in the uterine corpus was leiomyoma. Uterine malignancy accounted for 7.3% of the cases and 4.7% of hysterectomies were done for ovarian malignancies. Practical implication This study aims to highlight the need for a multi-disciplinary audit for all hysterectomy cases to reduce the incidence of this surgery & for better patient care & management.**Conclusion:** Hysterectomy is a major, invasive surgical procedure. A vigilant preoperative clinical and radiological evaluation of the patient can reduce the incidence of this surgery. Histopathological analysis of all hysterectomy specimens is mandatory for diagnosis of benign and malignant conditions, recognition of precancerous lesions and detection of incidental findings.**Keywords:** Hysterectomies, Audit, Leiomyoma, preoperative radiological evaluation, histopathological evaluation**INTRODUCTION**

The uterus is a hollow, pear shaped organ, placed along its bilateral attached adnexa, in the female pelvis. It is the pivotal organ of the female genital system, which bears pregnancy.¹ It undergoes a series of physiological changes, under the influence of sex hormones, throughout the reproductive life of the female.²

The uterus is subject to a multitude of pathological conditions, which cause its dysfunction. These include congenital deformities, inflammatory lesions, hormonal problems and hyperplastic and neoplastic processes.³ Failure of timely medical treatment for these conditions eventually leads to the hysterectomy.⁴ Hysterectomies are mostly done for alleviation of symptoms like heavy menstrual bleeding, chronic pelvic pain or discomfort, and for the management of gynecologic issues like fibroids, endometriosis, adenomyosis, uterine polyp or mass and uterovaginal prolapse.⁵

Hysterectomy is the commonest gynecologic surgery worldwide. Studies show one in nine women will have her uterus removed in her lifetime.^{5,6} There are about 600,000 hysterectomies done/year in US.⁶ A study at Denmark shows the incidence rate of hysterectomies at 351.1/100,000 persons per year.⁴ A study from Pakistan showed that the incidence of hysterectomy in Pakistan has risen from 7% of total gynecological admissions, in 2013 to 17% in 2016.⁷

Hysterectomy may be total abdominal hysterectomy, subtotal hysterectomy, vaginal hysterectomy, laparoscopic hysterectomy, or cesarean hysterectomy. It may or may not be associated with removal of one or both adnexa.⁴ Hysterectomy is an invasive procedure associated with several complications. The short term complications include haemorrhage, damage to

surrounding organs, sepsis, fallopian tube prolapse, vaginal vault prolapse & thromboembolism. The long term complications include early menopause, hot flashes, depression, decreased sexual drive & increased risk of cardiovascular disease, obesity, high blood pressure & osteoporosis when ovaries are also removed along with uterus⁸.

The rationale of the study is to emphasize that hysterectomy is a major surgical procedure, associated with its complications. Therefore, thorough preoperative clinical and radiological assessment of the patient is mandatory prior to a hysterectomy procedure. Histopathological evaluation of the hysterectomy specimens remains the gold standard for diagnosis. As there are no hysterectomy audits done recently in this tertiary care hospital, which is one of the leading hospitals taking the most number of gynecology cases, all over Punjab, our study provides a basis for self audit for better patient care & management.

PATIENTS AND METHODS

This was a retrospective, descriptive, cross sectional study, carried out at the Pathology Department of Fatima Jinnah Medical University, Lahore. This study was approved by the Institutional Ethical Review Board. All the gynecological hysterectomies received in the department from Sir Ganga Ram Hospital Lahore, from 1st December 2018 to 30th November 2020 were included in the study.

Consecutive specimens of hysterectomies done for various gynecological indications, including those done as a part of staging laparotomy for ovarian neoplasms or malignancy of any surrounding organ in all age groups were included in the study. Cesarean hysterectomies and those of teenage girls who

were mentally retarded were excluded. Autolyzed hysterectomy specimens were also excluded from the study.

Data of all the cases was entered on a predesigned proforma. Data included age of the patient, marital status, parity, clinical presentation, radiological findings, indication of surgery, type of hysterectomy performed and complete histopathology report of the patient. Data was analyzed using SPSS version 17.

RESULTS

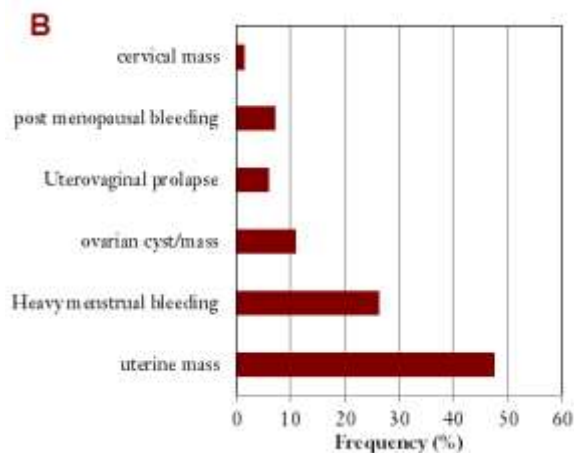
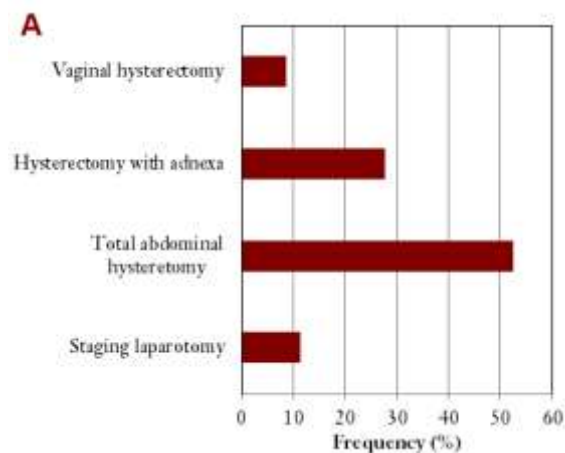
A total of 637 hysterectomy specimens were included in the study. The age of the patients ranged from 22 years to 80 years with a mean age of 46 ± 9 years. The most common surgical procedure was total abdominal hysterectomy (TAH) (n=334, 52.4%), followed by TAH with removal of one or both adnexa (TAH and USO or TAH and BSO) (n=176, 27.6%), staging laparotomies (which included TAH and BSO along with omental biopsy, peritoneal washings and metastatic deposits) (n=72, 11.3%) and vaginal hysterectomies (n=55, 8.63%) (Figure 1A).

The commonest clinical indications were uterine mass (n=304, 47.7%), heavy menstrual bleeding not responding to medical treatment (n=168, 26.3%), ovarian cysts/masses (n=70, 11%), Uterovaginal prolapse (n=38, 6%), postmenopausal bleeding (n=47, 7.3%) and cervical mass (n=10, 1.6%) (Figure 1B).

The preoperativeradiological (USG/CT SCAN/MRI) findings were uterine mass/polyp in 332 cases (52%), thickened endometrium in 98 cases (15.4%), adenomyosis in 90 cases (14.1%), thinned endometrium in 42 cases (6.6%), simple ovarian cyst in 35 cases (5.5%), complex cystic/solid adnexal masses in 40 cases (6.3%)(Figure 1C).

Table 1: The histopathology of the cases showed the following result

Histopathological diagnosis	Number of cases	Percentage
Chronic cervicitis	631	99%
Leiomyoma	251	40%
Adenomyosis	70	11%
Hormonal imbalance	50	7.8%
Chronic endometritis	23	3.6%
Atrophic endometrium	40	6.2%
Proliferative endometrium	10	1.5%
Secretory endometrium	06	0.9%
Benign endometrial polyp	32	05%
Non neoplastic or benign Ovarian cyst/mass	40	6.2%
Ovarian malignancy	30	4.7%
Endometrial hyperplasia with or without atypia	26	04%
Uterine malignancy	47	7.3%
Cervical malignancy	5	0.8%
Cervical intraepithelial neoplasia III	01	0.15%



The commonest histopathological findings in the hysterectomy specimens were chronic cervicitis (n=631, 99%) & leiomyoma (n=251, 40%). Other common findings were adenomyosis (n=70, 11%), hormonal imbalance (n=50, 7.8%), & atrophic endometrium (n=40, 6.2%). Less common findings were benign endometrial polyp (n=32, 05%), endometrial hyperplasia with or without atypia (n=26, 04%), chronic endometritis (n=23, 3.6%), proliferative endometrium (n=10, 1.5%), secretory endometrium (n=06, 0.9%). 6.2% (n=40) hysterectomies were associated with non-neoplastic or benign ovarian masses, 4.7% (n=30) hysterectomies were done as part of staging laparotomies for ovarian malignancy, Uterine malignancy was 7.3% (n=47), cervical malignancy was 0.8% (n=05) & cervical in situ malignancy was 0.15% (n=01) (Table 1 & Figure 1D).

DISCUSSION

The maximum number of patients in this study were in age range 45-55 years. This is similar to the demographic findings of studies conducted in Nawabshah, Rawanda and Nepal^{9,10,11}. This can be explainable since the patients have completed their families by this age, and have started having a multitude of gynecological problems, which ultimately lead to elective hysterectomies.

The commonest surgical approach in the present study was TAH (52.4%), followed by TAH with removal of one or both adnexa (27.6%) and Staging Laparotomies (11.3%). Vaginal hysterectomy was the least commonly done procedure (8.6%). These results are similar to a study conducted by Ogunlaja and coauthors, in which TAH was 87.4% and VH was 12.6%.¹² Mishra and coworkers reported that TAH was the commonest surgical procedure in their study. This is because abdominal approach is the most practical and feasible approach in indications of fibroids, and other uterine and ovarian masses.³ Vaginal hysterectomy is mostly preferred in cases with associated uterovaginal prolapse³

Most frequent clinical indication for hysterectomy in this study was uterine mass (47.7%), followed by heavy menstrual bleeding not responding to medical treatment (26.3%). Ovarian cysts and masses were 11%. Uterovaginal prolapse (06%), postmenopausal bleeding (7.3%) and cervical growths (1.6%) were lower down the list. Titiloye and colleagues reported similar observations.¹³ Uterine masses were 66.48%, dysfunctional uterine bleeding was 9.3%, ovarian tumors 10% and cervical tumors 2.85%. Similar observations were made in studies from India, Bangladesh¹ and Nepal.^{11,14,15} Shahid and group however reported differently.¹⁶ Their study showed that the commonest clinical indication was abnormal uterine bleeding (51.59%).

The preoperative radiological evaluation of the hysterectomy patients showed that uterine mass/polyp

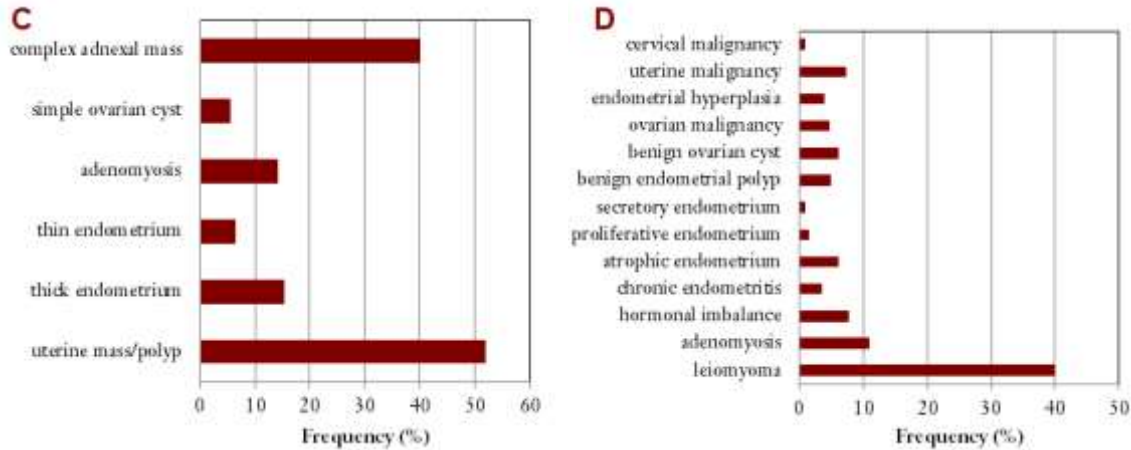


Figure 1: A) Surgical approach for hysterectomy. B) Clinical indications for hysterectomy. C) Preoperative radiological findings. (D) Histopathological diagnosis in hysterectomy specimens.

was the commonest finding (52%), followed by thickened endometrium (15.4%), adenomyosis (14%), thinned endometrium (6.6%), simple ovarian cyst (5.5%) and complex adnexal masses (6.3%). The findings were concordant with the study of Gupta et al¹⁴, who found uterine mass/fibroid was the most common finding (52.9%) in preoperative pelvic scans.

The histopathological evaluation of the hysterectomy specimens showed that 631 out of the 637 cases (99%) had chronic cervicitis with squamous metaplasia and Nabothian cysts. Only 1 case of CIN III was noted. Five cases had cervical malignancy, 4 were squamous cell carcinoma, 1 case was adenocarcinoma. Nasim and coauthors in a study from Peshawar, Pakistan reported similar incidence (92.4%) of chronic cervicitis.¹⁷ Their study reported 3 malignancies of cervix; 2 were squamous cell carcinoma, and 1 was adenocarcinoma. In a previous study from Tamil Nadu chronic cervicitis was seen in 85% of hysterectomies.¹⁸ Sharma reported 71% cases of chronic cervicitis and 1.3% cases of cervical CA.¹⁹ These studies highlight that chronic cervicitis is extremely common, especially in sexually active women. The very low number of cervical cancers reported on hysterectomy specimens is probably because cervical cancers are diagnosed on cervical tissue biopsy and most of the patients are at an inoperable stage, therefore, they are referred for neoadjuvant therapy.

The present study showed that the most common histopathological diagnosis in uterine corpus samples was leiomyoma (40%), followed by adenomyosis (11%). One previous study from Pakistan reported similar results showing leiomyoma 66% of cases and adenomyosis 21% of cases²⁰ In a study conducted at Karachi, leiomyoma was 33%, adenomyosis was 23% and combined leiomyoma with adenomyosis was 23%.¹⁶ Similar results were shown in studies conducted in Lahore, Tanzania, India, United States and Nepal.^{6,11,19,21,22} On the other hand, a study from Nowshera, Pakistan showed adenomyosis to be the most common finding (49.8%), which was followed by leiomyoma (15.3%).²³ Fibroid uterus not responding to medical treatment, till now, remains the commonest cause for hysterectomy, in most countries of the world, surpassing all other causes.

In the present study, uterine malignancy made 47 out of 637 cases (7.3%). Most common were endometrioid carcinoma (25 cases) and serous carcinoma (14 cases), followed by clear cell carcinoma (1 case), uterine sarcomas (3 cases), Malignant Mixed Mullerian tumor (2 cases) and metastasis from ovary or gut (2 cases). Most of the tumors (83%) presented at FIGO stage I or II. Sharma reported only 9 cases of endometrial malignancy out of 1400 cases¹⁹ Mishra reported just 4 cases of endometrial malignancy out of 277.³ Shahid and coworkers reported only 1 endometrial malignancy in 157 cases.¹⁶ Nasim and colleagues

reported just 4 uterine malignancies out of 458 cases.¹⁷ High percentage of malignancy observed in present study reflects the overall increase of malignancies in Pakistani population most likely due to carcinogens in the diet and environment and need further studies. However, it may partly be explained by the fact that Sir Ganga Ram Hospital (SGRH) is a tertiary care referral hospital with a vast catchment area where difficult cases from Lahore and surrounding towns and cities are referred for further management. SGRH also has a reputation of being an institute for the females. Therefore, most patients with breast or gynecological pathologies report to SGRH than any other hospital in Lahore.

This study showed that 40 hysterectomies (6.2%) were done due to non-neoplastic ovarian cysts or benign ovarian tumors. These included luteal cysts, endometriotic cysts, adenomas, fibrothecomas and mature teratomas. Thirty hysterectomies (4.7%) were done for ovarian malignancies. The results are comparable to the study conducted at Tamil Nadu, India which reported majority of the ovarian cysts/masses were benign, only 3% were malignant.¹⁸ The study conducted at Patna, Bihar reported ovarian malignancy in 5% of cases.³

CONCLUSIONS

Hysterectomy is a treatment option, for many benign and malignant conditions. However, it is a major, invasive surgery associated with numerous postoperative surgical and medical complications as well as psycho-social problems. Therefore, a vigilant preoperative clinical and radiological evaluation of the patient can reduce the incidence of this surgery. The patients should also be offered alternate treatments such as uterine ablation, uterine artery embolization, myomectomy, laproscopic myolysis and hormonal therapy, before embarking upon hysterectomy. Histopathological analysis of all hysterectomy specimens is mandatory for diagnosis of benign and malignant conditions, recognition of precancerous lesions and detection of incidental findings which may alter the course of treatment afterwards. Audits should be regularly done in all medical institutions to compare the clinic-radiological indications for hysterectomy with the histopathological diagnosis, for the justification of this surgical procedure.

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