

Frequency of Benign Indications of Open Abdominal Hysterectomy in Tertiary Care Hospital

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Abstract

Objective: This study aims to determine the frequency and indications of open abdominal hysterectomy for benign conditions in a tertiary care hospital, while also evaluating the appropriateness of these procedures and analyzing the internal quality of care.

Methodology: This descriptive prospective study was performed in the department of gynecology/obstetrics unit C, Ayub Teaching Hospital, Abbottabad from June 2022 to December 2022. After institutional ethical approval, all patients admitted for abdominal hysterectomy for benign conditions were included in the study by consecutive sampling. Age, parity and indications were noted. The data were analyzed using SPSS version 25, calculating means and frequencies. The indications for hysterectomies were stratified by age and parity, and post stratification analysis was performed using the chi-square test, considering a p-value of ≤ 0.005 as significant.

Results: Total of 140 patients were recruited during the study period. The mean age of the patients were 46.24 with $SD \pm 5.7$, mean parity of 4.7 with $SD \pm 2.2$. Uterine leiomyoma was the most frequent indication at 50.7%, followed by dysfunctional uterine bleeding at 39.3%. Endometriosis, endometrial polyp and benign ovarian masses were 3.9%, 3.9%, and 2.9%, respectively.

Conclusion: Open abdominal hysterectomy is the most common gynecological procedure in our setting, and fibroid uterus and DUB are the most common benign indications. These findings contribute to our understanding of the prevalent indications for abdominal hysterectomy in our setting. Further research and evaluation of alternative treatment options may help optimize the care provided to women with these benign conditions, potentially reducing the need for hysterectomy.

Key words: Hysterectomy, leiomyoma, dysfunctional uterine bleeding.

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Introduction

Hysterectomy means the surgical removal of the uterus. The first hysterectomy was performed in 1843 by Charles Clay in Manchester, England. Hysterectomy is the most common gynecological procedure after caesarean section.¹ There are various indications for hysterectomy, with the most common benign indications including fibroid uterus, chronic pelvic pain, pelvic inflammatory disease, and dysfunctional uterine bleeding. Laparoscopic assistance was introduced in 1989 to facilitate minimally invasive hysterectomy, and further advancements were made in 2005 with the approval of robotic-assisted techniques.²

Despite the introduction of laparoscopic and robotic hysterectomy, which offer benefits such as fewer complications and lower morbidity rates, open abdominal hysterectomy remains the most frequently performed procedure in females of reproductive age, accounting for over half of all hysterectomies.³

The incidence of hysterectomy varies across different parts of the world, with estimates of 5.1/1000 in the United States, 4.7/1000 in Australia, and 3.6/1000 in Germany.⁴ In India, the estimated incidence of hysterectomy is 20.7/1000 women,⁵ while a study in Nepal reported a frequency of 59% among major

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gynecological surgeries.⁶ In Pakistan, the rate of hysterectomy is variable and has shown an upward trend over the years, ranging from 7% to 17%.⁷

The appropriateness of performing abdominal hysterectomy for benign conditions has been called into question due to the availability of effective medical and conservative treatment alternatives, as it is associated risks of morbidity and mortality.^{8,9} Reported complication rates for hysterectomy range from 0.5% to 43%.¹⁰

A study conducted in the United States assessed the appropriateness of hysterectomies performed for benign conditions based on predefined criteria, revealing that 70% of the surgeries did not meet the appropriateness criteria that indicated many physicians may be overusing hysterectomy, despite its potential as a life-saving procedure with high rates of postoperative satisfaction and its effectiveness as a definitive treatment for certain conditions.¹¹

Continuous review and audit of the surgical procedures can help in reducing the unnecessary interventions with associated morbidity and mortality. The study aims to contribute to continuous quality improvement. Additionally, the study seeks to assess the age and parity of patients undergoing hysterectomy and identify the most common benign indications in the hospital setting. The findings will help inform guidelines and improve the quality of care provided to women with benign conditions that may lead to hysterectomy, ultimately reducing unnecessary interventions and associated morbidity and mortality.

Methodology

This descriptive cross-sectional study was conducted in the Department of Gynecology/Obstetrics, Unit C, at the Ayub Medical Teaching Institute in Abbottabad June 2022 to December 2022. Ethical clearance was obtained from the institutional ethical review committee. The study included all patients who underwent abdominal hysterectomy for benign conditions, while patients operated for malignancies and caesarean hysterectomies were excluded. A non-probability consecutive sampling technique was employed to select participants. The sample size was calculated using the WHO sample size software, considering an expected frequency of 9% for pelvic inflammatory disease, a 95% confidence interval, and an absolute precision of 5%.¹²

The calculated sample size was 126; however, a total of 140 patients were recruited. Informed consent was obtained from all patients, and basic demographics such

as age, parity, and weight were recorded. The indications for hysterectomies were documented based on diagnosis derived from patient history, physical examination, and investigations. The data were analyzed using SPSS version 25, calculating means and frequencies. The indications for hysterectomies were stratified by age and parity, and post stratification analysis was performed using the chi-square test, considering a p-value of ≤ 0.005 as significant.

Results

Out of 140 cases included in the study mean age of women was 46.2 years with ± 5.7 SD. Of these 23(16.4%) were below 40 years of age and 117(83.6%) were above 40 years. Mean parity of the patients was 4.7 with SD ratio of ± 2.2 . Mean weight of the patients was 68.2 kg with ± 6.5 SD. Table I provides an overview of the indications for abdominal hysterectomy in the study population. The table summarizes the indications observed in the 140 cases included in the study. These results highlight the demographic and clinical characteristics of the patients undergoing abdominal hysterectomy, providing valuable insights into the prevalence of various indications for this surgical procedure.

Table I: Indications for abdominal hysterectomy.

Indication	N	%
Fibroid	71	50.7%
Dysfunctional uterine bleeding	55	39.3%
Endometrial polyp	05	3.57%
endometriosis	05	3.57%
Benign ovarian mass	04	2.9%
Total	140	100%

Majority of the patients who underwent hysterectomy for these indications were above 40 years of age and there was no statistical difference between above and below age 40 groups. Similarly, most of the patients had parity above 4 with no statistical difference between the two groups as shown in table II.

Discussion

Abdominal hysterectomy was the most frequent gynecological procedure performed during our study period. The mean age of our patients was 46.2, which is consistent with other national studies.^{12,13,14} The hysterectomy rate increases after the age of 40, as the majority of patients have completed their families and are either perimenopausal or menopausal. Both patients and physicians are more inclined towards a definitive treatment.

Table II: Frequency of indications of abdominal hysterectomy.

Age group * Fibroid					
		Fibroid		Total	P-value
		Yes	No		
Age group	< 40 years	11 7.9%	12 8.6%	23 16.4%	0.762
	> 40 years	60 42.9%	57 40.7%	117 83.6%	
Total		43 50.7%	71 49.3%	69 100.0%	
Age group * Adenomyosis					
		Adenomyosis		Total	P-value
		Yes	No		
Age group	< 40 years	9 6.4%	14 10.0%	23 16.4%	0.339
	> 40 years	34 24.3%	83 59.3%	117 83.6%	
Total		43 30.7%	97 69.3%	140 100.0%	
Age group * Dysfunctional uterine bleeding					
		Dysfunctional uterine bleeding		Total	P-value
		Yes	No		
Age group	< 40 years	1 0.7%	22 15.7%	23 16.4%	0.243
	> 40 years	15 10.7%	102 72.9%	117 83.6%	
Total		16 11.4%	124 88.6%	140 100.0%	
Age group * Endometrial polyp/Cervical polyp					
		Endometrial polyp/Cervical polyp		Total	P-value
		Yes	No		
Age group	< 40 years	0 0.0%	23 16.4%	23 16.4%	0.313
	> 40 years	5 3.6%	112 80.0%	117 83.6%	
Total		5 3.6%	135 96.4%	140 100.0%	
Age group * Endometriosis					
		Endometriosis		Total	P-value
		Yes	Yes		
Age group	< 40 years	0 0.0%	23 16.4%	23 16.4%	0.313
	> 40 years	5 3.6%	112 80.0%	117 83.6%	
Total		5 3.6%	135 96.4%	140 100.0%	

The majority of the women in our study who underwent hysterectomy were multipara. Similar trends were observed in other regional studies.^{7,13} High parity is expected as according to a study conducted by Anne and her colleagues in 2020, Annual population growth rate of Pakistan is 2.4, which is twice the average for south Asian countries.¹⁵ In a study conducted by Rachel cooper and colleagues, they found positive association between parity and the risk of hysterectomy.

They suggested that the decision for hysterectomy and its association with parity is more influenced by social factors rather than a medical need for hysterectomy. Women with high parity are more likely to request or be offered hysterectomy by physicians as a means to prevent further pregnancies.¹⁶ This finding is also supported by another study where the idea of hysterectomy was found to be more acceptable to parous women than nulliparous women.¹⁷

In our study, the most common reason for hysterectomy was fibroid uterus. Fibroid uterus is the most common indication for hysterectomy worldwide accounting to about 39.9 to 73.7% of all hysterectomies.¹⁸ Other local studies also observed fibroid uterus to be the most frequent indication for hysterectomy.^{13,19} Similar trend was also observed in regional and western studies.^{6,10,11,20} ACOG in its practice bulletin on clinical management guideline to obstetricians and gynecologist number 96, August 2008 recommends (level A) abdominal myomectomy and uterine artery embolization as safe alternatives to hysterectomy in cases of symptomatic leiomyomata.²¹ A systematic review by Klaus J and colleagues recommends (level A) that in cases of symptomatic fibroids first it should be confirmed that the symptoms are caused by fibroids, and if so, treatment should be planned according to the individual circumstances of the patient.²² In our study population, reasons for choosing myomectomy were not explored. Uterine artery embolization is not available in our hospital, moreover where available it is an expensive procedure.

Dysfunctional uterine bleeding was the second most common indication for hysterectomy in our study. Majority of these patients were above forty and multiparous. Many studies have recognized DUB/ abnormal uterine bleeding as the leading indication for hysterectomy.^{1,4,6,12,13} On the basis of systemic review Klaus J and colleagues recommend that pre malignant and malignant conditions should be excluded first and that hormone therapy and endometrial ablation are good options if fertility is not required and if ablation fails hysterectomy should be performed.²² Because of poor compliance hormone replacement therapy is not very successful and not preferred by patients. Endometrial ablation is not available in our setting.

Endometriosis, polyps, and benign ovarian masses accounted for a minority of patients who underwent hysterectomy in our study, which is consistent with findings from other studies.^{8,9,12,13}

Both hysterectomy and conservative treatment options are available for managing benign conditions of the uterus and adnexa. Hysterectomy offers immediate relief, and improved quality of life has been reported.¹² However, despite recommendations from various bodies, there is no standard practice, and assessing the appropriateness of hysterectomy for benign gynecological conditions is challenging. Patient education, socioeconomic status, and compliance are considered major determinants in the choice of treatment.²³ Shared decision-making, where the risks and benefits of each option are explained to the patient, allowing them to make an informed choice that suits them best, is considered the ideal approach.²²

Conclusion

In this study, it was observed that abdominal hysterectomy was the most common gynecological procedure performed. The main indications for abdominal hysterectomy in cases of benign conditions were uterine fibroid and dysfunctional uterine bleeding.

The majority of patients undergoing these procedures were above the age of forty and were multiparous. These findings contribute to our understanding of the prevalent indications for abdominal hysterectomy in our setting. Further research and evaluation of alternative treatment options may help optimize the care provided to women with these benign conditions, potentially reducing the need for hysterectomy.

Limitations: We did not study patient's education, socioeconomic status, the degree of symptoms, prior workup, prior treatment, discussion of alternative treatment in present study to evaluate the appropriateness of hysterectomy for the indications mentioned.

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