Section: Pathology

Original Research Article

ANALYSIS OF HISTOPATHOLOGICAL SPECTRUM OF HYSTERECTOMY SPECIMENS IN DINDIGUL MEDICAL COLLEGE- A CROSS SECTIONAL STUDY

C. Sofiatamilarasi[1], R. Umasamundeeswari[2], V. Nithyananthinie[1]

[1]Assistant Professor, Department of Pathology, Government Dindigul Medical College and Hospital, Tamil Nadu, India
[2]Associate professor, Department of Pathology, Government Dindigul Medical College and Hospital, Tamil Nadu, India

Received : *17/09/2023*
Received in revised form : *14/10/2023*
Accepted : *26/10/2023*

Keywords:
Leiomyoma, Adenomyosis, Hysterectomy specimen, Abnormal uterine bleeding.

Corresponding Author:
Dr. V. Nithyananthinie,
Email: pravadini_kumar@yahoo.com

DOI: 10.47009/jamp.2023.5.6.3

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2023; 5 (6); 9-13

Abstract

Background: The only effective treatment for adenomyosis and fibroids that is resistant for medical intervention, malignancy and hyperplasia is hysterectomy. Adenomyosis and leiomyoma are the two most frequent causes of AUB ultimately leading to hysterectomy. The main objectives of the study are to analyze the histopathological reports of the hysterectomy specimens received in Pathology department, Government medical college and hospital, Dindigul and to look into the spectrum of pathologies in the hysterectomy specimens. **Materials and Methods:** A cross sectional study was carried out in Department of Pathology from Jan 2021- Dec 2022. 249 hysterectomy specimens were brought into the hospital's pathology lab throughout the course of one year. Women who presented to the outpatient department complaining of AUB and having a hysterectomy met the inclusion criteria. Any visible abnormality, such as asymmetrical uterine enlargement, polyp, fibroid, pinpoint areas of bleeding, thickness of endometrium, identified and noted in grossing process. At least two bits each from the cervix, the corpus, the tubes, and the ovaries were taken for processing. Additional findings like polyp and hyperplasia were also made into bits for processing. Hematoxylin and eosin (H and E) stained sections, were then studied under a microscope. Data were entered in Microsoft Excel and were analysed using SPSS version 25. Descriptive statistics in the form of frequencies and proportions were used and inferential statistics such as Chi square test were used. P value of less than 0.05 was considered significant. Data were expressed in tables and charts wherever necessary. **Result:** The mean age of study participants was 45.41 ± 7.24 years. Majority of participants (n=145) were in 41 to 50 years age group. Among the study participants, by histopathological examination, 133 had leiomyoma, 81 had adenomyosis and 35 had dual pathology. 54 cases (40.6%) in leiomyoma were correctly diagnosed preoperatively, 19 cases (23.4%) in adenomyosis were correctly diagnosed preoperatively and no cases with dual pathology were diagnosed preoperatively. The association between age group and adenomyosis or leiomyoma was not statistically significant. **Conclusion:** In our study, Leiomyoma was most frequent histological finding in hysterectomy tissues of women with Abnormal Uterine Bleeding. Despite this, adenomyosis continues to pose clinical difficulties to identify before surgery. However, in women with AUB, the pathologist and physician must both be aware of the potential for this lesion.

INTRODUCTION

Abnormal uterine bleeding (AUB) is the most frequent reason for women in reproductive age range to attend a hospital.[1] Iron deficiency anaemia is also frequently caused by AUB in our nation, particularly in women of reproductive age.[2] Adenomyosis, uterine fibroids, polyps, endometrial hyperplasia, and cancer are the structural causes of AUB.[3,4]

Effective treatment for adenomyosis and fibroids, that is resistant to medical intervention, malignancy and hyperplasia is hysterectomy.[5] Endometrial polyps are treated with dilation and curettage, and endocervical polyps that are visible are treated by polypectomy.[6] Thermal balloon therapy, Endometrial ablation, and uterine artery embolization are some of the minimally invasive surgical methods for hysterectomy that currently present and show promise, but their limited availability and high cost

ISSN (O): 2687-5365; ISSN (P): 2753-6556

prevent them from being utilized generally.[7] Hysterectomy is still the preferred treatment since it is still widely recognized and used.[8]

Adenomyosis prevalence estimates range significantly from 5% to 70%, which is likely due to discrepancies in the histopathologic diagnostic criteria. Leiomyomas, on the other hand, are extremely common, occurring in up to 60% of Caucasians and 70% of Africans.[9-11] Additionally, they come in a variety of sizes and locations, including sub mucosal, intramural, subserosal, and combinations of these. Furthermore, even within a single person, they grow at wildly different rates.[12-14]

Leiomyoma and adenomyosis are frequent causes of AUB ultimately leading to hysterectomy. AUB and dysmenorrhea are the symptoms of adenomyosis.[15] Leiomyomas can show clinically in a variety of ways depending on their location, but the most typical ones include pain, pressure sensations and AUB.[16] AUB is the typical presentation in both cases, but sadly, they cannot be distinguished only on the basis of clinical criteria; instead, a histological study is necessary. By histopathologically examining hysterectomy specimens obtained in our department, we set out to determine the spectrum of pathologies in the hysterectomy specimens. Hence this study is done to analyze the histopathological reports of the specimens of hysterectomy received in Pathology department, Government medical college and hospital, Dindigul.

Aims and Objectives

The aim of this study is to find out the histopathological spectrum of hysterectomy specimens in Government Medical college, Dindigul. The primary objective of the study is to analyse the histopathological reports of the hysterectomy specimens received in Pathology department, Government medical college and hospital, Dindigul and the secondary objective is to look into the spectrum of pathologies in the hysterectomy specimens.

MATERIALS AND METHODS

A cross sectional study was carried out in Department of Pathology from January 2021 to December 2022. 249 hysterectomy specimens were brought into the hospital's pathology lab throughout the course of two years. Women who presented to the outpatient department complaining of AUB and having severe low back ache with abdominal pain and dysmenorhoea met the inclusion criteria. Additionally, patients who had hysterectomies after biopsies of endometrium that were not conclusive for the origin of AUB were included. The study excluded abdominal hysterectomies and vaginal hysterectomies performed for conditions other than AUB and malignancies. Age, presenting symptoms, parity, sonography (TVS) findings, rationale for hysterectomy were recorded.

Visible abnormality, such as asymmetrical uterine enlargement, polyp, fibroid, pinpoint areas and thickness of endometrium were noted during gross inspection. Additionally noted were the size, number, site of the fibroid along with degenerative changes like hyaline change, calcification. Two sections minimally each from the cervix, the tubes, the corpus and the ovaries were removed, and another portion was removed from any leiomyoma or other aberrant location. Hematoxylin and eosin (H and E) was used for staining sections, which were then inspected under a microscope.

The following criteria were used to determine whether a patient had adenomyosis: small or pinpoint cystic regions of bleeding were visible in myometrium. Presence of endometrial glands in myometrium which are more than one low power field away from endomyometrial junction.

Data were entered in Microsoft Excel and were analysed using SPSS version 25. Descriptive statistics in the form of frequencies and proportions were used and inferential statistics such as Chi square test were used. P value of less than 0.05 was considered significant. Data were expressed in tables and charts wherever necessary.

RESULTS

The mean age of the study participants was 45.41 ± 7.24 years. Majority of participants (n=145) were in 41 to 50 years age group, followed by 58 participants in 31 to 40 years age group. 31 participants were from 51 to 60 years of age, 9 participants were from 61 to 70 years of age and 6 participants were from 21 to 30 years of age. [Figure 1]

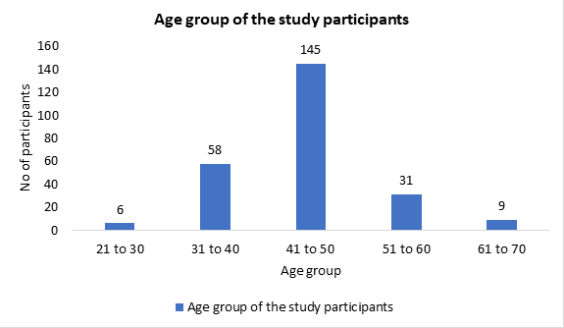

Figure 1. Age group of the study participants

Figure 2. Adenomyosis uterus gross examination

ISSN (O): 2687-5365; ISSN (P): 2753-6556

Figure 3. Leiomyoma uterus-gross examination

In the study participants, by histopathological examination, 133 had leiomyoma, 81 had adenomyosis and 35 had dual pathology. [Table 1].

Among the study participants, by clinical diagnosis, 80 were diagnosed as leiomyoma, 22 were diagnosed as adenomyosis and 1 was diagnosed as dual pathology. By histopathological examination, 133 were diagnosed as leiomyoma, 81 were diagnosed as adenomyosis and 35 were diagnosed as dual pathology. 54 cases (40.6%) in leiomyoma were correctly diagnosed preoperatively, 19 cases (23.4%) in adenomyosis were correctly diagnosed preoperatively and no cases with dual pathology were diagnosed preoperatively. [Table 2]

Among the study participants, in 21 to 30 years age group, 66.7% had leiomyoma, 16.7% had adenomyosis and 16.7% had dual pathology. In 31 to 40 years age group, 57.1% had leiomyoma, 37.9% had adenomyosis and 10.3% had dual pathology. In 41 to 50 years age group, 51% had leiomyoma, 34.5% had adenomyosis and 14.5% had dual pathology. In 51 to 60 years age group, 558.1% had leiomyoma, 19.4% had adenomyosis and 22.6% had dual pathology. In 61 to 70 years age group, 77.8% had leiomyoma and 22.2% had adenomyosis. This difference was not statistically significant by Chi square test. [Table 3]

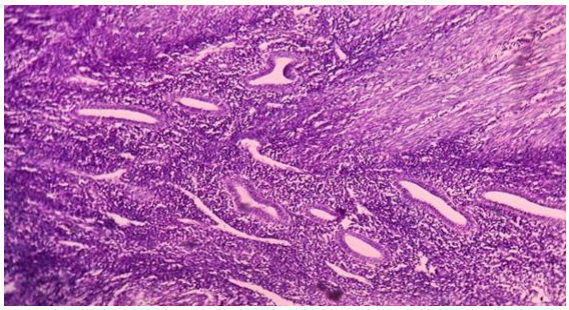

Figure 4. Adenomyosis 10x magnification-H&E STAIN

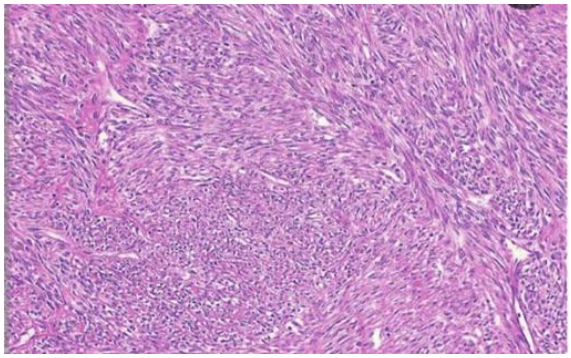

Figure 5. Leiomyoma uterus 10x magnification H&E STAIN

Table 1: HPE report in the study participants

HPE report	Frequency	Percentage
Adenomyosis	81	32.5
Leiomyoma	133	53.4
Leiomyoma and adenomyosis	35	14.1
Total	249	100

Table 2: Correlation of histopathological diagnosis with clinical diagnosis in the study participants

HPE report	Number of cases diagnosed preoperatively	Number of cases confirmed histopathologically	Number of cases correctly identified preoperatively
Adenomyosis	22	81	19 (23.4%)
Leiomyoma	80	133	54 (40.6%)
Dual	1	35	0

Table 3: Association between Age group and HPE report of the study participants:

Age group (in years)	HPE report				Chi square value	P value
	Adenomyosis	Leiomyoma	Dual	Total		
21 to 30	1 (16.7%)	4 (66.7%)	1 (16.7%)	6 (100%)	8.09	0.42
31 to 40	22 (37.9%)	30 (51.7%)	6 (10.3%)	58 (100%)		
41 to 50	50 (34.5%)	74 (51%)	21 (14.5%)	145 (100%)		
51 to 60	6 (19.4%)	18 (58.1%)	7 (22.6%)	31 (100%)		
61 to 70	2 (22.2%)	7 (77.8%)	0	9 (100%)		
Total	81 (32.5%)	133 (53.4%)	35 (14.1%)	249 (100%)		

DISCUSSION

In this study, mean age of the participants was 45.41 ± 7.24 years. Majority of the participants (n=145) were in 41 to 50 years age group, followed by 58 participants in 31 to 40 years age group. 31 participants were from 51 to 60 years of age, 9 participants were from 61 to 70 years of age and 6 participants were from 21 to 30 years of age.

ISSN (O): 2687-5365; ISSN (P): 2753-6556

This was similar to the study done by Rizvi et al1 who reported age of the patients were from 30 to 70 years with majority (82 participants) in 41 to 50 years of age contributing to 44.56% of cases.

Mehla et al,[2] suggested that out of 218 patients, all the patients in the study ranged from 30 to 70 years. Majority of instances (52.75%, n = 115) were in 41–50 years of age, making up the largest group in the study.

According to Neena et al,[3] 35 to 70 years was the age range of patients, with a mean age of 45. The age range of 45 to 55 years had the majority of instances. In this study, by histopathological examination, 133 had leiomyoma, 81 had adenomyosis and 35 had dual pathology.

Similar results were reported by Neena et al3 who stated that fibroid was the most frequent finding recorded in reports of hysterectomy specimens in 25%, adenomyosis was 12.15%, endometrial hyperplasia was 9%, adenomyosis with fibroid was 4.8% of cases, and malignancy was the least with 0.34% of cases.

The results were in contrast to Rizvi et al1 who stated that women who reported with abnormal uterine bleeding most frequently had adenomyosis as the histological pathology (n = 94).

Mehla et al,[2] revealed adenomyosis were the maximum (46.78%) among the histopathological specimens followed by leiomyoma (39.9%).

Sawke et al,[4] stated that adenomyosis was seen in 31% (n = 31) of the 100 cases, leiomyomas were present in 25% (n = 25), endometrial hyperplasia were in 23%, and endometrial polyp in 4% (n = 4).

In our study, among the study participants, by clinical diagnosis, 80 were diagnosed as leiomyoma, 22 were diagnosed as adenomyosis and 1 was diagnosed as dual pathology. By histopathological examination, 133 were diagnosed as leiomyoma, 81 were diagnosed as adenomyosis and 35 were diagnosed as dual pathology. 54 cases (40.6%) in leiomyoma were correctly diagnosed preoperatively, 19 cases (23.4%) in adenomyosis were correctly diagnosed preoperatively and no cases with dual pathology were diagnosed preoperatively.

Similar to our results, Rizvi et al,[1] stated that out of 184 patients, 81 had clinical suspicions of leiomyoma as the origin of AUB, while 103 had preoperative diagnoses of adenomyosis. 87 of the 103 were verified to have adenomyosis upon histological analysis and 76 patients with fibroid displayed the similar condition. Compared to adenomyosis (74.7%), clinico-histological correlation was higher for fibroid/leiomyoma (93.8%).

Mehla et al,[2] stated that among 218 patients, 119 had adenomyosis diagnosed preoperatively, and 99 had leiomyoma diagnosed preoperatively. According to histological investigation, only 96 of these 119 patients had adenomyosis, compared to 91 of the 99 patients who had leiomyoma. Therefore, compared to adenomyosis (80.7%), the clinico-histological correlation was higher for fibroid/leiomyoma (91.9%).

In our study, among the study participants, in 21 to 30 years age group, 66.7% had leiomyoma, 16.7% had adenomyosis and 16.7% had dual pathology. In 31 to 40 years age group, 57.1% had leiomyoma, 37.9% had adenomyosis and 10.3% had dual pathology. In 41 to 50 years age group, 51% had leiomyoma, 34.5% had adenomyosis and 14.5% had dual pathology. In 51 to 60 years age group, 558.1% had leiomyoma, 19.4% had adenomyosis and 22.6% had dual pathology. In 61 to 70 years age group, 77.8% had leiomyoma and 22.2% had adenomyosis. This difference was not statistically significant by Chi square test.

Rizvi et al,[1] stated that, adenomyosis was common 46.34% (n = 38) in perimenopausal age group followed by leiomyoma 41.46% (n = 34). 12.19% (n = 10) showed dual pathology of adenomyosis and leiomyoma. Adenomyosis was the main cause of AUB in both the younger age groups and the post-menopausal age groups.

According to Mehla et al,[2] among women in the perimenopausal age range, adenomyosis was most prevalent pathology (47%), followed by leiomyoma (42%), while 13% had both pathologies. Adenomyosis and leiomyoma prevalence decreased with age, reaching 3.92% and 2.29%, respectively, in the group of people between the ages of 21 and 30, and 1.96% and 1.15%, respectively, in those over the age of 60. The leading cause of AUB in both the younger age groups and the postmenopausal age groups was adenomyosis.

CONCLUSION

Leiomyoma was the most frequent histological finding among hysterectomy tissues of women with Abnormal Uterine Bleeding. Despite this, adenomyosis continues to pose clinical difficulties to identify before surgery. However, in women with AUB, the pathologist and physician must both be aware of the potential for this lesion.

Recommendations

Conducting this study in many centers and with a greater number of samples is recommended in future.

REFERENCES

1. Rizvi G, Pandey H, Pant H, et al. Histopathological correlation of adenomyosis and leiomyoma in hysterectomy specimens as the cause of abnormal uterine bleeding in women in different age groups in the Kumaon region: A retroprospective study. Journal of mid-life health. 2013;4(1):27.
2. Mehla S, Singh M, Chutani N. Clinicopathological correlation of adenomyosis and leiomyoma in hysterectomy specimens as the cause of abnormal uterine bleeding: A retrospective study. Sch J App Med. 2014;2:3320-3.
3. Neena Y, Honey B. Clinico-pathological correlation of hysterectomy specimens for abnormal uterine bleeding in rural area. J. Evol. Med. Dent. Sci. 2013;2(39):7506-12.
4. Sawke NG, Sawke GK, Jain H. Histopathology findings in patients presenting with menorrhagia: A study of 100 hysterectomy specimen. Journal of mid-life health. 2015;6(4):160.

ISSN (O): 2687-5365; ISSN (P): 2753-6556

5. Bhosle A, Fonseca M. Evaluation and histopathological correlation of abnormal uterine bleeding in perimenopausal women. Bombay Hosp J 2010; 52:69‐72.
6. Dueholm M. Transvaginal ultrasound for diagnosis of adenomyosis: A review. Best Pract Res Clin Obstet Gynaecol 2006; 20:569‐82.
7. Day Baird D, Dunson DB, Hill MC, et al. High cumulative incidence of uterine leiomyoma in black and white women: Ultrasound evidence. Am J Obstet Gynecol 2003; 188:100‐7.
8. Munro MG, Critchley HO, Broder MS, Fraser IS FIGO Classification system (PALM‐COEIN) for causes of abnormal uterine bleeding in nongravid women of reproductive age, Int J Gynecol Obstet 2011;113:3‐13.
9. Shergill SK, Shergill HK, Gupta M, Kaur S. Clinicopathological study of hysterectomies. J Indian Med Assoc 2002; 100:238‐9.
10. Rashida Hafiz, Muhammad Ali, Mansoor Ahmad. Fibroid as a causative factor in menorrhagia and its management. Pakistan J Med Res 2003; 42:90‐6.
11. Mukherjee SN. Role of hysterectomy and its alternatives in benign uterine diseases. J Indian Medical Assoc 2008; 106:232‐6.
12. Andreotti RF, Fleischer AC. The sonographic diagnosis of adenomyosis. Ultrasound Quarterly 2005; 21:167‐70.
13. Sajjad M, Iltaf S, Qayyum S. Pathological findings in Hysterectomy specimens of patients presenting with menorrhagia in different age groups. Ann Pak Inst Med Sci 2011; 7:160‐2.
14. Shah Sarfraz T, Tariq H. Histopathologic findings in menorrhagia a study of 100 hysterectomy specimens. Pak J Pathol 2005; 16:83‐5.
15. Tahiira T, Qureshi S, Roohi M. Abdominal hysterectomy; performed by post graduate trainees. Professional Med J 2007; 14:685‐8.
16. Khawaja N, Zahid B, Tayyeb R. Clinical audit of hysterectomies. Ann King Edward Med Coll 2005; 11:219‐21.

ISSN (O): 2687-5365; ISSN (P): 2753-6556