Original Article ISSN (O):2395-2822; ISSN (P):2395-2814

Clinicopathological Study of Uterine Lesions in Hysterectomy Specimens.

Simrat Jit Kaur[1], Rajiv Kamal Gupta[2], Manpreet Kaur[3]

[1]Junior Resident, Department of Pathology, Government Medical College, Patiala.
[2]Associate Professor, Department of Pathology, Government Medical College, Patiala.
[3]Assistant Professor, Department of Obstetrics & Gynaecology, Government Medical College, Patiala.

Received: November 2017
Accepted: November 2017

ABSTRACT

Background: Women worldwide suffer from various gynaecological disorders that require hysterectomy as a treatment option. Objectives: Our aim was to conduct a histopathological study of various uterine lesions in hysterectomy specimens and to correlate the findings with clinical indications. **Methods:** A prospective study was done on 200 hysterectomy specimens. The specimens were fixed in formalin and the tissue was adequately processed. The sections were stained with routine Haematoxylin and Eosin stain. **Results:** In this study the most common clinical indication for hysterectomy was leiomyoma (57.0%) followed by utero-vaginal prolapse (28.5%). Clinical indication of leiomyoma was confirmed by histopathology in 96.5% cases, whereas that of cervical dysplasia, cervical polyp, squamous cell carcinoma cervix, chronic pelvic inflammatory disease, adenomyosis and endometrial carcinoma was confirmed in 100% cases. **Conclusion:** The ultimate diagnosis and prognosis depends on the histopathological examination; therefore every operated specimen must be subjected to histopathology.

Keywords: Hysterectomy, Histopathology, Leiomyoma.

INTRODUCTION

Hysterectomy is defined as the surgical removal of the uterus. It is done for various indications like Uterine leiomyoma, Dysfunctional uterine bleeding, Genital prolapse, Endometriosis, adenomyosis, Chronic pelvic pain, Pelvic inflammatory disease (PID), Endometrial hyperplasia, Genital tract malignancy and Obstetric indications.[1] Histopathological study of hysterectomy specimens is of great importance not only to detect and confirm the diagnosis but also for the prognosis and further follow up of the patients.

MATERIALS AND METHODS

The study was conducted on 200 hysterectomy specimens received in the Department of Pathology from the Department of Obstetrics and Gynaecology, Government Medical College and Rajindra Hospital, Patiala. The study proposal and procedures were approved by the Ethical Committee of Government Medical College, Patiala.

Name & Address of Corresponding Author
Dr Rajiv Kamal Gupta
Associate Professor,
Department of Pathology,
Government Medical College,
Sangrur Road, Patiala – 147001.

All the hysterectomy cases due to uterine and cervical pathology were included in this study. Subtotal hysterectomies and hysterectomies due to tubal, ovarian and obstetrical causes were excluded. All the specimens were fixed in 10% formalin. Gross examination of the specimen was done and pieces were taken from different parts of cervix, endometrium and myometrium. Tissue processing was done and blocks were made. Sections of 4µm thickness were cut from these blocks and were stained with routine Haematoxylin and Eosin stain and examined under microscope. The clinical data and histopathological findings were recorded. Frequency of various uterine lesions was calculated and correlation with age, parity, mode of presentation and clinical indication was done. Chi-square test was used to determine the statistical significance. A p-value of <0.05 was considered statistically significant.

RESULTS

Out of 200 cases studied, most of the uterine lesions i.e. 51.0% were seen in age group 41-50 years, 25.5% in the age group 31-40 years, 16.5% in the age group 51-60 years, 6.0% in the age group 61-70 years and 1% in the age group > 70 years. The mean age was 47.29 ± 8.74 years. Maximum cases (77.0%) had parity between 1 to 3. Forty one cases

(20.5%) had parity between 4 to 6. Three cases (1.5%) were seen in nulliparous women and 1.0% cases had parity more than 6.

In this study, patients presented with multiple complaints. Most common presenting symptom was excessive bleeding (38%), pain lower abdomen (38%) followed by something coming out of vagina (29%). Irregular bleeding was seen in 14.0%, continuous bleeding per vaginum in 3.0%, discharge per vaginum in 6.5%, pain during menstruation in 2.5%, post-menopausal bleeding in 7.0% and postcoital bleeding in 2.0%.

Duration of symptoms varied from few months to many years. In majority of cases (64.5%), the duration of disease in the patients was ≤1 year. However, in 26.0% the duration was more than 1 to 5 years. Few cases (9.5%) presented with duration of disease more than 5 years.

The most common clinical indication for hysterectomy was leiomyoma (57.0%) followed by utero-vaginal prolapse (28.5%). Other indications included abnormal uterine bleeding (4.5%), cervical dysplasia (2.0%), cervical polyp (1.0%), squamous cell carcinoma cervix (1.5%), chronic pelvic inflammatory disease (0.5%), adenomyosis (1.0%), endometrial hyperplasia (2.0%) and endometrial carcinoma (2.0%). Out of the 200 cases studied, abdominal hysterectomy was performed in 72.5% and vaginal hysterectomy in 27.5%.

In this study, the most common histopathological diagnosis in cervix was chronic cervicitis (70.0%) followed by chronic cervicitis with squamous metaplasia (20.5%), dysplasia (4.0%), squamous cell carcinoma (2.0%), cervical polyp (2.0%) and acute cervicitis (0.5%). No pathology was seen in 1.0% cases. [Table 1]

Table 1: Histopathological diagnosis in cervix.

Histopathological diagnosis	Number of Patients	Percentage
Chronic cervicitis	140	70.0
Chronic cervicitis with squamous metaplasia	41	20.5
Dysplasia	8	4.0
Squamous cell carcinoma	4	2.0
Cervical polyp	4	2.0
Acute cervicitis	1	0.5
No pathology	2	1.0
Total	200	100.0

In endometrium, the most common histopathological diagnosis was proliferative phase (31.0%) followed by atrophic endometrium (17.5%). Secretory phase was seen in 13.0%, endometrial breakdown in 1.0%, disordered proliferative phase in 5.5%, endometrial polyp in 5.5%, chronic endometritis in 2.0%, simple hyperplasia in 14.0%, complex hyperplasia in 2.0%, complex hyperplasia with atypia in 1.5%, endometrioid carcinoma in 3.0% and serous carcinoma in 0.5%. Endometrial cavity was not appreciated in 3.5% cases. [Figure 1]

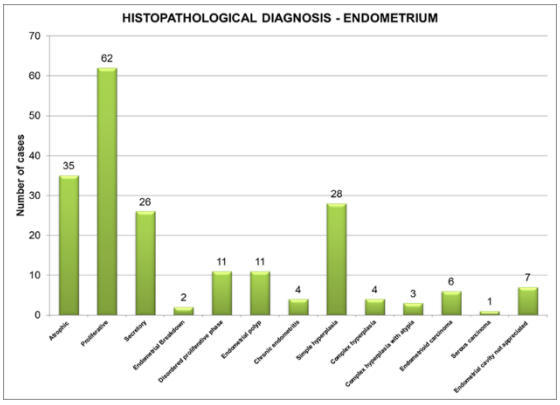

Figure 1: Histopathological diagnosis in Endometrium

In this study, the most common histopathological diagnosis in myometrium was leiomyoma (65.0%) followed by adenomyosis (28.5%). Leiomyoma and adenomyosis together were seen in 18.0% cases. Myometrium was invaded by endometrial carcinoma in 1.5% cases. One case (0.5%) of leiomyosarcoma was seen. Myometrium showed no pathology in 22.5 % cases. [Table 2]

Table 2: Histopathological diagnosis in myometrium.

Histopathological diagnosis	Number of Patients	Percentage
Leiomyoma	94	47.0
Adenomyosis	21	10.5
Leiomyoma + Adenomyosis	36	18.0
Invasion by Endometrial carcinoma	3	1.5
Leiomyosarcoma	1	0.5
No pathology	45	22.5
Total	200	100.0

In 130 cases showing leiomyoma, the most common secondary change observed was hyalinization (33.3%) followed by calcification (23.8%). Myxomatous change was seen in 19.0%, cystic change in 14.3%, haemorrhage in 4.8% and infection in 4.8%. The most common site of leiomyoma was intramural (62.9%) followed by submucosal (21.8%) and subserosal (15.3%).

Distribution of age was correlated with clinical indication. The most common clinical indication for hysterectomy in age group <50 years was leiomyoma. In age group >50 years, the most common indication was uterovaginal prolapse. Hysterectomy due to endometrial carcinoma and squamous cell carcinoma cervix was done in older age groups. The result was statistically significant (p value <0.001).

In this study, 78.4 % of the cases in the age group 41-50 years and 66.7% of the cases in the age group 31-40 years were diagnosed with leiomyoma suggesting statistically significant relation between age group 31-50 years and leiomyoma (p<0.001).

The incidence of leiomyoma was 100% in nullipara, while 70.1% of cases in parity group 1-3 had leiomyoma. Incidence of leiomyoma was 46.3% in

parity group 4-6 and 0.0% in parity >6 suggesting decrease in incidence of leiomyoma with increasing parity. The result was statistically significant with p value=0.004. In this study, most of the cases presenting with pain lower abdomen (82.9%), menorrhagia (88.2%), and irregular bleeding (85.7%) had leiomyoma as the main histopathological finding.

In our study, 69.2% cases with subserosal fibroid presented with pain lower abdomen and 56.8% of cases with submucosal fibroid presented with irregular bleeding suggesting significant correlation of symptoms with site of leiomyoma (p value <0.001).

In this study, 98.2% of the cases presenting with prolapse had chronic cervicitis as the main histopathological finding in cervix. The result was statistically significant (p value=0.018). All cases with parity >6 (100.0%) presented with prolapse, while 48.8% of cases in parity group 4-6 presented with prolapse. Incidence of prolapse in parity group 1-3 was 22.7% and in nulliparous was 0.0% suggesting increase in risk of prolapse with increasing parity (p value = 0.001).

In our study, clinical indication of leiomyoma was confirmed by histopathology in 96.5% cases, whereas that of cervical dysplasia, cervical polyp, squamous cell carcinoma cervix, chronic pelvic inflammatory disease, adenomyosis and endometrial carcinoma was confirmed in 100% cases. Four cases in which hysterectomy was done due to leiomyoma revealed adenomyosis on histopathology in 2 cases, endometrial polyp in 1 case, and leiomyosarcoma in 1 case.

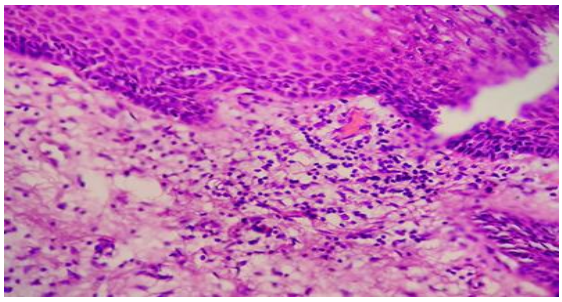

Figure 2: Photomicrograph of chronic cervicitis showing mononuclear cell infiltration in stroma (H&E X 400).

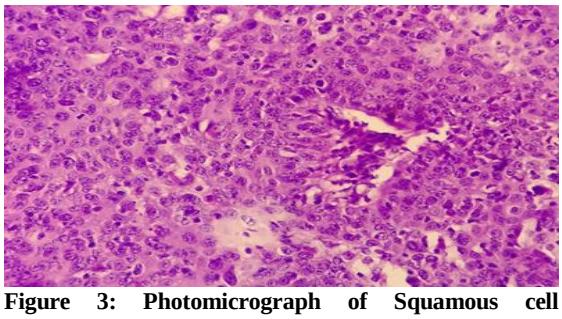

Figure 3: Photomicrograph of Squamous cell carcinoma cervix showing malignant epithelial cells exhibiting pleomorphism, mitosis and prominent nucleoli (H&E X 400).

Figure 4: Gross picture of uterus showing endometrial cavity involved by large irregular growth.

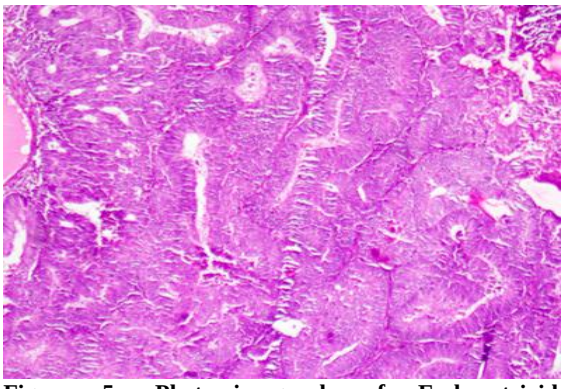

Figure 5: Photomicrograph of Endometrioid carcinoma showing confluent glandular pattern with invasion into stroma (H&E X 100).

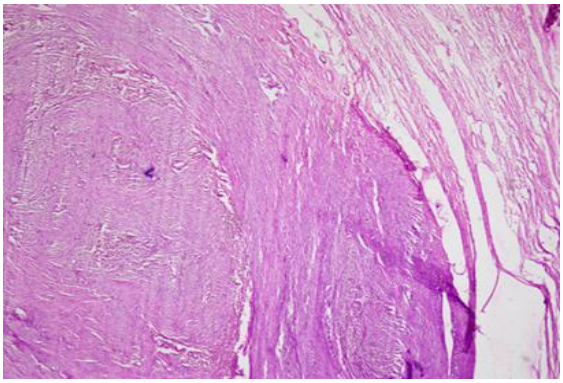

Figure 6: Photomicrograph of Leiomyoma showing whorled, anastomosing fascicles of fusiform smooth muscle cells (H&E X 100).

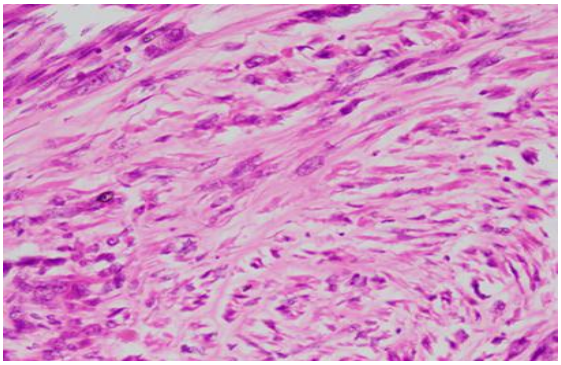

Figure 7: Photomicrograph of Leiomyosarcoma showing spindle shaped tumor cells with eosinophillic cytoplasm (H&E X 400).

DISCUSSION

In this study the mean age was 47.29 ± 8.74 years which was comparable to that found by Siwatch et al in which mean age was 46.2 ± 3.2 years and Verma et al in which mean age was 50.86 ± 6.9 years.[2,3]

The most common presenting symptom was excessive bleeding (38.0%), pain lower abdomen (38.0%) followed by something coming out of vagina in 29.0% cases. Symptomatic presentation was similar to that seen by Sobande et al and Rather et al.[4,5]

In the present study the most common clinical indication for hysterectomy was leiomyoma (57.0%) which was comparable to that found by Modupeola et al (61.8%).[6] The next common indication was utero-vaginal prolapse (28.5%) which was similar to the studies by Shergill et al (24.0%) and Domblae et al (30.3%).[7,8]

In this study, the most common clinical indication for hysterectomy in age group <50 years was leiomyoma. The possible reason is that leiomyomas are mostly seen in reproductive age group and are hormone sensitive smooth muscle tumours.[9] In age group >50 years, the most common indication was uterovaginal prolapse. The weakening of pelvic floor muscles with increasing age could be the possible reason.

Incidence of prolapse was found to be increasing with increase in parity. This was similar to the studies conducted by Kim et al and Kudish et al.[10,11] The incidence of leiomyoma was more in nulliparous and was found to be decreasing with increase in parity. The remodeling of uterus after pregnancy could be the possible explanation for this.[12]

In this study overall incidence of chronic cervicitis including chronic cervicitis with squamous metaplasia was 90.5%. Incidence of cervical dysplasia was 4.0% and that of squamous cell carcinoma was 2.0%. The results were comparable to that found by Jha et al,[13] Talukdar et al and Rather et al [Table 3].[5,14]

Table 3: Comparison with other studies for histopathological diagnosis in cervix

Author and year of Study	Chronic Cervicitis	Cervical Dysplasia	Squamous cell carcinoma
Jha et al[13] (2006)	96.4%	1.0%	0.5%
Talukdar et al[14] (2007)	87.80%	-	2.44%
Rather et al[5] (2013)	89.39%	1.14%	0.56%
Present study (2017)	90.5%	4.0%	2.0%

In endometrium, the most common histopathological diagnosis was proliferative phase (31.0%). This was similar to the results found by Jha et al[13] (30.8%). Atrophic endometrium was seen in 17.5% which was similar to that found by Domblae et al[8] (16.6%).

The incidence of endometrial hyperplasia in our study was 17.5% which was comparable to that found by Ojeda (22.33%) and Bhosle and Fonseca (17.8%).[15,16]

Endometrial carcinoma in this study was seen in 3.5% cases which was higher as compared to that found by Gupta et al,[17] Domblae et al and other studies.[8] [Table 4] The possible explanation could be the higher number of total cases in these studies as compared to our study. Majority of the patients of endometrial carcinoma presented with post-menopausal bleeding.

Table 4: Comparison with other studies for incidence of endometrial carcinoma

Author and year of Study	Endometrial Carcinoma
Jha et al[13] (2006)	0.9%
Gupta et al[17] (2009)	1.0%
Rather et al[5] (2013)	0.56%
Domblae et al[8] (2015)	0.72%
Present study (2017)	3.5%

The most common histopathological diagnosis in myometrium was leiomyoma (65.0%) followed by adenomyosis in 28.5% cases. Incidence of leiomyoma was comparable to that found by Perveen and Tayyab.[18] The percentage of leiomyoma was lower in a study by Sajjad et al,[19] as they included ovarian pathologies also. Incidence of adenomyosis was similar to the studies conducted by Perveen and Tayyab,[18] Bhosle and Fonseca and Sajjad et al.[16,19] [Table 5] Adenomyosis was common incidental finding detected on histopathology.

Table 5: Comparison with other studies for histopathological diagnosis in myometrium

Author and year of Study	Leiomyoma	Adenomyosis
Perveen and Tayyab[18] (2008)	59.2%	24.0%
Bhosle and Fonseca[16] (2010)	55.0%	29.4%
Sajjad et al[19] (2015)	41.0%	32.0%
Present study (2017)	65.0%	28.5%

Most of the cases with subserosal fibroid presented with pain abdomen, while most of the cases with submucosal fibroid presented with irregular bleeding. Subserosal fibroids can cause pain due to compression or torsion (if they are pedunculated). Submucosal fibroids can cause compression of the overlying endometrium and compromise of its vascular supply.

In the present study, clinical indication of leiomyoma was confirmed by histopathology in 96.5% cases. This was comparable to that found by Rather et al,[5] (90.9%) and Gupta and Parmar,[20] (92.10%). Clinical Indication of cervical dysplasia, squamous cell carcinoma cervix and endometrial

carcinoma was confirmed in 100% cases. These results were same as that found by Gupta and Parmar.[20] Cervical polyp and chronic pelvic inflammatory disease was confirmed by histopathology in 100% cases which was same as that found by Perveen et al.[21] Percentage of confirmation of adenomyosis on histopathology was same as that seen by Gupta et al and Rather et al.[5,17]

CONCLUSION

Hysterectomy is a very commonly performed major surgical procedure for most of the gynaecological problems. The ultimate diagnosis and prognosis depends on the histopathological examination; therefore every operated specimen must be subjected to histopathology. The clinicopathological correlation is mandatory for optimal patient management.

REFERENCES

1. Carlson KJ, Nichols DH, Schiff I. Indications for hysterectomy. New Engl J Med. 1993;328:856-601.
2. Siwatch S, Kundu R, Mohan H, Huria A. Histopathologic audit of hysterectomy specimens in a tertiary care hospital. Sri Lanka Journal of Obstetrics and Gynaecology. 2013;34(4):155-58.
3. Verma D, Singh P, Kulshrestha R. Analysis of histopathological examination of the hysterectomy specimens in a north Indian teaching institute. International Journal of Research in Medical Sciences. 2016;4(11):4753-8.
4. Sobande AA, Eskander M, Archibong EI, Damole IO. Elective hysterectomy: A clinicopathogical review from Abha catchment area of Saudi Arabia. West African journal of medicine. 2005;24(1):31-5.
5. Rather GR, Gupta Y, Bardhwaj S. Patterns of Lesions in Hysterectomy Specimens: A Prospective Study. JK Science. 2013;15(2):63-68
6. Modupeola S, Adesiyun AG, Agunbiade OA, Mohammed-Duro A. Clinico-pathological Assessment of Hysterectomies in Zaria. European Journal of General Medicine. 2009;6(3):150-3.
7. Shergill SK, Shergill HK, Gupta M, Kaur S. Clinicopathological study of hysterectomies. J Indian Med Assoc. 2002;100(4):238-46.
8. Domblae V, Gundalli S, Sonali. Histopathological Analysis of Uterine Lesions in Hysterectomy Specimens. International Journal of Science and Research (IJSR). 2015;4(5):2171-74.
9. Robboy SJ, Bentley RC, Butnor K, Anderson MC. Pathology and pathophysiology of uterine smooth-muscle tumors. Environmental health perspectives. 2000:779-84.
10. Kim CM, Jeon MJ, Chung DJ, Kim SK, Kim JW, Bai SW. Risk factors for pelvic organ prolapse. International Journal of Gynecology & Obstetrics. 2007;98(3):248-51.
11. Kudish BI, Iglesia CB, Gutman RE, Sokol AI, Rodgers AK, Gass M et al. Risk factors for prolapse development in white, black, and Hispanic women. Female pelvic medicine & reconstructive surgery. 2011;17(2):80.
12. Laughlin SK, Stewart EA. Uterine leiomyomas: individualizing the approach to a heterogeneous condition. Obstetrics and gynecology. 2011;117(2 Pt 1):396.
13. Jha R, Pant AD, Jha A, Adhikari RC, Sayami G. Histopathological analysis of hysterectomy specimens. JNMA J Nepal Med Assoc. 2006;45(163):283-90.
14. Talukder SI, Haque MA, Huq MH, Alam MO, Roushan A, Noor Z et al. Histopathological analysis of hysterectomy specimens. Mymensingh Med J. 2007;16(1):81-4.
15. Ojeda VJ. The pathology of hysterectomy specimens. N Z Med J 1979;14;89(631):169-71.
16. Bhosle A and Fonseca M. Evaluation and histopathological correlation of abnormal uterine bleeding in perimenopausal women. Bombay Hospital Journal. 2010;52(1):69-72.
17. Gupta G, Kotasthane D, Kotasthane V. Hysterectomy: A Clinico-Pathological Correlation of 500 Cases. The Internet Journal of Gynecology and Obstetrics. 2009;14:1-5.
18. Perveen S and Tayyab S. A Clinicopathological Review Of Elective Abdominal Hysterectomy. Journal of Surgery Pakistan (International) 2008;13(1):26-29.
19. Sajjad M, Akram M, Khan ZA, Ghafoor A. Pattern of histopathological lesions in uterine corpus of hysterectomy specimens. Gomal Journal of Medical Sciences. 2015;13(1): 58-61.
20. Gupta K and Parmar M. Clinicohistopathological correlation of hysterectomy in rural India: an observational study. Int J Reprod Contracept Obstet Gynecol 2015;4(2):408-12.
21. Perveen S, Ansari A, Naheed F, Sultana A. Pattern of Lesion in Hysterectomy Specimens and Clinical Correlation. Pakistan Journal of Medical and Health Sciences (P J M H S) 2014;8(2):465-69.

How to cite this article: Kaur SJ, Gupta RK, Kaur M. Clinicopathological Study of Uterine Lesions in Hysterectomy Specimens. Ann. Int. Med. Den. Res. 2018; 4(1): PT18-PT22.

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