Hysterectomy: A Clinico-Pathological Correlation Of 500 Cases

G Gupta, D Kotasthane, V Kotasthane

Citation

G Gupta, D Kotasthane, V Kotasthane. *Hysterectomy: A Clinico-Pathological Correlation Of 500 Cases*. The Internet Journal of Gynecology and Obstetrics. 2009 Volume 14 Number 1.

Abstract

Hysterectomy is the most commonly performed gynaecological surgery throughout the world. Few studies have been performed describing the pathologic findings in hysterectomy specimens and examining the relationship between the pre-operative clinical indication and pathologic diagnosis. This study was undertaken to identify the most common pathologies identified in hysterectomy specimens and to correlate the findings with the clinical indications. Five hundred hysterectomy cases, over a period from April 2008 to March 2010 formed the subject for the present study. Ninety six percent of the hysterectomies were done for benign indications. Surgical specimens were formalin fixed and paraffin embedded. The sections were stained with routine hematoxylin and eosin stain. The most common pathology identified was leiomyoma followed by adenomyosis. Hysterectomies done for uterovaginal prolapse showed atrophic endometrium on histopathological examination. Other less frequent pathologies identified included endometrial hyperplasia, chronic endometritis and endometrial polyp. The pathologic examination confirmed the clinical diagnosis in all cases of leiomyoma, adenomyosis and endometrial polyps. This study confirms that benign pathologies are more common in hysterectomy specimens than their malignant counterparts. Histopathology is mandatory for mandatory for ensuring diagnosis and thus management, in particular of malignant disease.

INTRODUCTION

Hysterectomy is one of the most common surgical procedures in peri and postmenopausal women; it is the second most common surgical procedure in USA.[1] According to centre of disease control and prevention in United States, about 5 per 1000 women undergo hysterectomy annually in USA and 1 in 4 women will have hysterectomy by age 60 years.[2] Charles Clay performed the first subtotal hysterectomy in Manchester, England in 1843 and first total abdominal hysterectomy in 1929.[3] Since early 20th century, hysterectomy is a definitive treatment of pelvic pathology including fibroid, abnormal heavy bleeding, chronic pelvic pain, endometriosis, adenomyosis, uterine prolapse, pelvic inflammatory disease and cancer of reproductive organs.[4] Around 60-80% of hysterectomies in the USA and the UK are abdominal.[5,6] Eighty-three percent of gynaecologists recommend oophorectomy in postmenopausal women, 50% in perimenopausal women and <5% in premenopausal women at the time of hysterectomy.[7]

This study is a review of the pattern of uterine pathologies at hysterectomy in order to identify the most common uterine pathologies in this region and correlate them with their clinical indications.

METHODOLOGY

The present study was conducted in the Department of Pathology, Mahatma Gandhi Medical College and Research Institute, Puducherry, India over a period of two years from April 2008 to March 2010. Five hundred hysterectomy specimens were received by the pathology department during this period. On receiving the hysterectomy specimens, the gross features were noted. Multiple bits were taken from the representative sites, processed and paraffin blocks were made. The blocks were sectioned and stained with hematoxylin and eosin. A detailed microscopic examination of the tumours was done to arrive at an accurate diagnosis. In cases of more than one pathologic diagnosis, both diagnoses were counted by including them separately in their assigned category. Patient's age, clinical presentation and clinical indication as well as the type of hysterectomy were reviewed. The correlation between the clinical presentation and the pathologic diagnosis was estimated.

RESULTS

Five hundred hysterectomies were studied. Hysterectomies were distributed over a wide age ranging from 20 years to 80 years. Of this fifty-two percent (51.40%) cases were encountered in 40-49 years which is the most common age

group. Twenty-two percent (21.40%) women were in age group of 30-39 years and 19.60% were 50-59 years. The relationship between age and number of hysterectomies is illustrated in Table 1.

Figure 1

Table 1: Age Distribution of 500 cases of hysterectomy

AGE	NO. OF CASES	PERCENTAGE
20-29	2	0.40%
30-39	107	21.40%
40-49	257	51.40%
50-59	98	19.60%
60-69	30	6.00%
70-79	5	1.00%
80 & above	1	0.20%

The most common type of hysterectomies was Total Abdominal hysterectomy (TAH) and Total Abdominal hysterectomy with bilateral salpingo-oophorectomy, followed by vaginal hysterectomy. The most common age group for TAH and vaginal hysterectomy was 40-49 years, as shown in Table 2. Subtotal hysterectomy was only seen in 30-39 years and hysterectomy with right oophorectomy was seen only in 50-59 years.

Figure 2

Table 2: Type of Hysterectomy in different age groups

Type of Hysterectomy	Age							
	20-29	30-39	40-49	50-59	60-69	70-79	80 above	No. of cases
Hysterectomy with Right Oophorectomy	0	0	0	1	0	0	0	1
Subtotal Hysterectomy	0	1	0	0	0	0	0	1
Vaginal Hysterectomy	1	15	29	7	0	1	0	53
Total Abdominal Hysterectomy	0	31	40	15	10	0	0	96
Total Adbominal Hysterectomy with Bilateral Salpingo-Oophorectomy	1	15	59	20	1	0	0	96

Indications for hysterectomy varied from menstrual abnormalities to suspected pelvic malignancy. The various indications for hysterectomy are depicted in Table 3. Ninety-six percent were for benign and four were for malignant indications. Utero-vaginal prolapse was the most common pre-operative clinical diagnosis found in 202 (40.0%) cases, followed by uterine leiomyoma diagnosed in 172 (34.06%) cases. Other benign clinical indications included dysfunctional uterine bleeding or DUB (7.72%), adenomyosis (10.89%), endometrial polyp (1%), and ovarian cyst (2.77%). Eighteen hysterectomies were performed for malignant indications which included ovarian tumours, carcinoma cervix and malignant ascites.

Figure 3

Table 3: Pre-operative clinical diagnosis for hysterectomies

Clinical diagnosis	No. of cases	Percentage
Fibroid	172	34.06%
Dysfunctional uterine bleeding	39	7.72%
Adenomyosis	55	10.89%
Utero-vaginal prolapse	202	40.00%
Polyp	5	0.99%
Ovarian Cyst	14	2.77%
Ovarian Tumor	8	1.58%
Ascites	1	0.20%
Carcinoma Cervix	9	1.78%

On histopathology in many hysterectomy specimens, more than one type of pathology was found. Leiomyoma was the commonest pathology found in thirty five percent of the cases followed by adenomyosis in twenty four percent cases as illustrated in Table 4. Hysterectomies done for utero-vaginal prolapse showed atrophic endometrium on histopathological examination. Other less frequent pathologies identified included endometrial hyperplasia, chronic endometritis and endometrial polyp. One case of tuberculous endometritis was found. Five cases of endometrioid adenocarcinoma and one case of endometrial stromal sarcoma was also identified. Tumours of the myometrium included leiomyosarcoma found in four cases and mixed mesenchymal tumour in one case.

Figure 4

Table 4: Pattern and Frequency of Uterine pathologies identified in 500 Hysterectomy cases

Histopathological Diagnosis	No. of cases	Percentage
Leiomyoma	175	35.00%
Adenomyosis	121	24.20%
Atrophic endometrium	153	30.60%
Chronic endometritis, endometrial hyperplasia, tuberculous endometritis, disordered proliferative endometrium	139	27.80%
Polyps	21	4.20%
Endometrioid adenocarcinoma	5	1.00%
Endometrial stromal sarcoma	1	0.20%
Leiomyosarcoma	4	0.80%
Malignant mixed mullerian tumour	1	0.20%

The final pathologic (true) diagnosis confirmed the clinical indication in all cases (100% correlation) of leiomyomas, adenomyosis and endometrial polyps. The thirty-nine cases diagnosed clinically as dysfunctional uterine bleeding were pathologically proven as follows: nine leiomyoma, ten as adenomyosis, eleven had simple endometrial hyperplasia and nine showed endometrial polyps.

DISCUSSION

Hysterectomy is the most commonly performed gynaecological surgery throughout the world. Abdominal removal of uterus is Total abdominal hysterectomy while removal of uterus is by vaginal route is termed as vaginal hysterectomy. Supracervical removal of uterus is termed as Subtotal hysterectomy.[8] In the UK and USA around 60-80% hysterectomies are abdominal. Abdominal route is associated with longer hospital stay, increased complications and higher cost; but due to practice of styles, training habits and performances of gynaecologist, most of the gynaecologists still continue to use the abdominal approach for hysterectomies that could be performed vaginally. Since vaginal hysterectomy carries less risk and complications, this route is encouraged especially if the disease is confined to uterus and the uterine weight is less than 280gm.[9] Hysterectomy is a successful operation in terms of symptom relief and patient satisfaction. It provides a definitive cure to many diseases involving the uterus as well as adnexae like fibroids, DUB, adenomyosis, endometriosis, pelvic inflammatory disease and pelvic organ prolapse, and malignancy.

The commonest surgical approach in the majority of cases in this study was abdominal hysterectomy. Chryssiopoulos et al studied 3410 total hysterectomies over a period of 16 years and the abdominal approach was preferred in 85.33% and the vaginal route in 14.67%.[10]

Histopathological examination of surgical specimens carries ethical, legal, diagnostic and therapeutic significance. A variety of conditions in gynaecological practice require removal of uterus that may show no gross or microscopic pathology when examined by the pathologist. Removal of a normal uterus may be indicated and permitted in the treatment of ovarian, fallopian tube and vaginal cancer, pelvic inflammatory disease, endometriosis, pelvic pain and pelvic tuberculosis.[11]

The mean age at hysterectomy in this study was 45.6 years. In a study in Nepal, the mean age of women undergoing hysterectomy was 46.3 years.[12] Indications in 96% patients were benign diseases. In USA 91.7% hysterectomies are for benign indications. In our study the main indication for hysterectomy was utero-vaginal prolapse followed by uterine leiomyoma. Commonest indication was fibroid and DUB (26%) in the study by Shergill SK.[13] Jha R found that leiomyoma was the indication in 24.9% cases, ovarian tumour in 14.9% cases and DUB in 7.7% cases.[12] Similar results have been reported by Pokras and Hufnagel.[14] Clarke A has reported the commonest indication to be DUB (58%), followed by fibroids (23.2%).[15]

Only few studies have compared pre-operative clinical diagnosis with the histopathology of hysterectomy specimens. We have found that majority of pre-operative diagnosis of our cases were confirmed on histopathology. Lee NC found that out of 1283 women studied, 80% of the pre-operative diagnosis were confirmed in the potentially confirmable group.[16] Miller studied 246 hysterectomy specimens and found that clinical diagnosis were confirmed in 50% cases.[17]

On histopathology leiomyoma was the commonest pathology as seen in other studies. Its incidence is 25.8% in Saudi Arab, 78% in USA, 48% in Nigeria and 8% in Sweden.[6,18,19,20] Geographical and racial influences are thus apparent on the prevalence of uterine leiomyoma. Adenomyosis is the next common uterine pathology as seen in other studies.[6] Its incidence in Indian study is 26%, in Italy 24.9% and in West Indies 6%. Incidence of adenomyosis rises with rising parity which supports the theory of implantation of the basal endometrium deep in the myometrium.

CONCLUSION

Hysterectomy still remains the widely used treatment modality even in developed countries. The ultimate diagnosis is only on histology, so every hysterectomy specimen should be subjected to histopathological examination. Histopathological analysis correlates well with the pre-operative clinical diagnosis for hysterectomy. Benign pathologies are more common than their malignant counterparts and that the most common pathology identified in hysterectomy specimens is leiomyoma. The clinical and pathological correlation is 100% in cases of leiomyoma, adenomyosis and endometrial polyps. Histopathology is thus mandatory for confirming diagnosis and thus ensuring optimal management, in particular of malignant disease.

References

1. Graves, EJ. National Center for Health Statistics, National Hospital discharge survey: annual summary, 1990. Viral Health stat (13). 1992, No.112. DHHS Publication PHS 92-1773.
2. Bren, Linda. Alternative to hysterectomy: new technologies, more options. FDA Consumer. Rockville: 2001; Vol.35, 6; 23.
3. John A, Rock MD, Jhon D, Thompson MD; Telinds's Operative Gynaecology. 1st Edition Lippincott- Raven place.
4. Nausheen F, Iqbal J, Bhatti FA, Khan AT, Sheikh S. Hysterectomy: The patient's perspective. Annals Gynecol 2004; 10:339-41.
5. Gupta S, Manyonda I. Hysterectomy for benign gyaecological diseases. Current Obstet Gynaecol 2006;16:147- 53.
6. Sobande AA, Eskander M, Archibong EI, Damole IO. Elective hysterectomy: A clinicopathological review from Abha catchment area of Saudi Arabia. West Afr J Med 2005;24:31-5.
7. Gimbel H, Ottesen B, Tabor A. Danish gynecologists' opinion about hysterectomy on benign indication : results of a survey . Acta Obstet Gynecol Scand 2002;81:1123-31.
8. Clayton RD. Hysterectomy. Best practice & Research. Clinical Obstet Gynecol 2006;20:73-87
9. Kovac Sr. Hysterectomy outcomes in patients with similar indications. Obstet Gynecol.2002; 95: 787-93.
10. Chryssipolous A, Loghi SC. Indications and results of total hysterectomy. Int Surg 1986; 71(3): 188-94.
11. Thompson JD. Hysterectomy. In: Thompson JD, Rock JA, eds. Te Linde's Operative Gynecology. 7th edition.JB Lippincott Company, Philadelphia, 1992. 663-738.
12. Jha R, Pant AD, Jha A, Adhikari RC, Syami G. Histopathological analysis of hysterectomy specimens. J Nepal Med Assoc 2006 Jul-Sep;45(163):283-290.
13. Shergill SK, Shergill HK, Gupta M, Kaur S. Clinicopathological study of hysterectomies. J Indian Med Assoc 2002;100(4):238-239,246.
14. Pokras R, Hufnagel VG. Hysterectomy in the United States, 1965 – 1984. AJPH 1988;78:852.
15. Clarke A, Black N, Rowe P, Mott S, Howle K. Indications for and outcome of total abdominal hysterectomy for benign disease: a prospective cohort study. Br J Obstet Gynaecol 1995;102:611-620.
16. Lee NC, Dicker RC, Rubin G, Oray HW. Confirmation of the pre-operative diagnosis for hysterectomy. Am J Obstet Gynecol 1984;150(3):283-287.
17. Miller NF. Hysterectomy: therapeutic necessity or surgical racket? Am J Obstet Gynecol 1946;51:804.
18. Baird DD, Dunson DB, Hill MC, CousinsD, Schectman JM. High cumulative incidence of uterine leiomyoma in black and white women: Ultrasound evidence. Am J Obstet Gynecol 2003;188:100-7.
19. Adelusola KA, Ogunniyi SO. Hysterectomies in Nigerians; histopathological analysis of cases seen in Ile-Ife. Niger Postgrad Med J 2001;8:37-40.
20. Borgfeldt C, Andolf E. Transvaginal ultrasonographic findings in the uterus and the endometrium: Low prevalence of leiomyoma in a random sample of women age 25-40. Acta Obstet Gynecol Scand 2000;79:202-7.

Author Information

Geetanjali Gupta
Department of Pathology, Mahatma Gandhi Medical College and Research Institute

Dhananjay S. Kotasthane
Department of Pathology, Mahatma Gandhi Medical College and Research Institute

Vaishali D. Kotasthane
Department of Pathology, Mahatma Gandhi Medical College and Research Institute