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Research Article

Clinicohistopathological correlation of hysterectomy in rural India: an observational study

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ABSTRACT

Background: Hysterectomy - abdominal or vaginal or laparoscopic assisted, hysterectomy is the most commonly performed elective major gynaecological surgery. Rate of hysterectomy has varied between 6.1 and 8.6/1000 women of all ages. The abdominal removal of the uterus is called 'total abdominal hysterectomy' while the removal of the uterus by the vaginal route is termed as 'vaginal hysterectomy'. The supracervical removal of the uterus is termed as 'subtotal hysterectomy'. As compared to a higher frequency of hysterectomy (10-20%) in other countries, a lower rate (4-6%) has been reported in India.

Methods: The study was conducted in the department of obstetrics and gynaecology National Institute of Medical Sciences (NIMS), Jaipur in 2013-2014. 100 patients were undergoing hysterectomy. The patients were diagnosed on the basis of history, clinical examination and ultrasonography report.

Results: In our study, maximum number of clinical diagnosis made, were of DUB (with PID and Prolapse) which was 35%. This was followed by leiomyoma i.e. 29%, clinically 29 cases were diagnosed of which 24 were histopathologically proven. Adenomyosis (10%), clinically 10 cases were identified but there were 15 cases histopathologically, this can be due to different clinical presentation. Clinically diagnosed cases of carcinoma endometrium and cervical erosions were 1% and 2% respectively. Overall sensitivity for clinical diagnosis in our study was 52%. The most common histopathological finding was leiomyoma (24%), followed by adenomyosis (15%) and chronic cervicitis (15%). Other pathologies include combined adenomyosis and leiomyoma (6%), benign ovarian cyst in four cases. Normal histopathological report was obtained in 32 cases. Maximum correlation (100%) was found with cancer cervix, cancer ovary and cancer endometrium.

Conclusions: Hysterectomy still remains the widely used modality in developing as well as developed countries. Every hysterectomy specimen should be subjected to histopathological examination to ensure diagnosis and thus management in particular of malignant diseases.

Keywords: Total abdominal hysterectomy, Subtotal hysterectomy, Laparoscopic assisted hysterectomy, Leiomyoma, Adenomyosis

INTRODUCTION

Women believe that the uterus and menstruation are the core of their femininity and sexual life.¹ Fibroids cause symptoms in approximately one out of every four women of reproductive age presents with menstrual irregularity,

abdominal pain and menorrhagia. Usually detected in women in their thirties and forties and are more common in black women than white women. Adenomyosis typically affects women of reproductive age. Estimates of the prevalence of adenomyosis vary widely from 5% to 70%, which is probably related to inconsistencies in the histopathologic criteria for diagnosis. On the contrary,

leiomyomas have a high prevalence up to 70% in Caucasians and 80% in women of African ancestry. They also have a wide spectrum of size and location (subendometrial, intramural, subserosal or a combination of these). Furthermore, they have widely varying rates of growth even in a single individual adenomyosis is a poorly understood condition which has been called 'elusive' or 'enigmatic' because of the difficulty in diagnosis, the lack of agreement on definition, and also because of the vague and ill-defined pattern of symptoms which may accompany it.² Abnormal uterine bleeding is a common but complicated clinical presentation. It includes bleeding due to pregnancy, iatrogenic causes, systemic conditions, genital tract pathology as well as dysfunctional uterine bleeding. Normal menstruation is defined as bleeding from secretory endometrium associated with ovulatory cycles, not exceeding a length of five days. Any bleeding not fulfilling these criteria is referred to as abnormal uterine bleeding.³ Polyps can be of uterine and cervical type. Presents with intermenstrual bleeding, menstrual irregularity, post coital bleeding, may be associated with malignancy. We want to stress on fact that uterus should not be considered for child bearing purposes only, as after hysterectomy females suffer from various psychosexual dysfunctions

Aims and objectives: To evaluate clinical spectrum of hysterectomies, identify and study the pattern of most common uterine pathologies and their association with age and parity and to correlate the clinical diagnosis with histopathological diagnosis.

METHODS

The study was done in NIMS medical college Jaipur, Rajasthan. Inclusion criteria were all patients undergoing hysterectomy for various clinical reasons and those not benefitted by conservative or medical management, in whom surgery was not a contraindication. The only exclusion criteria were obstetric hysterectomy.

Patients Age, Parity, clinical presentation was taken on account for establishing clinical diagnosis. Clinical diagnosis of patients confirmed with ultrasonographic findings and operative finding, and correlated with histopathology reporting

The clinical findings of all the patients were confirmed with ultrasonography and per operative findings. Finally after operation, specimens were sent for histopathological examination and reports were analysed and the clinical diagnosis were correlated with histopathological findings in the tabulated form.

Histopathology is the gold standard for diagnosis of pathology in hysterectomy specimen. So histopathology and clinical diagnosis were then correlated.

Statistical analysis

Continuous variables were summarized as mean and standard deviation, whereas nominal /categorical variables as proportions.

Diagnostic accuracies were found out by calculating sensitivity, specificity, Positive Predictive Value (PPV) and Negative Predictive Value (NPV).

Comparison of nominal/categorical data and various components of diagnostic accuracies were made by 'Z' test for difference of two proportions. $P < 0.05$ was taken as statistically significant.

Medcalc 14.0.0 version software was used for statistical calculations.

RESULTS

The present study was an observational study done in NIMS medical college and hospital Jaipur, Rajasthan.

Table 1: Distribution of patients according to age.

Age	No. (%)
≤40	26
41-50	67
51-60	5
>60	2
Total	100

Total of 100 patients underwent hysterectomy for various clinical reasons. Out of 100 patients the maximum were of age group 41-50 years which was 67%. This was followed by less than 40 years age group i.e. 26%.

Table 2: Distribution of patients according to parity.

Parity	No. (%)
P1-P3	24
P4-P6	65
>P6	11
Total	100

The above Table 2 shows that maximum patients i.e. 65% were from parity group 4-6, which was followed by parity group 1-3 i.e. 24%.

Out of 100 hysterectomy patients, the most common presenting complaint was menorrhagia i.e. 37%, which was followed by polymenorrhoea i.e. 31%. Irregular bleeding and dysmenorrhoea were 26% and 24% respectively. The least common complaints were post-menopausal and postcoital bleeding i.e. 2% and 1% respectively (Table 3).

Table 3: Distribution of patients according to presenting complaints.

Presenting complaint (N=100)	No. (%)
Menorrhagia	37
Polymeorrhoea	31
Irregular bleeding	26
Dysmenorrhoea	24
Prolapse	19
Pain in abdomen	17
White Discharge	13
Post-menopausal bleeding	2
Post-coital bleeding	1

Table 4: Distribution of cases according to Gross (main) clinical diagnosis.

Gross clinical diagnosis	No. (%)
Adenomyosis	10
Prolapse	18
Leiomyoma	29
DUB	23
DUB+PID	12
Ov cyst	5
Ca Endo	1
Cervical erosion	2
Total	100

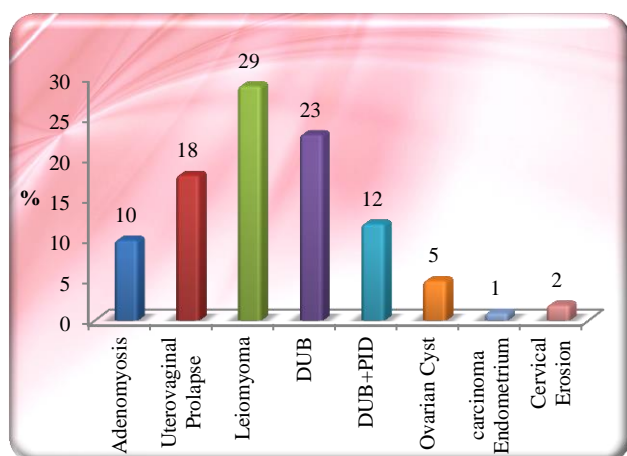


Figure 1: Gross clinical diagnosis.

The above Table 4 shows that the maximum number of clinical diagnosis made were of DUB (with PID) which was 35%. This was followed by leiomyoma i.e. 29%. Clinically diagnosed cases of carcinoma endometrium and cervical erosions were 1% and 2% respectively.

The below Table 5 shows histopathology diagnosis, in which maximum cases of leiomyoma were detected i.e. 24%. Histopathology showed no abnormality in 32% cases followed by carcinoma ovary, carcinoma endometrium, carcinoma cervix and CIN as 1% each.

Table 5: Distribution of cases according to gross histopathology report.

Gross HPR	No. (%)
Adenomyosis	15
Leiomyoma	24
Leiomyoma + adenomyosis	6
Benign ovarian cyst	4
Carcinoma cervix	1
Carcinoma endometrium	1
Carcinoma ovary	1
Chronic cervicitis	15
CIN	1
Normal	32
Total	100

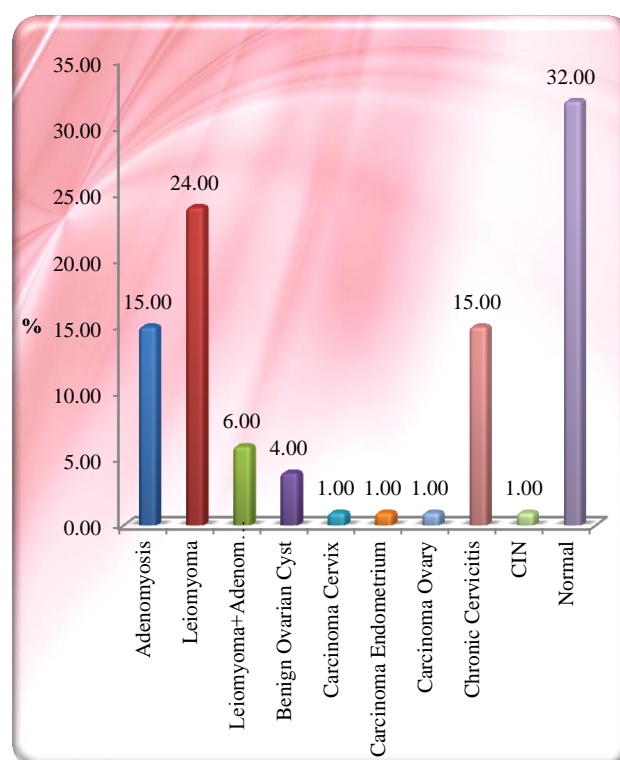


Figure 2: Gross histopathology diagnosis.

Table 6: Distribution of patients according to type of hysterectomy.

Type	No. (%)
TAH	31
TAH+BSO	49
VH	18
Wertheim	2
Total	100

The above Table 6 shows that the most common type of operation for hysterectomy was TAH+BSO (total abdominal hysterectomy with salpingo-oophorectomy) which was 49%, followed by TAH (total abdominal

hysterectomy) i.e. 31%. Vaginal hysterectomy was performed in 18% cases and Wertheim's in 2% cases.

Out of 100 hysterectomies performed, the most common complication, immediate post-operative was fever i.e. 5%. Maximum patients i.e. 91%, post operatively showed no immediate complications (Table 7).

Table 8 shows that sensitivity of carcinoma cervix, carcinoma endometrium, carcinoma ovary, benign ovarian cyst & CIN was 100%. The specificity of chronic cervicitis was 98.82% and of leiomyoma was 92.10%.

Table 7: Distribution of cases according to immediate post op complications.

Immediate post op complication	No. (%)
Fever	5
UTI	3
Wound dehiscence	1
No complication	91
Total	100

Table 8: Sensitivity, specificity, positive predictive value and negative predictive value of clinical diagnosis with histopathological diagnosis.

	Adeno	Benign Ov cyst	Ca cer	Ca endo	Ca ovary	Chr cer	CIN	Leiomyoma	Leiomyoma + Adeno	Normal	Total
Sensitivity	10/15	4/4	1/1	1/1	1/1	11/15	1/1	23/24	NA	NA	52/100
	66.67	100.00	100.00	100.00	100.00	73.33	100.00	95.83			52.00
Specificity	85/85	96/96	99/99	99/99	99/99	84/85	99/99	70/76	NA	NA	731/738
	100.00	100.00	100.00	100.00	100.00	98.82	100.00	92.10			99.05
PPV	10/10	4/4	1/1	1/1	1/1	11/12	1/1	23/29	NA	NA	52/59
	100.00	100.00	100.00	100.00	100.00	91.67	100.00	79.31			88.13
NPV	85/90	96/96	99/99	99/99	99/99	84/88	99/99	70/71	NA	NA	731/741
	94.44	100.00	100.00	100.00	100.00	95.45	100.00	98.59			98.65

DISCUSSION

Out of 100 Hysterectomy cases, most of the cases (67%) were of the age group 41-50 years. Mean age was 44.6 ± 5.99 which was followed by age group less than 40 years (26%). This was comparable with the result of Zill E. Huma⁴ where total of 588 hysterectomies was performed in the year 2011. Mean age of patients was 45 years (range 35-65 years). Majority of cases i.e. 65% were from parity group 4-6, which was followed by parity group 1-3. In the study done by Perveen S, Tayyab S the mean parity was 4-6. This difference can be explained by the lower use of contraception in our country.⁵

The maximum number of clinical diagnosis made were of DUB (with PID and Prolapse) which was 35. This was followed by leiomyoma i.e. 29 cases. Clinically diagnosed cases of carcinoma endometrium and cervical erosions were 1 and 2 cases respectively. 10 cases were of adenomyosis and 18 cases were of prolapse, consistent with Neena Y et al.⁶ Layla S. Abdullah,⁷ concluded that the most common lesion was leiomyoma (34%). The clinico-pathological correlation was 100% in all cases of leiomyoma, adenomyosis and endometrial polyps. Mahmoud Khaniki et al. concluded that AUB was the chief complaint among women who underwent hysterectomy (62.2%), followed by abdominal mass (14.7%), abdominal/ pelvic pain (13.3%) and uterine prolapse (7.4%).⁸

In our study, 100% sensitivity were for benign ovarian cyst, carcinoma endometrium, cervix ovary and CIN. Leiomyoma had 95.83%, out of 24 leiomyoma diagnosed by histopathology 23 were diagnosed clinically. The overall specificity for clinical diagnosis was 99.05%. Except chronic cervicitis (98.82%) and leiomyoma (92.10%) all other pathologies diagnosed clinically were 100% specific for histopathological report.

The overall positive predictive value of clinical diagnosis with histopathology diagnosis was 88.13%. Except chronic cervicitis (91.67%) and leiomyoma (79.31%) rest had 100 % positive predictive value which means, chronic cervicitis detected histopathologically on 12 cases proved 11 cases to be clinically diagnosed. Out of 29 cases histopathologically proven 23 were clinically diagnosed. Negative predictive value overall was 98.65%.

CONCLUSION

1. Hysterectomy still remains the widely used modality in developing as well as developed countries.
2. Every hysterectomy specimen should be subjected to histopathological examination to ensure diagnosis and thus management in particular of malignant diseases.

Recommendations

1. Histopathological examination of each hysterectomy specimen should be mandatory.
2. There should be a periodic audit to collect data and analyse the pattern of indication and type of histopathological lesion.

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Conflict of interest: None declared

Ethical approval: The study was approved by the institutional ethics committee

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