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A retrospective study of correlation of clinical diagnosis and ultrasonographical findings with histopathological diagnosis of patients underwent hysterectomies for various indications

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***Abstract*---**Introduction: Hysterectomy is a major gynaecological procedure for the removal of the uterus with or without adnexal structures.Hence the aim of the study was to find out the efficacy of clinical and USG findings in diagnosing gynecological disorders, by correlating it with histopathological examination of specimens; so that check out validity of indicated cases are taken up for hysterectomy. Materials & Methods: The retrospective study analysis of the hysterectomy cases was performed. The hysterectomy performed for various indications over a period of one year were enrolled in the study. The patient's age, parity, clinical presentation, examination findings, clinical & ultrasonography findings and mode of surgeries were noted. The clinical and radiological findings of all patients were correlated with per operative findings. After surgery, all specimens of hysterectomies sent for histopathological examination in pathology department. Results: Total of 400 patients was included in the study with age range from 35 to 75 years. The major chief complain of patients undergoing hysterectomies was menorrhagia in around

66.5% of study population. The most common findings on ultrasonography were found was fibroid uterus present in around 43.5% of the patients.Clinical, ultrasonographicaland also per operative diagnosis can be differ from histopathological diagnosis; so histopathological diagnosis is always confirmatory at all. Conclusion: USG is an important, simple and easily accessible investigation to evaluate various causes of Abnormal uterine bleeding. Clinical examination is not adequate to distinguish between fibroid and adenomyosis. Histopathological evaluation of hysterectomy specimens should be done in all cases of this major surgical procedure not only in tertiary care hospital but in all medical centres so that the proper.

***Keywords*---**adenomyosis, AUB, hysterectomy, fibroid uterus, histopathology.

Introduction

AUB (abnormal uterine bleeding) is the very common clinical condition seen in gynecological OPD in the pre and post-menopausal age group. The causes of AUB could be polyps, leiomyomas, endometrial hyperplasia, DUB, adenomyosisand cervical- endometrial carcinoma. Postmenopausal bleeding is most common presenting symptom in endometrial carcinoma.[1] All perimenopausal women with persistent abnormal uterine bleeding should be evaluated by clinical examination, ultrasound and biopsy. Those who do not respond to medical management are subject to hysterectomy if needed. The route of hysterectomy is determined by skill, experience and preference of operating gynecologist; also size of uterus, abnormalities of adenexa and degree of uterine prolapse.[2, 3] Hysterectomy is a major gynecological procedure for the removal of the uterus with or without adnexal structures. In most of the cases, a total hysterectomy with removal of uterine corpus and cervix is done. It is the second most common major surgical procedure performed by the gynaecologists all over the world next to Caesarean Section.[4]Hysterectomy is an effective treatment for wide range of gynecological diseases, both benign and malignant. But there must be correlation for the appropriate indication of surgery and its histopathological examination findings. Histopathological analysis is mandatory for define diagnosis and further management.[5]

Importance of histopathological examination is seen, especially in patients with genital cancer, where the adjuvant treatment is dependent upon grade and extent of the invasion of the disease. The diagnosis of adenomyosis is established by histopathological examination.[6]Some of the patients may be suspected of having a malignancy in preoperative assessment like those with postmenopausal bleeding. Histopathological examination may aid in ruling out suspicion also.[7] Histopathological examination of hysterectomy specimens, irrespective of clinical diagnosis is essential to study the associations between multiple lesions in female genital tract, to identify newer etiologies for the diseases and to study the effects of hormones in various parts of the female genital tract with its potential consequences. Abnormal uterine bleeding is one of the most important indications for hysterectomy.[8] It has been observed in certain areas that between

21.4% and 44.7% of the submitted samples from hysterectomy reveal no pathology after histological evaluation and for some conditions the indication will not be justified and not worth the risk. Hence the aim of the study was to find out the efficacy of clinical and USG findings in diagnosing gynecological disorders so that only valid indicated cases are taken up for hysterectomy.

Materials and Method

The present study is the retrospective observational study. The study was planned in the department of the gynecology, in the medical college and associated hospital. The ethical clearance certificate was obtained from ethical committee of the hospital institute. All participants fulfilling inclusion criteria and undergone hysterectomy during the study period of one year included in study.

Inclusion criteria

Patients with age 35-75 years and undergone hysterectomy for benign gynecological conditions after failed medical treatment like

- Uterine leiomyoma or fibroid with menorrhagia or with intermenstrual bleeding
- Dysfunctional uterine bleedings with no identifiable pathological cause, but unacceptable menstrual blood loss for the patient
- Pelvic inflammatory disease with pelvic pain and severe dysmenorrhoea
- Moderate and severe endometriosis/ chochlate cyst/ pelvic pain
- Benign ovarian tumors

Exclusion criteria

Following cases were excluded from study:

- Patients with confirm diagnosis of malignancy
- Patients who had an emergency hysterectomy for paripartumhemorrhage

The retrospective study analysis of the hysterectomy cases was performed by department of obstetrics and gynecology, Medical College and Research center. The hysterectomy performed for various indications over a period of one year were enrolled in the study. The patient's age, parity, clinical presentation, examination findings, clinical & ultrasonography findings and mode of surgeries were noted. The clinical and radiological findings of all patients were correlated with per operative findings. The specimens were sent for histopathological examination. The surgical specimens were fixed in 10% formalin, they were paraffin embedded and blocks were sectioned and stained with routine hematoxylin and eosin stain. Reports were analyzed and correlated with clinical & radiological diagnosis, per operative findings and histopathological findings. Patient's confidentiality was respected and vital information of patient will never be disclosed. Histopathological confirmation is mandatory for ensuring correct diagnosis and thus management varies with malignant disease. Clinical data was recorded retrospectively. Microscopy was performed and hi stopathological details were recorded, analysed and compared with the clinical data.

Results

The present study was done for find out efficacy of clinical and USG findings in diagnosing gynaecological disordersby correlating it with histopathological examination of specimens; so that check out validity of indicated cases are taken up for hysterectomy. Total of 400 patients were included in the study with age range from 35 to 75 years. Maximum number of patients were in age range of 45 – 55 years, least number of patients were in age range of 65 to 75 years.

Table 1
Age distribution of the patients underwent hysterectomies

Age	Numbers	Percentage
35-45	134	34.5
45-55	194	48.5
55-65	53	13.25
65-75	15	3.75
Total	400	100

The major chief complains of patients undergoing hysterectomies was menorrhagia in around 67 % of study population. Other complain included dysmenorrhea,abdominal pain, post-menopausal bleeding, per vaginal discharge, something coming out per vaginum and swelling, fullness or mass in abdomen.

Table 2
Symptoms of the patients underwent hysterectomies

Symptoms of the patients	Numbers	Percentage
Menorrhagia with or without abdominal pain/ dysmeorrhea	266	66.5
Postmenopausal bleeding	11	2.75
Abdominal pain only	10	2.5
Something coming out per vaginum	54	13.5
Dysmenorrhea only	22	5.5
Swelling, fullness or mass in abdomen	22	5.5
Per vaginal discharge	10	2.5
Others	5	1.25
Total	400	100

Table 3
Clinical, ultrasonographical diagnosis of patients underwent hysterectomies

Clinical, ultrasonographical diagnosis of patients underwent hysterectomies	Numbers	Percentage
Fibroid uterus	174	43.5
Adnexal mass other than endometrioma	17	4.25
Adenomysis of uterus	63	15.75
Pelvic inflammatory diseases	10	2.5
DUB with normal USG findings	24	6

DUB with endometrial hyperplasia on USG findings	37	9.25
Endometriosis of ovaries	16	4
Uterine prolapse	54	13.5
Others	5	1.25
Total	400	100

All the patients underwent the process of clinical examination and ultrasonography prior to hysterectomy. The most common findings were found is fibroid uterus that was present in around 43.5% of the patients. Adenomyosis, second most common finding of diagnosis; in 15.75% of the patients; the signs observed in such patients were heterogeneousmyometrium area, myometrium junction, enlarged uterus. DUB was observed in 15.25% of cases. Uterine prolapse was observed in 13.5% of the patients. Endometriosis of ovaries and Pelvic inflammatory disease were observed in 4% and 2.5 % of cases. Adnexal mass, other than endometrioma was observed in 4.25% of the patients. Normal report of the ultrasonography was observed in around 19.5% of patients. Others category includes cases of primary amenorrhea, mulleriandysgenesis and mentally retarded patients.

Table 4
Modes and typesof Hysterectomy surgeries in study

Mode and type of Hysterectomy	Numbers	percentage
Total abdominal hysterectomy without unilateral or bilateral salpingoopherectomy	49	12.25
Total abdominal hysterectomy with unilateral salpingoopherectomy	07	1.75
Total abdominal hysterectomy with bilateral salpingoopherectomy	104	26
Non decent vaginal hysterectomy without anterior and posterior colpoperineorraphy	137	34.25
Vaginal hysterectomy with anterior and posterior colpoperineorraphy	54	13.5
Vaginal hysterectomy with posterior colpoperinioraphy	12	3
Total laparoscopic hysterectomy	27	6.75
Laparoscopic assisted vaginal hysterectomies	9	2.25
total	400	100

Above table is described various mode, types and routes of hysterectomies. Vaginal route of the hysterectomies were most common in our study due to better compliance, less post operative complications and better outcomes.

Table 5
Per-operative and post-operative complications of hysterectomies

complications	Numbers	percentage
fever	15	3.75
Urinary tract infections	9	2.25
Bowel injury	2	0.50

Bladder injury	1	0.25
Ureteric injury	1	0.25
hemoperitonium	1	0.25
Significant Vault hematoma	1	0.25
Rectal sheath hemetoma	1	0.25
Abdominal wound infections	19	4.75
Brust abdomen	1	0.25
Vault infection	11	2.75
Fistulas(rectovaginal, vasicovaginal, ureterovaginal)	1-vasicovaginal	0.25

Table 6
Histopathological diagnosis of hysterectomy specimens

Histopathological diagnosis	numbers	percentage
Fibroid	137	34.25
Adenomyosis	71	17.75
Atrophic endometrium	22	5.5
Endometrial hyperplasia, irregular endometrium	45	11.25
Combined leiomyoma &adenomyosis	35	8.75
Proliferative/ secretory endometrium	31	7.75
Ovarian cyst/ tumor other than endometriosis of ovary	19	4.75
Endometriosis	14	3.5
Endometrial hyperplasia and adenomyosis	12	4
Endometrial polyp	5	1.25
Endometrial carcinoma	3	0.75
Other malignancy	2	0.50
Cervical intraepithelial neoplasm(CIN)	1	0.25
Total	400	100

Total of 400 specimens were sent for histopathological examination and report. The most common diagnosis that was reported was leiomyoma that was found in 43% of the patients. The adenomyosis was reported in 26.5% of the patients. Normal endometrium deteted in 7.75%cases. Atrophic endometrium found in 5.5% cases. Genital tract malignancy found in 1.5% cases histopathologicaly. Maximum numbers of the histopathological reports,about 80%, were in correlation with the clinical diagnosis. Correlation for adenomyosis was 100%. Correlation for DUB was poor, because 14 cases of DUB show fibroid uterus findings per operatively and final diagnosis is leiomyoma with adenomyosis.50 cases of clinical and per operative diagnosed fibroid uterus were shown histopathological findings of adenomyosis, DUB, leiomyoma with adenomyosis, adenomyosis with endometrial polyp. 3 cases of ultrasonographicaly diagnosed endometrial hyperplasia were shown endometrial carcinoma on histopathological diagnosis. 2 case of benign ovarian tumours and 1 case of PID with chronic cervicitis show malignant ovarian carcinoma and cervical carcinoma insitu respectively on histopathological diagnosis.

Table 7
Distribution of cases with different histopathological diagnosis (n=64)

Clinical diagnosis	Number	Peroperative diagnosis	Histopathological diagnosis	Final diagnosis
Fibroid uterus	16	Fibroid uterus	Endometrium-secretory phase Myometrium-Adenomyosis Cervix- Chronic cervicitis	Adenomyosis
Fibroid uterus	8	Fibroid uterus	Endometrium-proliferative phase Myometrium-unremarkable Cervix- healthy	DUB
Fibroid uterus	21	Fibroid uterus	Endometrium- secretory phase Myometrium- multiple small myoma and adenomyosis Cervix- healthy	Leiomyoma and Adenomyosis
Fibroid uterus	5	Fibroid uterus	Endometrium-proliferative phase, single endometrial polyp Myometrium-Adenomyosis Cervix- chronic cervicitis	Adenomyosis and Endometrial polyp
DUB	14	Fibroid uterus	Endometrium- secretory phase Myometrium- multiple small myoma and adenomyosis Cervix- Chronic cervicitis	Leiomyoma and Adenomyosis

Discussion

Hysterectomy is one of the most commonly performed surgeries in the world usually done for the management of fibroid, Abnormal uterine bleeding, adenomyosis, prolapse and neoplastic lesions of the female genital tract. Charles Clay performed the first subtotal hysterectomy in 1843 and the first total hysterectomy was done in 1929 in England.[9-11] The indications to perform this major surgery should always be justified and the pathology should be proved histopathologically. This is so because the hysterectomy is a major surgery which has its own physical, economic, emotional, sexual and medical significance to the women. Histopathological analysis and review is mandatory to evaluate the appropriateness of the hysterectomy.[12, 13] In this study, 400 hysterectomies were

done. The age of the patient studied in this present study ranged from 35 to 75 years, the mean age being 48.2 years. The age was higher when compared to the previous similar studies in which mean age was 45 years, by T. Ramachandran and 44.5 years by Karthikeyan et al. The likely explanation for this age variation is due to the higher incidence of prolapse and late presentation to the hospital for the concerned illness in the rural population studied.[14]

menorrrahgia and something coming out per vaginum were the two main complaints seen in our study each presenting 66.5% and 13.25% respectively. Abnormal menstrual flow, as the single most common symptom, in patients undergoing abdominal hysterectomy is stated in various studies. Saleh SS et al[15] found around 40% of patients having heavy menstrual flow. Some studies found per vaginal discharge as the second most common presenting symptom. In our study per vaginal discharge was present in only 2.5% of the cases. This may be due to patients' unawareness, social stigma and less priority given to vaginal discharge as compared to other major symptoms hampering their daily activities. The most common preoperative diagnosis was fibroid (43.5%) and thus is the commonest indication of hysterectomy in this study set up. Among them 91.75% showed correlation with histopathological examination. However in case of adenomyosis, there was 100% correlation with histopathological examination.

Conclusion

USG is an important, simple and easily accessible investigation to evaluate various causes of abnormal uterine bleeding. Clinical examination is not adequate to distinguish between fibroid and adenomyosis.Clinical, ultrasonographical and also per operative diagnosis can be differ from histopathological diagnosis; so histopathological diagnosis is always confirmatory at all.Histopathological evaluation of hysterectomy specimens should be done in all cases of this major surgical procedure not only in tertiary care hospital but in all medical centers so that the proper. The risk of complications can be minimized with careful evaluation of a patient before surgery.

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