International Journal of Science and Research (IJSR)
ISSN (Online): 2319-7064
Index Copernicus Value (2013): 6.14 | Impact Factor (2013): 4.438

Clinico- Pathological Correlation of Abdominal Hysterectomy Specimens

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Abstract: ***Objective: To study the most common pathological abnormalities identified in abdominal hysterectomy specimens and to correlate the findings with the clinical indications. Material and Methods: A retrospective study of total 141 abdominal hysterectomy specimens received between March 2014 and February 2015 in the department of Pathology, Shridevi Institute of Medical Sciences & Research Hospital was carried out. Histopathological diagnoses of the hysterectomy specimens were compared with their clinical indications. Results: The commonest age group for abdominal hysterectomy was between 41- 50 years. Commonest indication was dysfunctional uterine bleeding (DUB) in 58.8% cases followed by fibroid 21.9% and Chronic PID 11.3%.Other indications were endometrial polyp, ovarian mass and Placenta accreta. Ultrasonography revealed bulky uterus in majority. Out of 58.8% of clinically diagnosed DUB (83) cases, 46.5% of cases (38) had a definitive pathology of adenomyosis while 28% (23) showed Leiomyoma with cystoglandular changes. Two cases of Cervical Intraepithelial Neoplasia III were found on histopathological examination. Conclusion: The commonest indication and histological finding in our setting were DUB and Leiomyoma respectively. Histopathological findings in present study corroborates well with the preoperative clinical diagnoses and or indications of the hysterectomy procedure. Histo-pathology is mandatory for ensuring diagnosis and further management.***

Keywords: Hysterectomy, Histopathology, DUB, Leiomyoma, Adenomyosis.

1. Introduction

Uterus, being a vital female reproductive organ is subjected to many benign and malignant diseases. Although many medical and conservative surgical treatment options are available, hysterectomy still remains the most commonly performed major gynaecological procedure worldwide.[1] It is the definitive treatment for many of its indications including dysfunctional uterine bleeding, fibroids, utero-vaginal prolapse, endometriosis and adenomyosis, pelvic inflammatory disease, pelvic pain, gynaecological cancers and obstetric complications.[2] Histopathological examination of hysterectomy specimens therefore carries diagnostic and therapeutic significance. Prevalence of uterine and adnexal pathologies varies from nation to nation and from region to region within the nation.

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 of 60 years.[3] Hysterectomy still remains the widely used treatment modalities even in developed countries.[4]Around 60- 80% of hysterectomies in USA and UK are abdominal.[5,6] Charles Clay performed the 1st subtotal hysterectomy in Manchester, England in 1843 and 1st abdominal hysterectomy in 1923.[7]

Hence, a retrospective study of 141 cases of abdominal hysterectomy specimens was carried out at department of pathology of our teaching institute in order to identify the pathological changes and correlate them with their preoperative diagnoses/clinical indications.

2. Objectives

- To assess the clinical findings in women who had underwent abdominal hysterectomy.
- To study the pathological changes in abdominal hysterectomy specimens.
- To correlate the clinical indication with their histopathological findings.

3. Methodology

A retrospective study was carried out in the Department of Pathology, Shridevi Institute of Medical Sciences & Research Hospital, Tumkur on 141 abdominal Hysterectomy specimens received by the Pathology Department over a span of one year from March 2014 to February 2015. For the clinical indication of abdominal hysterectomy, the cases were reviewed for the data from Medical record section. Surgical specimens were sent along with histopathologic requisition form containing main clinical data by operation theatre to the Department of Pathology. The surgical specimens were fixed in 10% formalin. The histopathologic data included gross and microscopic findings of the surgical specimens. On receiving, the External Gross features were observed and noted. Multiple bits were taken from the representative areas of the specimens for processing. The tissue bits were processed and paraffin wax blocks were made out of them. The blocks were sectioned in a microtome and were stained with hematoxylin and eosin. An elaborate and detailed examination of the lesion was done to arrive at a definite and accurate diagnosis. In cases of multiple (>1) pathologic diagnoses, all were counted by including them individually in their assigned category. Patient's age, Clinical presentation and pre- operative clinical indication and the type of hysterectomy were

reviewed. A correlation between age, clinical findings, USG findings, type of surgical resections and histopathological examination was done.

4. Results

Table 1: Table showing age wise distribution of abdominal hystetrectomies

Age group	*No of Abdominal Hysterectomy*	*Percentage*
21-30	2	1.4%
31-40	8	5.6%
41-50	79	56%
51-60	26	18.6%
61-70	21	14.8%
71 & above	3	2%

Patients subjected for abdominal hysterectomy were grouped under various age groups. The commonest age group is 41-50 years. The age wise distribution is as follows.

Table 2: Table showing Clinical presentations of patients subjected to hysterectomy:

Clinical Presentation	Percentage
Irregular bleeding	60%
Pain abdomen	20%
Dysmenorrhagia	10%
White discharge	7%
Increased menstrual flow	3%

Majority of the patients presented with bleeding per vagina, pain abdomen, dysmenorrhagia. Most of the patients complained of increased bleeding (60%). A few presented with pain abdomen (20%). Patients with cervicitis usually presented with whitish discharge per vagina.

Table 3: Table showing USG findings in patients subjected for abdominal hysterectomy

USG findings	No. of patients	Percentage
Bulky Uterus	81	57.4%
Fibroid	31	21.9%
No abnormality	25	17.3%
Ovarian mass	4	2.8%

All these patients were subjected routinely for ultrasonography mainly abdominal and in a few, transvaginal approaches. The findings were interpreted and tabulated as follows. The commonest finding in majority of these cases is bulky uterus. It should be noted that USG showed no pelvic abnormality in 17.3% of cases. This was because USG cannot pickup small fibroids and adenomyosis. Adenomyosis is confirmed only by D & C or histopathology.

Table 4: Table showing pre operative clinical indication

Clinical indication	*No. of patients*	*Percentage*
DUB (not responding to medical treatment)	83	58.8%
Fibroid	31	21.9%
Endometrial polyp	5	3.5%
Chronic PID	16	11.3%
Ovarian mass	4	2.8%
HSIL (cytological finding)	1	0.7%
Placenta accreta with atonic PPH	1	0.7%

The clinical history was reviewed by looking at the case sheets in the Medical record section . It was statistically analyzed for various symptoms, clinical presentations. The frequency of various clinical indications is as follows. The most common indication was DUB in patients who failed to respond to medical treatment. DUB is followed by fibroid and chronic PID.

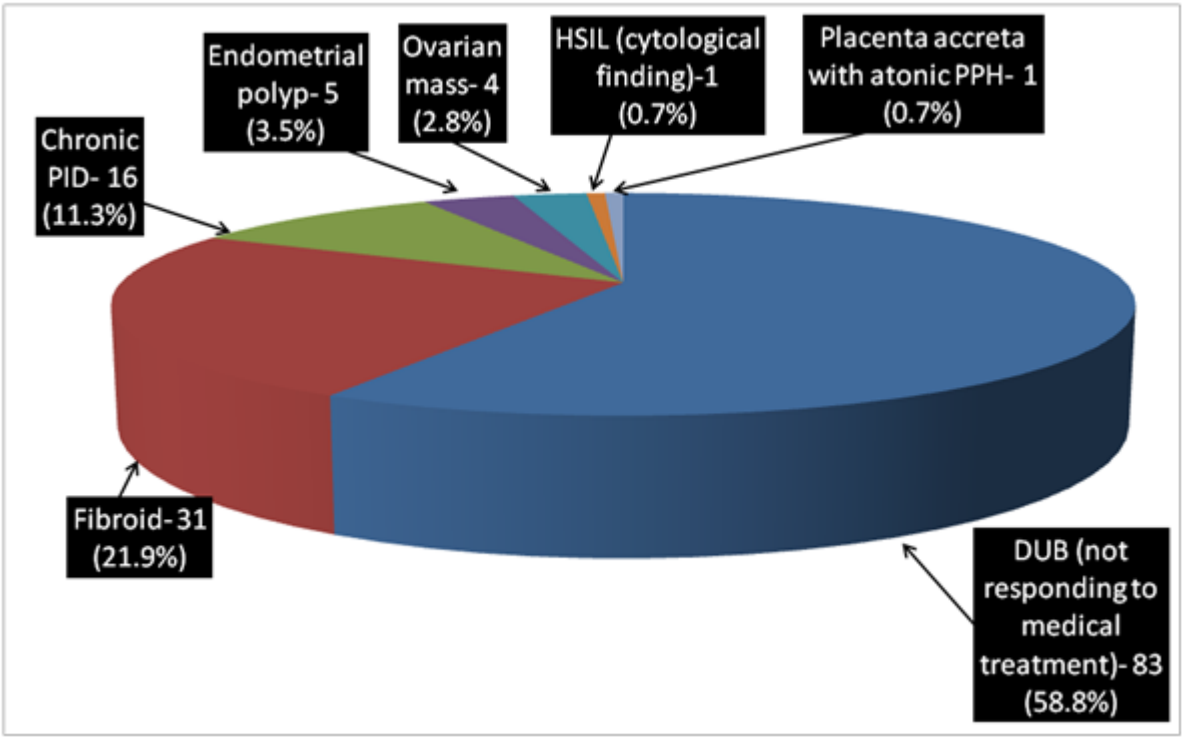


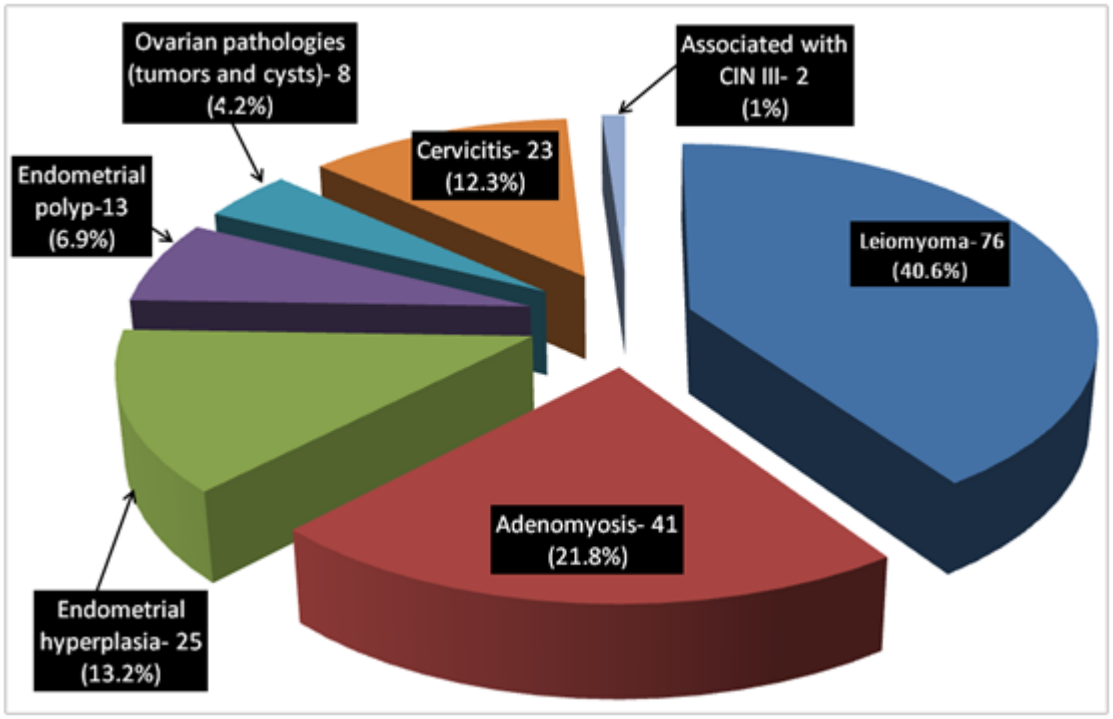
Table 5: Table showing type of abdominal hysterectomy done

Type of surgical resections	No. of patients	Percentage
Total abdominal hysterectomy	54	38.3%
Total abd hysterectomy with Bilateral salphingo – oopherectomy	82	58%
Total abd hysterectomy with Right sided salphingo – oopherectomy	1	0.7%
Total abd hysterectomy with Left sided salphingo – oopherectomy	3	2%
Sub- Total abdominal hysterectomy	1	0.7%

All these patients were operated in the Department of OBG, SIMS&RH. The type of abdominal surgery was total hysterectomy and in few with bilateral and in few unilateral salphingooopherectomy. The commonest type of resection of Uterus is TAH with BSO. Supra cervical (subtotal) hysterectomy was done for one patient who had Placenta accreta with atonic PPH as the indication.

Table 6: Table showing Histopathological findings in abdominal hystetrectomy specimens

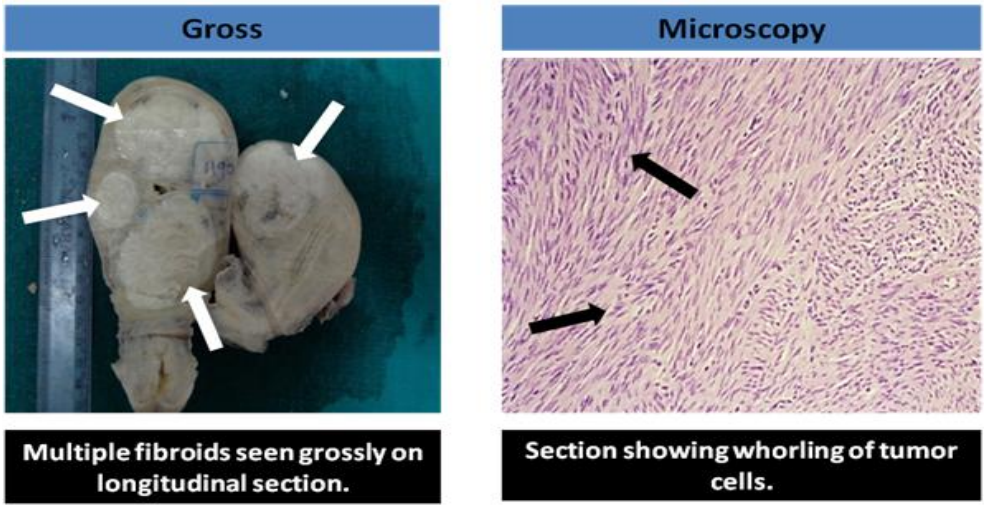
Histopathological findings	*No. of specimens*	*Percentage*
Leiomyoma	76	40.6%
Adenomyosis	41	21.8%
Endometrial hyperplasia	25	13.2%
Endometrial polyp	13	6.9%
Ovarian pathologies (tumors and cysts)	8	4.2%
Cervicitis	23	12.2%
Associated with CIN III	2	1%



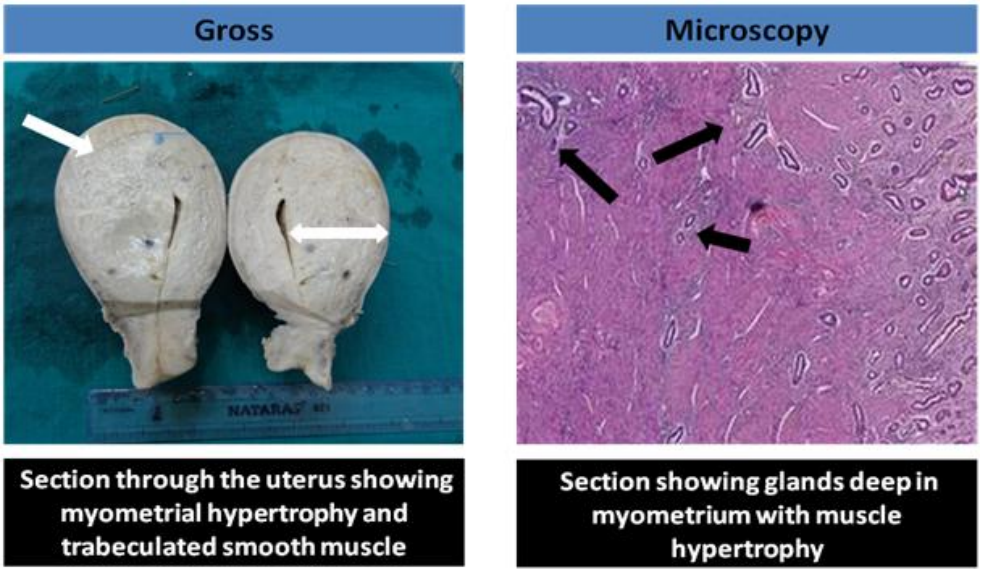
Out of 141 specimens, 47 specimens showed multiple pathologies which are included under separate categories. The most common pathology identified was leiomyoma (40.6%), followed by adenomyosis in (21.8%) and endometrial hyperplasia (disordered endometrium) (13.2%).

One case preoperatively diagnosed as DUB had Cervical Intraepithelial Neoplasia III (CIN III) on histopathological examination.

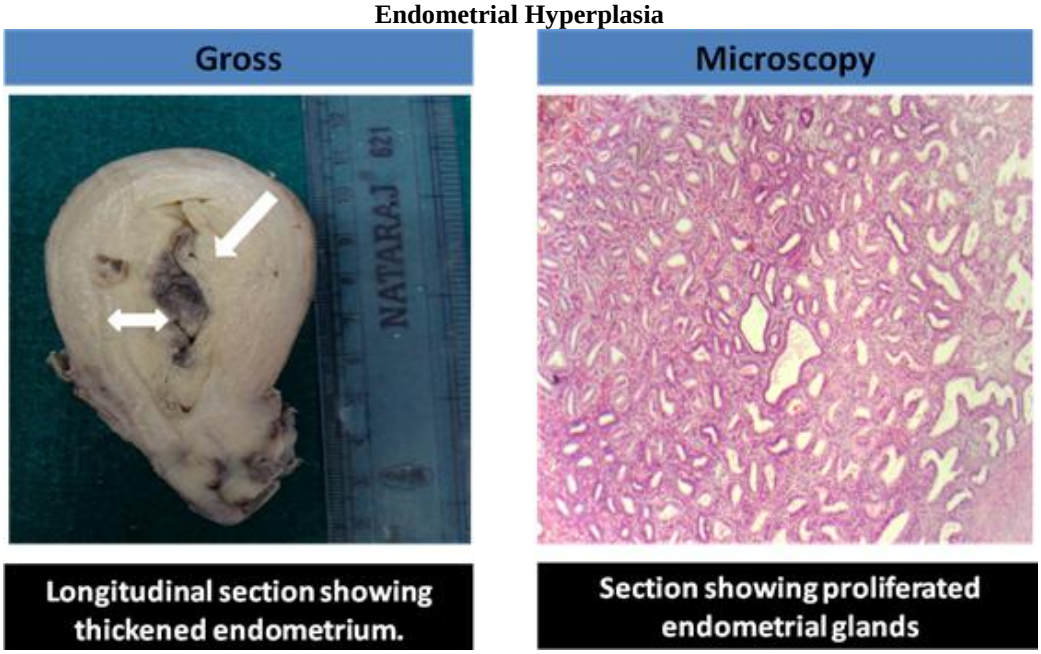
Leiomyoma



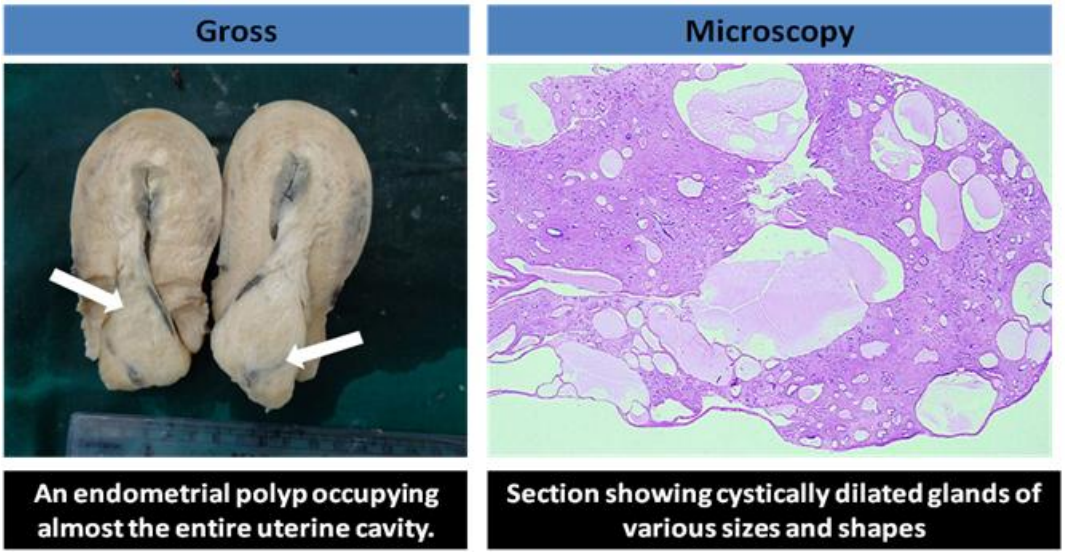
Adenomyosis



Endometrial Hyperplasia



Endometrial Polyp



Hysterectomy is one of the most common surgical procedures in peri and postmenopausal women; it is the second most common surgical procedure in USA.[5]Abdominal removal of uterus is Total Abdominal hysterectomy while removal of uterus in vaginal route is vaginal hysterectomy. Supracervical removal of uterus is termed subtotal hysterectomy.[8] This study was conducted to analyze the patterns of lesions in hysterectomy specimens in our institution and correlate the histopathological findings with the preoperative clinical diagnoses/indications. In UK & 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 gynecologist, most of the gynecologists still continue to use abdominal approach for hysterectomy.[9] This study concerned only on Abdominal Hysterctomy specimens since vaginal hysterectomy specimens usually show atrophic change which is common in a post menopausal uterus.

Histopathological examination of surgical specimens carries ethical, legal, diagnostic and therapeutic significance. A variety of conditions in gynecological practice require removal of uterus that may show no gross or microscopic pathology when examined by the pathologist. Removal of normal uterus may indicated and permitted in the treatment of ovarian, fallopian tube and vaginal cancer, pelvic inflammatory disease, endometrosis, pelvic pain and pelvic tuberculosis.[10]

The commonest age range of hysterectomy in our study (Table I) is 41-50 years (56%) followed by 51-60 years(18.6%), 61-70 years(14.8%), 31-40 years(5.6%). The mean age of hysterectomy in this study was 48.9 years. In a study in Nepal, the mean age of women undergoing hysterectomy was 46.3 years.[11]. Our study also showed that hysterectomy was done for 2 patients in their reproductive age .i.e. between 21- 30 which were done considering Placenta accrete with atonic PPH and CIN III as their indications.

Majority of the patients presented to the gynecologist with irregular bleeding(60%) between cycles. Few patients also presented with painful mensus, pain abdomen, whitish discharge and increased menstrual flow. A few had multiple complaints too. Usually, patients diagnosed as DUB presented with irregular bleeding per vagina and pelvic pain. Patients with Chronic PID presented with whitish discharge.

All the patients were subjected for ultrasonography to determine its role in pre- operative diagnosis. It was reported that majority of the patients showed bulky uterus which literally means that the uterus appears enlarged than its normal size. This also makes a gynecologist opt for an abdominal approach to remove the enlarged uterus. USG assistance was accurate in making a definitive diagnosis of Fibroid in 31(21.9%) of patients. It also leaves a big question since USG showed no abnormality in 25(17.3%) cases that were later diagnosed to have adenomyosis and leiomyoma on histopathology. This was suspected to be because of the fact that adenomyosis and small fibroids cannot picked up by USG.

Indications in almost 96% of patients were benign diseases. In our study, the commonest indication was DUB(58.8%) followed by fibroid uterus(21.9%). Other indications were Chronic PID(11.3%), Endometrial polyp (3.5%), Ovarian mass(2.8%), HSIL (cytologic finding)(0.7%) and placenta accrete with atonic PPH(0.7%). Study carried out by Clarke A has reported results similar to this study in which commonest indication was DUB(58%), followed by fibroids(23.2%).[12] Jha R found that leiomyoma was the indication in 24.9% cases, ovarian tumor in 14.9% cases and DUB in 7.7% cases.[11] Commonest indication was fibroid and DUB(26%) in study by Shergill SK.[13] Gupta G reported fibroid(34.06%) as the common indication in his study. [1]

The commonest type of surgical resection was Total Abdominal Hysterectomy with Bilateral salphingo-oopherectomy (TAH with BSO)(58%) followed by TAH (Total Abdominal Hysterectomy)(38.3%). Study by Gupta G revealed equal number of Total Abdominal Hysterectomies and Abdominal Hysterectomy with Bilateral salphingo-oopherectomy in their setup.[1]As far as our study is concerned most of the patients presented to us in their post menopausal period which does not throw a controversy in removing the ovaries along with uterus. Subtotal hysterectomy was done as an emergency cesarean hysterectomy for the patient with Placenta accrete with atonic PPH. Patients with ovarian mass underwent TAH with unilateral salphingo- oopherectomy(2.7%). Eighty-three percent of gynecologists recommend oopherectomy in postmenopausal women, 50% in perimenopausal women and <5% in premenopausal women at the time of hysterectomy.[19]

Out of 141 specimens received, 47 of them showed multiple pathologies which are counted individually in their respective categories. In our study, histopathology revealed leiomyoma(40.6%) as the commonest pathology. Adenomyosis(21.8%) was the next common pathology. Other pathologies identified were endometrial hyperplasia(13.2%), endometrial polyp(6.9%), ovarian pathologies(4.2%), cervicitis(12.2%) and Cervical Inta epithelial Neoplasia III(1%). Similar results were reported in other studies also. Leiomyoma was the commonest pathology as seen in other studies. Its incidence is 25.8% in Saudi Arabia,[14] 78% in USA,[15] 48% in Nigeria[16] and 48% in Sweden.[17] The incidence of adenomyosis[14] in Indian study is 26%, 24,9% in Italy and 6% in West Indies. Incidence of adenomyosis increases with rising parity which supports the theory of implanttion of basal endometrium deep in the myometrium.

Only a few studies have compared pre- operative clinical diagnosis with histopathological findings. We have found that majority of the pre- operative diagnosis of our cases were confirmed on histopathology. Lee NC found that out of 1238 women studied, 80% clinical diagnosis were confirmed in potentially confirmable group.[18]

5. Conclusion

The present study was a retrospective study shows various histopathological patterns of lesions in hysterectomy specimens in our institution. High confirmation rates were

found for leiomyoma, endometrial hyperplasia, and endometrial polyp, benign ovarian and cervical lesions. Out of 58.8% of clinically diagnosed DUB (83) cases, 46.5% of cases (38) had a definitive pathology of adenomyosis while 28% (23) showed Leiomyoma with cystoglandular changes. It is also notable that one case clinically diagnosed as DUB showed Cervical Intraepithelial Neoplasia III on histopathology. All hysterectomy specimens should be sent for histopathological examination regardless of the pre-operative microscopic assessment of endometrial tissue because it is mandatory for confirming diagnosis, histological behavior and for optimal management.

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