ORIGINAL RESEARCH PAPER

Volume-6 | Issue-12 | December-2017 | ISSN No 2277 - 8179 | IF : 4.176 | IC Value : 93.98

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

A STUDY ON CORRELATION OF CLINICAL AND ULTRASOUND DIAGNOSIS WITH HISTOPATHOLOGY IN CASES OF HYSTERECTOMY DONE FOR BENIGN INDICATIONS.

Gynaecology

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ABSTRACT

The main objective of our study was to know the associations between disease & type of hysterectomy, indication of abdominal hysterectomy. And HPE conformation of pre-operative clinical diagnosis and USG findings. Its a prospective, observational study conducted at Department of Obstetrics & Gynaecology, Gauhati Medical College & Hospital, Guwahati, which is a tertiary care hospital during the period June 2016 to May 2017. Study was conducted on women meeting the inclusion criteria, who were admitted for hysterectomy. Patients age, parity, clinical presentation, clinical diagnosis, USG finding and type of hysterectomy was noted. Results were analysed to find out correlation between clinical, USG, and histopathological findings.

Conclusion: Most common indication of hysterectomy for benign lesion in our study was found to be Fibroid followed by DUB and Adenomyosis. Correlation of clinical, USG and histopathological findings results were different for fibroid, DUB and Adenomyosis, which were the three common indications for hysterectomy for benign lesions.In case of Fibroid, correlation of clinical findings with USG and histopathology was significant.In case of DUB correlation of clinical findings with USG and histopathology was poor. In case of Adenomyosis, correlation of clinical findings with USG was moderate but poor with histopathology.

Why this study? This study is done to find out our efficacy in detecting uterine pathology clinical and ultrasonological examination which is later confirmed with HPE finding. Results from this study will provide the base line to hospital administration and other policy makers to design appropriate interventions and may be used as a guide in protocols and guideline development regarding hysterectomy.

KEYWORDS

INTRODUCTION: Uterus is subjected to a number of disease processes ranging from acute as well as chronic inflammatory changes, benign neoplastic and malignant conditions. Despite several available treatment options, surgical intervention and particularly hysterectomy is still the commonest gynaecological surgery performed in the world to date. Today, the number of hysterectomies conducted in India continues to outnumber surgeries performed in other countries. For instance, number of hysterectomies conducted in 2013 in India stood at 23.2 lakh, while during the same period hysterectomies reported in USA, UK and Russia were 5.9 lakh, 1.3 lakh and 3.12 lakh respectively (1).

There are various radiological investigations like plain radiography, CT scan, MRI and sonographic imaging which could be done prior to hysterectomy to assist in making diagnosis. One of easily available, non-invasive and relatively sensitive and cheap imaging technique is the use of ultrasound either Trans-abdominal ultrasound or Trans-vaginal ultrasound with different sensitivities depending on diagnosis. A study by YogeshNeena et al at Index Medical College Hospital &Research Centre Khudel lndore M.P. India, out of 288 cases, 78% could be diagnosed early by trans-abdominal sonography but in 22%, where things were not very clear, trans-vaginal sonography had to be performed. On USG, they differentiated fibroids (which had typical whorled and variegated appearance) with adenomyosis(2).

There are various histological findings obtained from samples following hysterectomy which vary from one region to another. In a retrospective study of analysis of hysterectomy cases by Thamilselvi et al,the leiomyoma was found in 56 cases (22.9%) and it ranged in numbers from 1-6. A single leiomyoma was seen in 60 cases. Multiple leiomyoma were seen in 15 out of the 75 cases. Of the maximum leiomyoma, 59 were found to be intramural. Adenomyosis alone was seen in 39 cases (12.9%) and in combination with leiomyoma in 19 cases (7.7%). The hysterectomiesdone for utero vaginal prolapse showed atrophic endometrial and adenomyosis on histopathological examination. Other less frequent lesions which were identified were irregular endometria, endometrial hyperplasia, endometrial polyps and endometrial carcinoma (3).

METHODOLOGY: This study was conducted in the Department of Obstetrics and Gynaecology, Gauhati Medical College & Hospital, Guwahati, which is a tertiary care hospital.

SAMPLE DESIGN: This is Prospective observational study conducted over a period for 1 year in 100 cases (meeting the inclusion criteria) were admitted for hysterectomy for benign lesions. Inclusion criteria included patients in the reproductive age group (30 to 65 years) prepared for hysterectomy for benign gynaecological conditions like:Uterine leiomyoma with menstrual disturbance, DUB not responding to medical therapy, endometriosis, Pelvic inflammatory disease with pelvic pain and dysmenorrhoea. And patients undergoing emergency hysterectomy for post-partum haemorrhage and clinically diagnosed malignant cases were excluded.

STUDY TECHNIQUE: Those patients attending OPD in Department of Obstetrics and Gynaecology, for various complaints (meeting the inclusion criteria) were examined clinically followed by ultrasonography. Trans-abdominal USG was done for all. Cases of menorrhagia were evaluated by blood investigations, Hb, TSH, platelets, creatinine. D and C was done with patients presenting with menorrhagia. Symptomatic fibroid, adenomyosis, endometriosis, chronic pelvic pain and cases of menorrhagia not responding to medical therapy were selected for hysterectomy and were taken up for study after formal consent. The type and route of hysterectomy were determined according to pathology as well as surgeon's expertise. The gross (macroscopic) features of the specimen were noted and then specimens were immediately fixed with 10% formalin and sent to pathology department for microscopic evaluation. 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. Patients age, parity, clinical presentation, clinical diagnosis, USG finding and type of hysterectomy was noted. Results were analysed to find out correlation between clinical, USG, and histopathological findings.

DATA ANALYSIS: Categorical variables were summarised in percentages. Continuous data was described as means or medians. Kappa test and Percentage was used to determine correlation between (a) Clinical diagnosis and USG findings (b) Clinical and

histopathological findings and (c) USG diagnosis and histological findings.

RESULTS:

AGE: Overall the mean age was 42 years. Of the total cases, 40% were in the age group <40 years,. 56% in age group of 41-50 years and 4% in the age group of 51-60years. Maximum number of cases were in the age group of 41-50 years .

PARITY: In this study , cases were divided into 5 groups depending on parity- parity 0, parity 1, parity 2 ,parity 3, parity >3, highest incidence of disease was seen in women with parity of three (38%). About 32% /of cases showed parity of two, 38% had parity three and 10% with parity of one,1% nulliparous.

CLINICAL DIAGNOSIS: Most common clinical finding among these patients were fibroid uterus (54%) followed by DUB (28%) , adenomyosis (13%), endometriosis (2%), chronic PID (1%), adnexal mass (1%) and and endometrial polyp in 1 % case.

PELVIC ULTRASOUND FINDINGS: All the patients were routinely subjected for ultrasonography prior to hysterectomy .Trans-abdominal ultrasonography were done in all cases and 2 % cases trans-vaginal ultrasonography was done. In ultrasonography, fibroid was the most common findings reported in 62% cases followed by bulky uterus in 17%, adenomyosis in 13%, adnexal mass in 1% and endometrial polyp in 1% of cases.Normal scan in 6% of cases were found.

HISTOPATHOLOGY: Out of 100 hysterectomy specimens fibroid was the most common histopathological finding reported in 54%. Other histopathological findings were adenomyosis 22%, leiomyoma with adenomyosis 4%, endometrial hyperplasia 1%, adenomyosis with CIN in 1 %, endometrial polyp 1%, adenomyosis with hydrosalpinx 1% and adenomyosis with endometriosis 1%.No identifiable pathology were reported in 15% cases

CORRELATION BETWEEN CLINICAL AND USG FINDINGS: In our study , out of 54(100%) cases clinically diagnosed as fibroid, 96% (52) were diagnosed as fibroid on USG, 1% case diagnosed as bulky uterus and 1 case as normal uterus. Out of 13(100%) cases of adenomyosis, 8(61.5%) cases were diagnosed on USG as adenomyosis and 2 (15.3%) leiomyoma, and 3(23%) cases as bulky uterus. Out of 28 cases of DUB 13(46%) cases were diagnosed in USG as bulky uterus , 5(17%) were fibroid , 4(14%) were adenomyosis and 6(21.4%) were normal scan. 1 case of adenexal mass was diagnosed as Leiomyoma (pedunculated subserosal fibroid) on USG,1 case of chronicPID as adenomyosis in USG and out of 2 cases of endometriosis 1 case diagnosed as fibroid with endometriosis,1 found out to be normal scan. In 1 case endometrial polyp was diagnosed as endometrial polyp on USG.

TABLE 1: Correlation between clinical and USG findings

CLINICAL	USG		Correlation(%)
Fibroid (54)	fibroid	52	96%
	Bulky uterus	1	2%
	normal	1	2%
DUB (28)	Fibroid	5	17.8%
	adenomyosis	4	14.2%
	Bulky uterus	13	46.4%
	normal	6	21.4%
Adenomyosis (13)	adenomyosis	8	61.5%
	Leiomyoma	2	15.3%
	Bulky uterus	3	23%
Endometriosis (2)	fibroid+ Endometriosis	1	50%
	No identified pathology	1	0
Ch PID (1)	adenomyosis	1	0
Adenexal mass (1)	Leiomyoma(pedunculated subserosal fibroid)	1	0
Endometrial polyp (1)	Endometrial polyp	1	100%
Total (100)		100	

Correlation Between Clinical And Histopathlogical Findings: In Our study, out of 54 (100%) cases clinically diagnosed as fibroid, 98.4%(53) were confirmed on HPE ,other 1.8% case diagnosed as adenomyosis. Out of 28(100%) cases of DUB,10(35.7%) cases were confirmed on HPE as adenomyosis, 6(21.4%) cases were confirmed as leiomyoma and remaining 12 (42.8%) cases were diagnosed no identifiable pathology. Out of 13 cases of Adenomyosis 8 (61.5%) were diagnosed as Adenomyosis, 23% were leiomyoma, 15% cases No identified pathology were found on HPE.Each of 2 cases of endometriosis on HPE diagnosed as adenomyosis with endometriosis and 1 case no identified pathology, 1 case of PID as adenomyosis, 1 case of adenexal mass as fibroid, 1case of endometrial polyp as polyp.

TABLE 2: Correlation between clinical and histopathological findings

CLINICAL INDICATIONS	HISTOPATHOLOGICAL FINDINGS		Correlation (%)
Fibroid (54)	Leiomyoma	53	98.1%
	adenomyosis	1	1.8%
DUB (28)	adenomyosis	10	35.7%
	Leiomyoma	6	21.4%
	No identified pathology	10	35.7%
	normal	2	7.1%
Adenomyosis (13)	adenomyosis	8	61.5%
	Leiomyoma	3	23.07%
	No identified pathology	2	15.3%
Endometriosis (2)	Adenomyosis + endometriosis	1	50%
	No identifies pathology	1	0
PID (1)	adenomyosis	1	0
Adexnal mass (1)	Fibroid + CIN1	1	0
Endometrial polyp (1)	Endometrial polyp	1	100%
Total (100)		100	

Correlation Between Usg And Histopathological Findings: In our study, out of 62 (100%) cases sonographically diagnosed as fibroid, 88% (55) were confirmed on HPE, other 7 cases diagnosed as adenomyosis (3.2%) and no identified pathology(8.06%). Out of 17(100%) cases of bulky uterus 11 (64.7%) cases were confirmed on HPE as No identifiable pathology, 5(29.4%) leiomyoma and 1(5.8%) case adenomyosis. In 6 cases, USG findings as well as HPE findings were unremarkable. Out of 13 cases of adenomyosis (on USG) 84.6% (11cases) were confirmed in HPE as adenomyosis and 15.3% no identifiable pathology were detected.1 case of adenexal mass on USG diagnosed on HPE as leiomyoma. 1 case of endometrial polyp as polyp on HPE.

TABLE 3: Correlation between clinical and HPE findings

USG FINDINGS	HPE FINDINGS		CORRELATION (%)
Fibroid (62 cases)	Leiomyoma	55	88%
	adenomyosis	2	3.2%
	normal	5	8.06%
Bulky uterus (17 cases)	adenomyosis	1	5.8%
	Leiomyoma	5	29.4%
	No identified pathology	11	64.7%
Normal scan (6 cases)	No identified pathology	6	100%
Adenomyosis (13 cases)	adenomyosis	11	84.6%
	No identified pathology	2	15.3%
Adenexal mass (1 case)	Leiomyoma	1	0
Endometrial polyp (1case)	polyp	1	100%
Total	100	100	

DISCUSSION: The mean age at hysterectomy in this study was 42 years with most common age group 41 to 50 years. A majority of the cases were seen with a parity of 3. Similar results were obtained by Thamilsalvi et al at Vinayaka Mission's Kirubananda Variyar Medical College(3). In a study done by Jha R et al 2006 in Nepal, the mean age of the women who underwent hysterectomy was 46.3 years(4).

The commonest clinical diagnosis before hysterectomy in our study was fibroid (54%) followed by DUB (28%). It is consistent with other studies. In the study by Shergill SK, the commonest indication was fibroid (34%), followed by DUB (26%) (10). Jha R found that leiomyoma was the indication in 24.9%, and DUB in 7.7% of the cases(4). Similar results have been reported by Pokras and Hufnagel

(9) and also in studies done in Zaria, Nigeria, Ethiopia, Karachi, and Tehran. Bangladesh (10,5,11,12,13,14).

The correlation between clinical diagnosis with histological diagnosis is necessary. In our study, overall clinical diagnosis was confirmed in 62% of cases. In case of leiomyoma, the sensitivity was 15.52% where as the specificity was 80.43%respectively. kappa test was used to assess agreement between the clinical diagnosis of leiomyoma and the final histological diagnosis, for leiomyoma it was found to be 69% (k=0.69). In cases of adenomyosis, sensitivity and specificity were 43% and 73% with k value 0.264 showing poor agreement. For DUB confirmation was poor with 36% came out as adenomyosis and 21% as leiomyoma. In Tehran, Mahmoud K 2011, the final diagnosis of leiomyoma by histological findings correlated in 92% of surgical specimens to clinical diagnosis(5).

While correlating sonological findings with histopathology, we found that out of 62 cases who were diagnosed to have fibroid uterus on ultrasonography, 55 patients were confirmed to have to have leiomyoma on histopathology with sensitivity and specificity of 4.01% and 94.73% showing good correlation (k=0.814). In cases of adenomyosis, 11 out of 13 cases on USG were confirmed on histopathology with poor (k = 0.352) sensitivity and specificity of 40.69% and 75, 58%. The k value showed poor correlation. In a study done in Nigeria, Eze J et al 2013 ultrasound detected 87% of uterine myoma with sensitivity of 94.5% and specificity of 62.5%. In another study, Eze J et al 2013, Eric D 2013, Thamilselvi Ramchandran, 2011 ultrasound correlated 95% of uterine myoma to histopathological diagnosis (6,7,8).

While correlating between clinical and ultrasound findings in our study ultrasound diagnosis of fibroid is 52(96%) cases with sensitivity and specificityof 14.53% and 78.26% with good correlation coefficient (k= 0.755). In cases of adenomyosis by USG, 8(61.5%) out of 13 cases diagnosed to have adenomyosis with sensitivity and specificity of 31.29% and 93.1% with good correlation coefficient (k =0.529).

CONCLUSION:

- Most common indication of hysterectomy for benign lesion in our study was found to be Fibroid followed by DUB and Adenomyosis.
- The incidence of hysterectomy was found to be more common with para 3.
- Preoperative diagnosis on basis of clinical, USG finding may not always tally with histopathology, which is the ultimate diagnosis.
- Regarding correlation of clinical, USG and histopathological findings results were different for fibroid, DUB and Adenomyosis, which were the three common indications for hysterectomy for benign lesions.
- In case of Fibroid, correlation of clinical findings with USG and histopathology was significant.
- In case of Adenomyosis, correlation of clinical findings with USG was moderate but poor with histopathology.
- In case of DUB correlation of clinical findings with USG and histopathology was poor.

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