

A Clinicopathological Correlation of Hysterectomies: A Hospital Based Surgical Audit

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ABSTRACT

Objectives: To determine correlation of clinical indication of hysterectomies with histological findings and association with age and parity

Study Design: Institution based cross sectional study

Place and Duration of Study: This study was conducted at the Lady Dufferin Hospital, Karachi, Pakistan from Jan. 2007 to Dec. 2009.

Sample size: 322

Sampling Technique: Non Probability Purposive sampling

Materials and Methods: A structured standardized Proforma was used to collect data between Jan 2007 to Dec 2009 from the pathological laboratory data on surgical hysterectomies. The data comprised of clinical, physical and histological examination. The analysis was made on correlation of clinical indication of hysterectomies with histological findings and association with age and parity.

Main outcome measures: Correlation of Clinical Indications and histological findings on uterus (endometrium and myometrium), cervix and ovaries

Results: Three hundred twenty two abdominal hysterectomies were studied. Among the study subjects the mean \pm SD age was 42.36 ± 6.36 . Only 12 (3.7%) women were unmarried. Clinically the commonest indications were Leiomyoma in 167 (51.9%) and DUB 120 (37.7%). Ovarian mass was clinical indication in 4 (1.3%) cases. Histopathology revealed leiomyoma 149 (46.3%) as the commonest uterine pathology, followed by adenomyosis. Endometrium showed Chronic endometritis in 22 (6.9%), hyperplasia in 10 (3.2%) and carcinoma in 2 (0.6%) cases. Inflammation with squamous metaplasia 252 (78.2%) was the most common pathology noted in the cervix whereas Squamous Cell Carcinoma was seen in only 1 (0.3%). Most common finding in ovaries was Cystic follicles in 101 (46.4%), cystadenomas were noted in 6 (2.8%) and Benign teratoma in 3 (1.4%).

Conclusions: Hysterectomy is a major gynecological procedure therefore it should be performed after accurate clinical assessment and with proper and justified indications.

Key Words: Correlation, Clinical indication of hysterectomies, histology, Leiomyoma, Adenomyosis

INTRODUCTION

Hysterectomy is one of the most common surgical procedures having a rate of 6.1-8.6/1000 in all ages¹. There is substantial variation in hysterectomy rates according to geographic, patient related and doctor related factors. Hysterectomy prevalence studies are not available in Pakistan². Prevalence of hysterectomy in UK is 100,000/year, 500,000/year in USA and > 70,000/year in England³.

The first sub-total abdominal hysterectomy with salpingo-oophorectomy was performed by Charles Clay in 1843 and first total in 1929⁴. Advances in anesthesia, aseptic techniques and asepsis has brought down the mortality rate of hysterectomies to 0.1%⁵.

The most common indications are complaints of heavy and irregular uterine bleeding, pelvic pain and pelvic pressure. These symptoms are often associated with uterine leiomyomas, endometriosis, adenomyosis or pelvic organ prolapse. However the same symptoms may occur in the absence of any organic lesions as seen in DUB⁵.

The majority of hysterectomies are elective and more than 90 % are performed in women with non malignant conditions. In general hysterectomies are performed to improve the quality of life rather than to cure life threatening conditions. It is the only definitive cure for Abnormal Uterine Bleeding. Multiple studies have shown that symptoms as pelvic pain, dyspareunia and fatigue are abolished or significantly reduced after surgery⁶.

Hysterectomies may be performed by abdominal or vaginal or a laparoscopic approach. The abdominal or vaginal approaches may be total (involving removal of uterus and cervix) or subtotal (involving removal of uterine fundus and lower uterine segment with preservation of cervix) with or without removal of ovaries⁷.

Histopathologically examination has great significance as a diagnosis like adenomyosis can only be established by this procedure. Also DUB which is a major cause of bleeding per vaginum is a diagnosis of exclusion and requires confirmation of absence of any organic lesion. Histopathology is also required for confirmation or to

rule out malignancy in patients with clinical suspicion of malignancy and for their grading and staging⁸. Ultimate diagnosis is only on histopathology so all specimens should be subjected to histopathological examination for a conclusive decision on morphology⁹.

MATERIALS AND METHODS

This is a hospital based cross sectional study conducted at Lady Dufferin Hospital, Karachi, during a period of three years from January 2007- December 2009.

This study includes all women undergoing elective abdominal hysterectomy with or without salphingo-oophorectomy.

A short history regarding age parity, presenting signs and symptoms and clinical impressions was recorded on a Proforma and added from hospital records. Specimens were received in 10% formalin solution. Detailed gross examination was done. Appropriate sections were taken processed and stained with routine H & E stain. All slides were examined and reported by consultant histopathologist. Clinical histories with specific focus on age, parity and clinical indications for hysterectomy have been correlated with histological findings. The data was collected and analysed on social package for statistical analysis window version 16.

RESULTS

Three hundred twenty two abdominal hysterectomies were studied. Among the study subjects the mean + SD age was 42.36 + 6.36. Only 40% (14.3%) belonged to parity. 102 (31.7%) females had 4-5 children, closely followed by a group of 95 (29.5%) females who had more than 5 children at the time of hysterectomy. Only 79 (32.5%) had 1-3 issues and 46 (14.3%) had no children. Only 12 (3.7%) women were unmarried. A past history of early pregnancy loss (spontaneous abortion) was observed in 212 (65.8%) and 3 consecutive abortions in 102 (31.7%) women were observed in the study population.

The order of frequency of complaints among study subjects was: Menorrhagia 121 (37.6%), Polymenorrhoea 63 (19.60), Pain 44 (13.7) and irregular bleeding 43 (13.4%). These characteristics are shown in table I.

Most women 177 (55%) sacrificed both ovaries while one ovary was removed in 41 (12.7%) patients. In 104 (32.3%) both ovaries were conserved and.

The commonest clinical indication was Leiomyoma in 167 (51.9%) and DUB 120 (37.7%) and Adenomyosis was only suspected in 8 (2.5%) women.

Cervical histopathology showed chronic inflammation in 305 (94.7%) cases with additional findings of Squamous metaplasia in 252 (78.2%). Dysplasia of exocervical squamous epithelium was present in 4 (1.3%) and Squamous Cell Carcinoma was diagnosed in only 1 (0.3%) patient.

Uterine myometrium revealed Leiomyoma in 149 (46.3%), Adenomyosis in 102 (31.7%) and Adenomyosis combined with Leiomyoma in 38 (11.8%) patients. No significant pathology was seen in 33 (10.2%).

Table No.1: Demographic Characteristics of Hysterectomised Patients n = 322

S #	Characteristics of Hysterectomy Patients	No.	%
1.	Age (Yrs) Mean \pm SD 42.36 \pm 6.36		
2.	Marital Status Married Unmarried	310 12	96.3 3.7
3.	Parity 0 1-3 4-5 > 5	46 79 102 95	14.3 24.5 31.7 29.5
4.	Previous History of Abortion 1-2 3 4 & more	212 102 8	65.8 31.7 2.5
5.	Major Complaints Menorrhagia Polymenorrhoea Pain Irregular bleeding Pain & Menorrhagia Postmenopausal bleeding Primary infertility others	121 63 44 43 25 10 4 12	37.6 19.6 13.7 13.4 7.8 3.1 1.2 3.7
6.	Nature of Operation TAH BSO TAH TAH & RSO	177 104 41	55 32.3 12.7
7.	Clinical Diagnosis Leiomyoma DUB Adenomyosis Endometriosis Ovarian mass Others	167 120 15 12 4 4	51.9 37.2 4.6 3.7 1.3 1.3

Secretary endometrium 195 (60.7%) was most commonly found and 65 (20.2%) had proliferative phase. In 22 (6.8%) patients endometrial histopathology showed Chronic Endometritis, 8 (2.6%) showed endometrial polyps and 10 (3.2%) showed Endometrial hyperplasia. 2 (0.6%) cases of Endometrial Carcinoma were also seen; as in shown in Table 2.

Table No.2: Frequency of Histopathology Reports

1.	Cervical Pathology		
	Inflammation and metaplasia.	252	78.2
	Inflammation	53	16.5
	Dysplasia	4	1.3
	Carcinoma	1	0.3
	No significant pathology	12	3.7
	Total	322	100
2.	Uterine Muscle Pathology		
	Leiomyoma	149	46.3
	Andenomyosis	102	31.7
	Leiomyoma+	38	11.8
	Andenomyosis	33	10.2
	No Significant Pathology	322	100
	Total	322	100
3.	Endometrial Histopathology	195	60.7
	Secretary	65	20.2
	Proliferative	10	3.2
	Atrophic	22	6.9
	Endometritis	10	3.2
	Endometrial	8	2.6
	hyperplasia	8	2.6
	Endometrial Polyp	2	0.6
	Disordered Proliferation	322	100
	Endometrial Carcinoma		
		Total	322
4.	Ovarian Pathology		
	Cystic follicles	101	46.4
	Corpus luteal cyst	22	10.1
	Endometriosis	17	7.8
	Simple benign cyst	12	5.5
	Cystadenoma	6	2.8
	Benign cystic teratoma	3	7.4
		1	0.4
	Granlosa cell tumor	1	0.4
	Benign spindle cell tumor	55	25.2
	No significant pathology	218	100
	Total	218	100
5.	Fallopian tube pathology		
	Salpingitis	5	2.3
	Hematosalpinx	3	1.4
	Endometriosis	2	0.9
	No significant pathology	208	95.4
	Total	218	100

Most common ovarian finding on histopathology was Cystic follicles in 101(46.4%) cases. Endometriosis was seen in 14 (4.3%) patients only. Cystadenoma was seen in 6 (2.8%) whereas Benign Cystic Teratoma was seen

in 3 (1.3%) patients.No significant pathology was observed in 55(5.2%) cases.

DISCUSSION

Several complementary approaches are often necessary in the assessment of possible indications for hysterectomy particularly with reference to age and parity among low social group of women¹⁰. Currently the selection of cases for hysterectomy have been debatable. The major reason is preferred approach for medical and nonsurgical treatment before castration.

The association of clinical findings to histopathology should be helpful for correct decision of surgical approach.

Mean age of study population was 42.36±6.36 in our study which is comparable to previous studies carried out in Pakistan and India. Majority of patients were between 35-45 years of age in the study by Khatoon AB, 2008 and the age is above 40 years in a study by Khawaja N,2005.^{11 &12}

The indications most common in this study were leiomyoma (51.9 %), DUB (37.7 %), and ovarian mass(1.3 %). Similar indications were observed to be the most common, in a study by Tahira T in Faisalbad with DUB in 43.3% and leiomyoma in 26.7%¹³. Comparable results are seen in Shergill study in India with leiomyoma (34%) as the most common clinical indication followed by DUB (26%)¹⁴. Another Nigerian study also reveals leiomyoma (61.8%) to be the most common clinical indication for surgical approach¹⁵. Chan study also showed comparable percentages for leiomyoma (54.5%) as the most common pre-operative indication¹⁶. This suggests that uterine leiomyomas and DUB are two major problems requiring hysterectomy.

The association with parity is also significant as currently the trend of indications of hysterectomy starts earlier between 1-3 parity where 24.5% hystrectomies were performed in this study population. Then at parity 4-5,31.7 % and at > 5 parity ,29.5% had hysterectomy. This trend in our study population showed removal of uterus at early parity compared to other populations. This could either be an early decision for surgery before medical treatment, an early clinical diagnosis and an increase in the trend and rate of hysterectomies.

In current study cervical histology showed chronic inflammation in 305 (94.7%) and majority 25 (78,2%) had additional Squamous metaplasia. Zahir N also reported Chronic cervicitis as the most common pathology seen in uterine cervix¹⁷.

Most common pathology of uterine muscle diagnosed on histopathology was leiomyoma 46.3% which correlated with the pre-operative clinical indication very closely. Most common endometrial pathology in our study was endometritis which may have been associated with use of intra-uterine contraceptive devices.

Ovarian pathology was rare clinical indication in our study (1.3%). Histopathology revealed a higher incidence of ovarian pathology in comparison. Cystic lesions were common in ovaries with Cystic follicles detected in 46.4% , cystadenomas in 2.8% and Benign cystic teratoma in 1.4%. Endometriosis was found in (7.8%) in the current study. Lack of proper prior investigations in our underprivileged and low socio-economic population could be reason for low rate of prior clinical suspicion of ovarian disease.

The bulk of hysterectomised women had major complaints of menorrhagia (37.6%), polymenorrhoea (19.6%), pain (13.7%) and irregular bleeding 13.4 %. Pain and menorrhagia combined were seen in 7.8% cases. These findings suggest that a detailed assessment of history, family history of hysterectomy, physical examination and diagnostic procedures like endovaginal ultrasound, CT Scan, MRI and biomarkers should be requested preoperatively.

Histology with advanced modalities for differentiated tumors or conditions should be recommended.^{18,19}

CONCLUSION

Hysterectomy is a major gynecological procedure therefore it should be performed with a proper and justified indications. The gynecological surgeon with a referral note to histopathologist on a structured Performa should request for detail histology. This strategy will provide a better clinicopathological picture of gynecological problem which will be treated and cured completely.

Limitations of study: The study population was from a private tertiary care hospital and therefore is a unicentre analysis.

Conflict of interest: The authors declared no conflict of interest for this study.

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