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# HYSTERECTOMY: A CLINICOPATHOLOGICAL CORRELATION

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## ABSTRACT

**Objectives:** To correlate indications of hysterectomy with the histopathological findings, in order to determine the percentage of preoperative diagnosis that was confirmed on histopathology and to determine the frequency of unexpected pathologies.

**Methods:** A retrospective study of 200 patients who had elective hysterectomy performed for various indications during the study period from January 2014 to December 2014 was conducted.

**Settings:** Karpaga Vinayaga Institute of Medical Sciences and Research Institute.

**Results:** 97.5% of hysterectomies were done for benign indications. The most common pathology identified was Leiomyoma in 32% of cases. Hysterectomies done for UV prolapse showed atrophic endometrium in 62.7% of cases. Other less frequent pathologies identified included endometrial hyperplasia, disordered proliferative phase and endometrial polyps.

**Conclusion:** Histopathological analysis correlated well with preoperative clinical diagnosis for hysterectomy. Benign pathologies were more common than their malignant counterparts. The commonest indication and histological finding in our setting was leiomyoma. The clinical and pathological correlation is 91.8% in case of leiomyoma. Histological diagnosis is considered the definitive method of evaluating tumours.

**Key Words:** Leiomyoma, Adenomyosis, Hysterectomy

## INTRODUCTION

Hysterectomy is the most commonly performed gynecological surgical procedure. It is estimated that over 500,000 hysterectomies are performed each year. The vast majority of these procedures are still performed via an abdominal approach (64%) with vaginal (22%) and laparoscopic (14%) approaches being less common (Jacoby et al<sup>1</sup>, 2009). The Society of Pelvic Reconstructive Surgeons issued guidance on choosing hysterectomy route in 1999. Since then vaginal hysterectomy has again gained favor<sup>2,3</sup>.

The advantages of laparoscopic hysterectomy are short-term hospital stay and recovery time. A systematic review and meta-analysis reports the average length of hospital stay to be 2 days less (95% CI 1.9-2.2) when compared to abdominal hysterectomy<sup>4</sup>. However, a systematic review based on 5RCTs and 4 large case series reported laparoscopic hysterectomy to be more expensive and time-consuming than abdominal or vaginal hysterectomy<sup>5</sup>. Laparoscopic techniques are not without

risks and are associated with more complications than open operations, notable amongst which are bladder and ureteric injuries<sup>5</sup>. Whether to remove the cervix remains unclear in both open and laparoscopic hysterectomy procedures<sup>5</sup>. The disadvantages of a subtotal hysterectomy are possible in on-going menstrual bleeding and requirement of continued cervical surveillance (eg. smears)<sup>5</sup>.

Fibroids are the most common indication (39%) cited for performance of hysterectomy (Whiteman et al<sup>6</sup>, 2008). The purpose of this study is to correlate various indications of hysterectomy with the histopathological examination.

## METHODS

The retrospective study analysis of 200 hysterectomy cases over a period of one year from January 2014 to December 2014 was reviewed in Department of OBG.

Patient's age, type of hysterectomy, indication of surgery as well as true pathological diagnosis were reviewed, analyzed and correlated.

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### RESULTS & ANALYSIS

200 hysterectomies were studied. Hysterectomies were distributed over a wide age ranging from 20 years to 80 years. Of this 46% of cases were encountered in 40-49 years, which is the most common age group 22.5% of women were in age group of 30-39 years & 16.5% were 50-59 years. The relationship between age and number of hysterectomies is illustrated in Table 1.

**Table 1: Age Distribution of 200 cases of hysterectomy.**

Age in Years	Number of Cases	Percentage
20-29	2	1%
30-39	45	22.5%
40-49	92	46%
50-59	33	16.5%
60-69	26	13%
70-79	2	1%

The most common type of hysterectomies was Total Abdominal Hysterectomy with Bilateral Salphingo Ophorectomy (TAH with BSO) and Vaginal Hysterectomy (VH) , followed by Total Abdominal Hysterectomy (TAH). The most common age group for TAH with BSO was 40-49 years & Vaginal hysterectomy was 60-69 years, as shown in Table 2.

**Table 2: Type of hysterectomy in different age group.**

Type of Hysterectomy	Age						Number of Cases
	20-29	30-39	40-49	50-59	60-69	70-79	
TAH with BSO	1	24	61	23	1	2	112
VH	-	5	22	10	25	-	62
TAH	1	16	9	-	-	-	26

The various indications for hysterectomy are depicted in Table 3. 97.5% were benign and 2.5% were for malignant indications. Leiomyoma was the most common pre-operative clinical diagnosis found in 61 (30.5%) cases, followed by UV prolapse diagnosed in 59 (29.5%) cases. Other benign clinical indications included DUB (20.5%), Adenomyosis (4%), CIN (5.5%), Benign ovarian tumours (5%). 5 hysterectomies were performed for malignant

indications which included CA endometrium, CA cervix and CA ovary.

**Table 3: Preoperative clinical diagnosis for hysterectomies.**

Clinical Diagnosis	Number of Cases	Percentage
Fibroid	61	30.5%
UV Prolapse	59	29.5%
DUB	41	20.5%
Adenomyosis	8	4%
Endometrial polyp	2	1%
Postmenopausal bleeding	3	1.5%
Benign ovarian tumour	10	5%
CIN (Cervical Intraepithelial Neoplasia)	11	5.5%
CA Cervix	2	1%
CA Endometrium	2	1%
CA ovary	1	0.5%

Leiomyoma was the commonest pathology found in 32% of cases as illustrated in Table 4. Hysterectomies for UV prolapse showed atrophic endometrium in 62.7% of cases. Other less frequent pathologies identified included endometrial hyperplasia, disordered proliferative phase & endometrial polyps. 7 cases of Benign serous cystadenomas, 2 cases of ovarian endometriosis and 1 case of hydrosalphix was found. 2 cases of endometrial adenocarcinoma, 2 cases of squamous cell carcinoma of cervix and 1 case of malignant mixed germ cell tumour of ovary was identified.

**Table 4: Pattern and frequency of pathologies identified in 200 hysterectomy cases.**

Histopathological Diagnosis	Number of Cases	Percentage
Fibroid	64	32%
Adenomyosis	19	9.5%
Atrophic endometrium	44	22%
Endometrial hyperplasia	42	21%
Cystoglandular hyperplasia		
Proliferative endometrium		
Secretory endometrium		
Disordered proliferative phase		
Endometrial polyp	5	2.5%
Chronic cervicitis	11	5.5%
Cervical dysplasia		
Benign serous cystadenomas	7	3.5%

Ovarian endometriosis	2	1%
Hydrosalpinx	1	0.5%
Squamous cell carcinoma of cervix	2	1%
Endometrial adenocarcinoma	2	1%
Malignant mixed germ cell tumour of ovary	1	0.5%

The final pathologic diagnosis confirmed the clinical indication in 91.8% in cases of leiomyomas, 75% in case of adenomyosis. The 41 cases diagnosed clinically as DUB were pathologically proven as follows: 9 adenomyosis, 8 as fibroid, 8 had endometrial hyperplasia & 2 showed endometrial polyps.

## DISCUSSION

Hysterectomy still remains the widely used treatment modality even in developed countries. The complications of hysterectomy are often underestimated. Minor pyrexial morbidity was found in 47% of women after abdominal hysterectomy in the Pinion study with 5% requiring a blood transfusion<sup>7</sup>. Common complications after hysterectomy include hemorrhage (2.4%), genitourinary disorders (eg. urinary retention, renal or ureteral injury) (1.9%), urinary tract infection (1.6%) and infection other than that in the urinary tract (1.6%)<sup>8</sup>

In a retrospective study including over 62,000 hysterectomies, the total incidence of ureteral injury after all hysterectomies was 1.0 of 1000 procedures and only 0.4 of 1000 procedures after total abdominal procedures (Harkki – Siren et al., 1998). It has been shown that hysterectomy increase risk for subsequent stress urinary Incontinence (SUI). The true incidence of SUI caused by hysterectomy remains controversial (Roovers et al.,<sup>10</sup> 2000)

Adhesion after an abdominal operation is very common, in fact, 94% of patients develop intra-abdominal adhesions following a laparotomy<sup>11,12</sup>. Al-Sunaidi and Tulandi<sup>13</sup>, studying small bowel obstruction (SBO) after hysterectomy for benign conditions, reported that TAH-related adhesions accounted for 98% of SBO. The pooled rate for surgical site Infections (SSIs) after abdominal hysterectomy is reported at 1.7% by the National Health care Safety Network but ranged from 1% to 11% (olsen et al.,<sup>14</sup> 2009). The incidence of vault prolapse after vaginal hysterectomy for prolapse is approximately 12% but only 2% when the indication was other than prolapse<sup>15</sup>.

Larger uteri are associated with a higher complication rate, primarily due to blood loss. When comparing uterine weights of less than 500 g, 500-999g, and greater

than 1000g, risk of experiencing blood loss over 500ml, blood transfusion, major organ injury, and hospital readmission all increased as weight of the uterus increased (Unger et al.,<sup>16</sup> 2002). In 4% of women who die of cancer of the ovary, cervix and uterus hysterectomy should be seen as a life saving as well as life enhancing procedure.<sup>17</sup> Hysterectomy has a high patient satisfaction rate because it is curative, usually performed when medical or minimal access management has failed, and repeated procedures or prolonged follow up is not needed.<sup>18, 19-21</sup>

## CONCLUSION

While confirming the preoperative diagnosis by histopathological examination, high confirmation rates were found for leiomyomas, malignancy & adenomyosis. Out of 41 cases, clinically diagnosed as DUB, histopathological examination revealed leiomyoma in 8 cases, adenomyosis in 9 cases, endometrial polyp in 2 cases.

## ABBREVIATIONS

RCT – Randomised Controlled Trial

TAH with BSO- Total Abdominal Hysterectomy with Bilateral Salpingo Oophorectomy

VH - Vaginal Hysterectomy

CIN - Cervical Intraepithelial Neoplasia

DUB – Dysfunctional Uterine Bleeding

SUI - Stress Urinary Incontinence

SBO - Small Bowel Obstruction

SSI - Surgical Site Infection

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