

# Elective hysterectomy: A clinicopathological review from Abha catchment area of Saudi Arabia

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## Summary

**Objective:** To review the major indications, types and clinicopathological features of elective hysterectomy managed in our locality.

**Material and Methods:** A retrospective study of 317 consecutive patients who had elective hysterectomy performed for various indications during the study period from January 1994-December 2001, (96 months) was conducted. The patients were divided into 3 groups: Group 1, total abdominal hysterectomy (TAH) 165 (52%); Group 2: subtotal abdominal hysterectomy (STAH) 59 (18.6%) and Group 3: vaginal hysterectomy (VH), 93 (28.4%).

Data extracted from the case files included age, parity, presenting symptoms and indication for hysterectomy. Others included relevant investigation results, type of hysterectomy, and histopathological diagnosis of the specimens

**Setting:** Abha Maternity Hospital, Abha, Saudi Arabia.

**Results:** No statistically significant trend was found in the annual number of hysterectomies performed during the study period ( $p > 0.05$ ). There was statistically significant difference in the mean age in the 3 groups of patients ( $p < 0.05$ ), but none in the parity ( $p > 0.05$ ).

Menorrhagia and abnormal vaginal bleeding was the indication for hysterectomy in 123 (38.8%) patients, followed by uterine prolapse in 91 (28.7%), abdominopelvic mass, 48 (15.1%) and pelvic mass in 46 (14.8%). Histopathology of hysterectomy specimens and appendages were reported as abnormal in 179 (56.4%), with uterine fibroids the most common pathology in 82 specimens (25.8%) followed by adenomyosis in 72 specimens (22.7%).

**Conclusion:** Uterine fibroids and adenomyosis were the most common benign conditions in hysterectomy specimens in our community with peak incidence at 41-50 years, while endometrial and ovarian cancers peaked at the same age group. At the same time, vaginal hysterectomy was performed exclusively for utero-vaginal prolapse.

**Keywords:** Vaginal hysterectomy, Total abdominal hysterectomy subtotal abdominal hysterectomy, Saudi Arabia.

## Résumé

**Objectif:** Faire le bilan des indications majeurs, types et traits clinico-pathologiques de l'hystérectomie de confort traité dans notre région.

**Matériel et Méthodes:** Une étude rétrospective de 317 patients consécutifs avaient subi une hystérectomie de confort opérée pour des indications diverses au cours de la période d'étude de janvier 1994 au décembre 2001, (96 mois),

a été effectuée. Les patients ont été divisé en 3 groupes. Groupe 1, l'hystérectomie abdominale totale (HAT), 165 soit 52%; Groupe 2 l'hystérectomie abdominale subtotale (HAST) 59 soit 18,6% et Groupe 3; l'hystérectomie, l'hystérectomie abdominale subtotale (HAST) 59 soit 18,6% et Groupe 3; l'hystérectomie, l'hystérectomie vaginale (HV), 93 soit 28,4%.

Les extraies des données des dossiers sont les suivants: âge, parité, les symptômes présentés et indication d'hystérectomie. Y compris des résultats d'enquête pertinents, type d'hystérectomie, et le diagnostic histopathologique des spécimens.

**Cadre:** Maternité d'Abha, Abha Arabie Saoudite.

**Resultats:** Aucune tendance statistique importante a été noté dans les nombres des hystérectomies opérées pendant la période d'étude ( $P > 0.05$ ). Il y avait un écart statistiquement important dans l'âge moyen de 3 groupes des patients ( $P < 0,05$ ).

La ménorragie et saignement anormal du vaginal étaient l'indication pour l'hystérectomie chez 123 soit 38,8% des patients, suivi par prolapsus chez 91 soit 28,7%, abdominopelvien massif, 48 (15,1%) et pelvien massif en 46 (14,8%). L'histopathologie des spécimens d'hystérectomie et appendices ont été notés comme anormaux chez 179 soit 56,4%), avec fibrome utérin est une pathologie la plus fréquente dans 82 spécimens soit 25,8% suivi par adenomatose dans 72 spécimens soit 22,77%.

**Conclusion:** Fibrome utérin et l'adenomatose étaient des affections bénignes les plus fréquentes dans les spécimens hystérectomies dans notre région avec la poussée d'incidence de 41- 50 ans, tandis que l'endomètre et cancer de l'ovaire plus fréquent pendant le même groupe d'âge. En même temps l'hystérectomie vaginale a été opérée exclusivement pour le prolapsus utéro vaginal.

## Introduction

Hysterectomy offers an effective treatment modality to control many problematic gynaecological symptoms such as menorrhagia, dysmenorrhoea and to cure common benign gynaecological conditions such as uterine fibroids and adenomyosis<sup>1-5</sup>. However, the reported apparent decline in the rate of hysterectomy operation by some authors<sup>6</sup> in the late 1970's and 1980's seemed to have stalled over the last decade<sup>7-8</sup> with uterine leiomyoma, or uterine fibroids continuing to be the leading indication for this surgery<sup>7,9-10</sup>. Over 200,000 hysterectomies and an increasing number of myomectomies are performed each year in the United States because of uterine fibroids<sup>11</sup>. Concurrently, the preferred surgical approach (abdominal, vaginal or laparoscopic) has undergone a change over the years with a resurgence of vaginal approach for benign conditions excepting prolapse.

\* Correspondence

This study aims to determine the major indications, types and the clinicopathological trends of hysterectomy performed at our institution over a period of 8 years.

**Materials and methods**

The study is a retrospective analysis of 317 patients who had hysterectomy as elective procedure at the Abha Maternity Hospital and had specimens including the appendages examined histopathologically over an 8-year period between January 1994 and December 2001.

The patients were divided into 3 groups based on the method of hysterectomy. Group 1= Total abdominal hysterectomy (TAH); Group 2, =Subtotal abdominal hysterectomy(STAH);Group 3= Vaginal hysterectomy,(VH) .

The data extracted from the medical records included age, parity, number of abortions, presenting symptoms and indications for hysterectomy. Others included relevant investigation results, pre-and post-operative haemoglobin and histopathological diagnosis of the specimens.

All the patients were first seen at the consultant clinic and were admitted for surgery after appropriate investigations

and workup. Each patient received intravenous antibiotic prophylaxis,with Cefoxitin (Mefoxin) 2 G statim. Those patients for vaginal hysterectomy (VH) received in addition Metronidazole (Flagyl) 500 mg intravenously every 8 hours. A soap and water enema was administered the night before surgery.

The data were coded and entered into an IBM compatible computer. Statistical analyses were carried out using the Scientific Package for the Social Sciences (SPSS). Comparison between means of quantitative data was by the analysis of variance (ANOVA) while the chi-square was used for qualitative variables. The level of significance (p) was set at 0.05.

**Results**

Out of a total number of 317 patients in the study, 165 (52%) had (TAH), ( group 1), 59 (18.6%) had (STAH), group 2 and 93 (29.4%) had (VH) , (group 3). The indication for hysterectomy varied from menstrual abnormalities to suspected pelvic malignancy.

There were statistically significant differences in the mean age, number of abortions and pre operative haemoglobin between the three groups (p<0.05). However, no statistically

**Table 1 Characteristics of patients**

Characteristic	Group 1 (TAH) N= 165	Group 2 (STAH) N=59	Group 3 (VH) N=93	Total Population N = 317	Significance
Age Mean	46.88 ± 8.75	45.61 ± 90.8	62.72 ± 13.86	51.29 ± 12.86	p = 0.00*
Range (years)	30 - 72	30 - 80	35 - 105	30 - 105	
Parity. Mean	6.57 ± 3.87	6.81 ± 4.17	6.64 ± 3.62	6.64 ± 3.85	p = 0.91 (NS)
Abortions (X ± SD)	1.11 ± 1.62	1.02 ± 1.54	0.44 ± 0.93	0.90 ± 1.49	p = 0.002*
Pre-op Hb. Mean (Range) g/dl	12.64 ± 1.75 5.60 - 17.20	12.18 ± 1.80 4.00 - 15.50	13.38 ± 1.61 7.80 - 16.60	12.78 ± 1.77 4.00 - 16.60	p = 0.00*
Post-op Hb.Mean (Range) gm/dl	11.45 ± 10.02 6.10 - 14.80	10.71 ± 1.17 8.00 - 12.80	10.88 ± 1.61 7.40 - 15.00	11.15 ± 7.29 6.10 - 15.00	p>0.05 (NS)

TAH = Total abdominal hysterectomy  
STAH = Subtotal abdominal hysterectomy  
VH = Vaginal hysterectomy  
(NS) = Not significant statistically  
\* = Significant statistically,  
Pre-op = Preoperatively  
Post-op = Postoperatively  
Hb = Haemoglobin

**Table 2 Indications for hysterectomy**

Indications for hysterectomy	Group 1 (TAH) N= 165	Group 2 (STAH) N=59	Group 3 (VH) N=93	All groups N = 317	Significance
DUB + Menorrhagia.n (%)	95(57.5)	26(44.0)	2 (2.1)	123(38.8)	X <sup>2</sup> = 77.7 p = 0.000*
Pelvic mass.n(%)	32(19.3)	15(25.4)	0(0.0)	47(14.8)	X <sup>2</sup> = 24.1 p=0.000*
Abdomino-pelvic mass.n (%)	31(18.7)	17(28.8)	0(0.0)	48(15.2)	X <sup>2</sup> =27.07 p=0.000*
Pelvic pain.n (%)	5 (3.0)	1 (1.6)	0 (0.0)	6 (1.9)	X <sup>2</sup> = 2.9 p=0.23 (NS)
HFM	2 (1.2)	0 (0.0)	0 (0.0)	2 (0.6)	X <sup>2</sup> = 185 p = 0.39 (NS)
Uterine prolapse	0 (0.0)	0 (0.0)	91(97.8)	91(28.7)	X <sup>2</sup> = 30.7 p = 0.0000*

HFM = Hydatidiform mole (\* = significant statistically,  
NS = not significant statistically)  
DUB = Dysfunctional uterine bleeding  
TAH = Total abdominal hysterectomy  
STAH = Subtotal abdominal hysterectomy  
VH = Vaginal hysterectomy  
Number in parenthesis represent percentages (%)

significant differences were discovered in the mean parity, and the post operative haemoglobin (p>0.05) as shown Table 1. The indications for hysterectomy are shown in Table 2. Dysfunctional uterine bleeding was the indication in 95 patients (56.3%) who had TAH,(Group 1), 26 patients (42.3%) in group 2, and 2 patients (2.1%) who had VH.(Group 3).

Ninety-one patients (97%) who had VH presented with second to third degree utero-vaginal prolapse. There were statistically significant differences in the major indications for hysterectomy in the three groups (p<0.05). The relationship between age group and histopathological diagnosis of the specimens is shown in Table 3 with peak frequency of fibroids, adenomyosis, endometrial and ovarian cancers in the age group 41-50 years. The relationship between parity and

**Table 3 Maternal age in relation to abnormal histopathological diagnosis**

Age group (yrs)	FB N = 82	AD N = 72	ENDO N = 9	OV N = 8	Uterine Sarcoma (N= 3)	ChoCA N = 3	HTD N = 2	Total N = 79
>20	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)
21 - 30	2(0.6)	1(0.3)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	3(0.9)
31 - 40	26(8.2)	9(2.8)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	0(0.0)	35(11.0)
41 - 50	40(12.6)	38(12.0)	5(1.5)	4(1.3)	0(0.0)	0(0.0)	2(0.6)	89(28.0)
51 - 60	10(3.1)	19(6.0)	1(0.3)	2(0.6)	2(0.6)	3(0.9)	0(0.0)	37(11.7)
61 - 70	4(1.3)	4(1.3)	1(0.3)	1(0.3)	0(0.0)	0(0.0)	0(0.0)	10(3.1)
>70	0(0.0)	1(0.3)	2(0.6)	1(0.3)	1(0.3)	0(0.0)	0(0.0)	5(1.6)
Total	82(25.8)	72(22.7)	9(2.8)	8(2.5)	3(0.9)	3(0.9)	2(0.6)	179(56.4)

Figures in parenthesis represent percentage (% out of 317)

Total = Total abnormal histopathological reports

(FB = Uterine fibroids; AD = Adenomyosis; ENDO = Endometrial carcinoma; OV = Ovarian carcinoma;

Cho CA = Choriocarcinoma; HTD = Hydatidiform mole).

**Table 4 Parity in relation to abnormal histological diagnosis**

Parity	FB N = 82	AD N = 72	ENDO N = 9	OV N = 8	Uterine Sarcoma (N= 3)	ChorioCA N = 3	HTD N = 2
0	13(15.8)	4(5.6)	0(0.0)	2(25.0)	0(0.0)	0(0.0)	0(0.0)
1 - 3	27(40.0)	14(19.4)	3(33.3)	2(25.0)	0(0.0)	0(0.0)	2(100.0)
4 - 6	19(23.1)	14(19.4)	3(33.3)	2(25.0)	1(33.3)	0(0.0)	0(0.0)
>6	24(29.1)	40(55.6)	3(33.4)	2(25.0)	2(66.7)	3(100.0)	0(0.0)
Total	82(100.0)	72(100.0)	9(100.0)	8(100.0)	3(100.0)	3(100.0)	2(100.0)

Numbers in parenthesis represent percentage (% of specific histopathological diagnosis)

FB = Uterine fibroids; AD = Adenomyosis; ENDO = Endometrial Carcinoma; OV = Ovarian Carcinoma;

HTD = Hydatidiform mole.

**Table 5 Trends in the routes of hysterectomy**

Year of study	Group 1 (TAH) N = 165	Group 2 (Sub TAH) N = 59	Group 3 (VH) N = 93	Total
1994	18(58.0)	3(9.6)	10(32.2)	31(9.7)
1995	19(46.3)	8(19.5)	14(34.1)	41(12.9)
1996	34(72.3)	4(8.5)	9(19.1)	47(14.8)
1997	16(55.1)	3(10.3)	10(34.4)	29(9.1)
1998	12(36.3)	7(21.2)	14(42.4)	33(10.4)
1999	20(45.4)	11(25.0)	13(29.5)	44(13.8)
2000	28(52.8)	11(20.7)	14(26.4)	53(16.7)
2001	18(46.1)	12(30.7)	9(23.0)	39(12.3)
Total	165	59	93	317

$\chi^2$  for linear trend = 2.084;  $p = 0.148$

Numbers in parenthesis represent percentages (%)

TAH = Total abdominal hysterectomy;

SubTAH = Subtotal abdominal hysterectomy;

VH = Vaginal hysterectomy

histopathological diagnosis of specimen is shown in Table 4. The frequency of uterine fibroids peaked at a parity of 1-3, while the prevalence of adenomyosis peaked in the grandmultiparae (parity >6). The trend in the number and route of hysterectomy over the study period is shown in Table 5. There was no statistically significant changes in the annual incidence ( $p > 0.05$ ). The histopathological diagnosis in relation to the route and type of hysterectomy is shown in Table 6.

**Discussion**

This retrospective study has shown that there was no statistically significant trend in the number of hysterectomies performed over the 8-year study period. This is in consonance

with literature report that the rate of hysterectomy has been stable in the last decade<sup>7-8</sup>

In this study, 165 (52%) had TAH, while 59 (18.6%) had STA. However, the choice of either TAH or STA in the study group depended on the surgeon but in general STA was performed only for

suspected benign conditions. However, there are conflicting reports regarding the value of the cervical remnant following STA in relation to sexual satisfaction<sup>12-15</sup>. Learman et al,<sup>16</sup> compared both TAH and STA, and found no statistically significant differences between the two groups regarding surgical complications and clinical outcome, including sexual satisfaction during a two year follow-up. STA may be indicated in cases of endometriosis with obliteration of the anterior and posterior cul-de sac,

**Table 6 Histopathological findings in the specimens in relation to type of hysterectomy**

Histopathology of uterus and appendages n (%)	Group 1 (TAH) N = 165	Group 2 (Sub TAH) N = 59	Group 3 (VH) N = 93	Total 317
FB	34(20)	24(40.6)	4(4.3)	62(19.2)
AD	26(15.7)	10(16.9)	11(11.8)	47(14.8)
FB + AD	9(5.4)	6(10.1)	1(1.0)	16(5.0)
FB + AD + ENDO	2(1.2)	0(0.0)	0(0.0)	2(0.6)
AD + OV	2(1.2)	0(0.0)	0(0.0)	2(0.6)
ENDO	5(3.0)	1(1.6)	0(0.0)	6(1.8)
OV	5(3.0)	1(1.6)	0(0.0)	6(1.8)
AD + ENDO	1(0.6)	0(0.0)	0(0.0)	1(0.3)
FB + ENDO	1(0.6)	1(1.6)	0(0.0)	2(0.6)
NORMAL	59(35.7)	10(16.9)	73(78.4)	142(44.7)
OTHERS	21(12.7)	6(10.1)	4(4.3)	31(9.7)

FB = Uterine fibroids; AD = Adenomyosis; ENDO = Endometrial carcinoma; OV = Ovarian carcinoma; Others = Endometrial polyps, Hydatidiform mole, Choriocarcinoma, Uterine sarcoma.

and caesarean hysterectomy when the cervix is fully dilated and the concern the patient exhibits regarding the degree of sexual satisfaction.

With respect to VH, 91 out of 93 were diagnosed as having utero-vaginal prolapse mostly third degree. It would seem therefore that the only indication for VH in our study was major degree uterovaginal prolapse. Currently, there is a changing attitude amongst gynaecologists in favour of VH in the absence of prolapse for benign conditions even with enlarged uteri<sup>17</sup>. Many studies have shown that VH is associated with a decreased incidence of complications, shorter length of hospital stay and convalescence, reduced hospital charges and better quality of life outcomes.<sup>18-19,21</sup>

This notwithstanding, abdominal hysterectomy continues to be the preferred route by many gynaecologists. This signifies a disparity between evidence based medicine and current clinical practice. The reasons may be that the practice styles, training, habits and preferences of gynaecologists dictate the route of hysterectomy rather than a consideration of the most appropriate route for a particular woman. Although many gynaecologists acknowledge that abdominal hysterectomy is the choice for more serious pathologies, it has been reported that abdominal and laparoscopic hysterectomies are being performed for less serious diseases for which the vaginal route is clearly appropriate.<sup>20</sup>

The most common pathology of the uterus in this study was uterine fibroids (25.8%) followed by adenomyosis (22.7%). Another study<sup>21</sup> from Riyadh, Saudi Arabia revealed that the indication for hysterectomy was uterine fibroids in 18.5% of the cases. The frequency of uterine fibroids in hysterectomy specimens in this study was much lower than those reported from USA, (78%)<sup>22</sup> and Nigeria (48%).<sup>9</sup> It is higher than that from Sweden(8%)<sup>23</sup>. This is in keeping with the belief that there are geographical and racial influences on the prevalence of uterine fibroids. Simultaneously, we found a higher incidence of adenomyosis than that reported by other studies.<sup>24,25</sup> The present study showed that adenomyosis without fibroids occurred in 47 (14.8%) and in association with fibroids in 16 (5%) of the patients. These findings negate the general opinion that adenomyosis occurring alone is very rare in large uteri and occurs alone in a minority of smaller uteri.<sup>26</sup> The fact that our diagnosis was made on histopathological specimens rather than ultrasound could explain a probable underdiagnosis of adenomyosis on ultrasound and overdiagnosis of uterine fibroids. In the study by Bergholt et al.,<sup>24</sup> they showed that there was a statistically significant association between adenomyosis and endometrial hyperplasia and suggested a common aetiology for both pathologies. In our study however, three patients with adenomyosis also had endometrial cancer while 2 patients had ovarian cancer. A similar relationship has been confirmed by other workers.<sup>27</sup> The peak age incidence of most pathological conditions of the female reproductive tract including uterine fibroids, adenomyosis and endometrial cancer was in the 41-50 -year age group in our study. It is of interest to note that 18 cases (19.7%) of fibroids and 24 (33.8%) of adenomyosis were found in post menopausal women, most of whom had no history of post menopausal bleeding. Aboyeji et al.,<sup>28</sup> reporting from Ilorin, Nigeria found that 78% of their cases of fibroids occurred between the ages of 30-44years and were mostly among women of low parity. In the present study, about 48% of the women with fibroids were the 41-50 yrs-year age group.

In conclusion, the frequency of hysterectomy performed at our hospital has remained stable over the past eight years while vaginal hysterectomy was performed exclusively for prolapse. At the same time uterine fibroids and adenomyosis, the most common pathological conditions of the uterus had their maximum frequency in the 41-50- year age group.

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