

# INDICATIONS AND COMPLICATIONS OF HYSTERECTOMY IN MAIDUGURI, NORTHEASTERN NIGERIA

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**Objective:** This study intends to determine the indications and complications of hysterectomy in a typical teaching hospital in tropical Africa and then to make appropriate recommendations.

**Setting, Materials and Methods:** The records of 180 out of 240 patients who had hysterectomy over a ten year period (January 1989-December 1998) at the University of Maiduguri Teaching Hospital formed the basis of the study. Details of their mode of clinical presentation, indications for surgery and postoperative course and complications were extracted from their records and analysed. The SPSS statistical software package was used for the analysis of the data.

**Results:** The mean age of the patients was  $48.5 \pm 7.4$  years with a range of 24 - 60 years and 66.6% aged 40 years and above. The mean parity among the patients was  $4.3 \pm 3.7$  with a range of 0 - 13. Thirty six (20%) were nulliparous. The indications for hysterectomy are uterine fibroids 114 (63.3%), utero vaginal prolapse 19(10.6%) and ovarian tumours 16 (8.9%). Dysfunctional uterine bleeding accounted for 2(1.1%) cases. There were 2 cases of ruptured uterus. One patient (0.6%) had endometrial cancer, while 2(1.1%) had atypical endometrial hyperplasia.

Total abdominal hysterectomy, either alone or in combination with bilateral/ unilateral oophorectomy and omentectomy, accounted for 160 (88.9%) cases. There was one case of subtotal hysterectomy from ruptured uterus following prolonged obstructed labour. Vaginal hysterectomy accounted for 19(10.6%) cases. The leading complications in this series are anaemia 34 (10.9%), abdominal wound dehiscence 20(11.1%), wound sepsis 14 (7.8%), febrile morbidity and post hysterectomy symptoms 12(6.7%). All cases of complete wound dehiscence occurred in association with abdominal hysterectomy. The type of incision and the level of experience of the surgeon (consultant and registrar) did not significantly affect the incidence of complications in this study.

**Conclusion:** Uterine fibroids, uterovaginal prolapse and ovarian tumours are the leading indications for hysterectomy in our environment. Anaemia, abdominal wound dehiscence, sepsis and febrile morbidity are the commonest complications. Vaginal hysterectomy is associated with low treatment costs, shorter hospital stay and less morbidity when compared with abdominal hysterectomy. Therefore, whenever possible, vaginal hysterectomy should be done in preference to abdominal hysterectomy.

**Keywords:** Indications, complications, hysterectomy, tropical Africa.

## Introduction

Approximately 590,100 hysterectomies are performed every year in the U.S.A<sup>1</sup> and 72,821 were performed in the UK in 1994-1995<sup>2</sup>. This renders hysterectomy the commonest major gynaecological operation, with the vast majority performed for benign diseases. The procedure may be total, when both the body of the uterus and the cervix are removed or subtotal, when the cervix is conserved. Subtotal hysterectomy is an unpopular procedure, accounting for only 1.47% of hysterectomies<sup>1</sup>. This is largely due to a perceived risk of cervical stump cancer.

The commonest indication for hysterectomy worldwide is uterine fibroid<sup>3,4,5</sup>. In the United Kingdom the most frequent indication for hysterectomy in the reproductive years is menstrual dysfunction<sup>6</sup>. Similarly a series from the United States showed that bleeding was the leading indication for hysterectomy followed by fibroids and genital prolapse<sup>7</sup>. In the United Kingdom, a woman's lifetime risk of hysterectomy is around 20%<sup>8</sup>. The indications for hysterectomy in this study population may

not be the same, especially considering the high prevalence of fibroids among Africans. There is also an aversion to hysterectomy as it is viewed as a severe mutilation to womanhood<sup>9</sup>. In addition, hysterectomy like any other surgery is associated with its own morbidity and possible mortality. However, vaginal hysterectomy is associated with much lower morbidity rate (24.5%) compared to the 42.8% of abdominal hysterectomy<sup>10</sup>.

This study was to determine the indications and complications of hysterectomy in a Tertiary Health institution in North East region of Nigeria and make appropriate recommendations.

## Setting, materials and methods

A review of the indications and complications associated with hysterectomy at the University of Maiduguri Teaching Hospital over a ten-year period, from January 1989 to December 1998, was conducted. One hundred and eighty (180) of the 240 case records for hysterectomy were available for the study. The medical records of patients were

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retrieved and analysed for clinical presentation, indications for hysterectomy, type of hysterectomy and complications following the procedure. These were analysed using SPSS statistical software.

### Results

One hundred and eighty out of 240 hysterectomies performed during the study period were reviewed. The mean age of the patients was 48.57.4 years with an age range of 24-60 years, 66.6% were aged 40 years or above. Thirty six (20.0%) were nulliparous as shown on table 1. All the nulliparae, except three who had hysterectomy, irrespective of the route, were aged over 40 years. They all had menorrhagia secondary to multiple uterine fibroids and distorted uteri making myomectomy difficult. Table 2 shows that uterine fibroid was the commonest indication for hysterectomy accounting for 114 (63.3%) cases, followed far behind by 19 (10.6%) and 16 (8.9%) cases of utero-vaginal prolapse and ovarian tumours respectively. Dysfunctional uterine bleeding accounted for only 2 (1.1%) cases, as did ruptured uterus. 2 (1.1%) had atypical endometrial hyperplasia and 1(0.6%) had endometrial cancer. Only 19 (10.6%) patients had vaginal hysterectomy. Total abdominal hysterectomy, either singly or in combination with bilateral/unilateral oophorectomy and omentectomy, accounted for 160 (88.9%) cases. There was only one case of sub-total hysterectomy from a ruptured uterus following prolonged obstructed labour.

The mean duration of hospital stay was 11.2 days as shown on table 3. Anaemia was the commonest complication accounting for 34 (18.9%) cases. Table 4 shows that statistically significant associations exist between age, parity and duration of hospital stay with route of surgery with p-values of 0.01, 0.007 and 0.00007 respectively. The duration of hospital stay was significantly less among those who had a vaginal hysterectomy. Also, significantly older women had vaginal hysterectomy, probably indicating further association between age and prolapse. There are significantly more multiparous women, particularly grand multipara, among those who had vaginal hysterectomy. But there was no statistically significant association between the requirement for transfusion with the route of hysterectomy  $p=0.84$ .

Table 5 Shows that there was no statistically significant association between the route of hysterectomy and the complications, incision type and wound dehiscence and the abdominal wound dehiscence and the surgeon p-values of 0.27, 0.14 and 0.37 respectively. However clinically those that had vaginal hysterectomy had minor complications such as vaginitis, anaemia, urinary tract infection, and febrile morbidity. While those that had abdominal hysterectomy had more serious complications such as wound sepsis, wound dehiscence, vesico vaginal fistula, delayed haemorrhage, deep venous thrombosis, disseminated intravascular coagulation, and incisional hernia in addition to urinary tract infection and anaemia. There was a statistically significant association between route of approach and diagnosis ( $X^2 = 167.09$ ,  $df = 8$ ,  $P = 0.00$ ), with utero-vaginal prolapse being the exclusive indication for a vaginal approach. All patients with utero-vaginal prolapse, who also had vaginal hysterectomy, were grand multiparae aged over 40 years.

Table 6 shows a direct relationship between number of consultants and hysterectomies,

**TABLE I. AGE AND PARITY**

1.	AGE	NUMBER	%
	20-29	7	3.9
	30-39	53	29.4
	40-49	83	46.1
	50-59	33	18.3
	≥ 60	4	2.2
	<b>Total</b>	<b>180</b>	<b>100</b>

Mean = 48.5±7.4, Range = 24-60

2.	PARITY	NUMBER	%
	0	36	20.0
	1-4	50	27.8
	5-9	69	38.3
	10	22	12.3
	Not stated	3	1.7
	<b>Total</b>	<b>180</b>	<b>100</b>

Mean =4.3±3.7, Range = 0-13

**TABLE 2  
INDICATIONS FOR HYSTERECTOMY AND TYPE  
OF SURGERY**

1.	INDICATIONS	NUMBER	%
	Uterine fibroids	114	63.3
	Utero-vaginal prolapse	19	10.6
	Ovarian tumours	16	8.9
	Chronic pelvic pains	7	3.9
	Cervical HPV-associated Changes	8	4.4
	Dysfunctional uterine bleeding	2	1.1
	Endometrial polyps	2	1.1
	Ruptured uterus	2	1.1
	Endometrial hyperplasia	2	1.1
	Others	8	4.4
	<b>Total</b>	<b>180</b>	<b>100</b>

2.	TYPES OF SURGERY	NUMBER	%
	TAH	73	40.6
	TAH + BSO	59	32.8
	TAH + LSO	18	10.0
	TAH + RSO	5	2.8
	TAH + BSO + Omentectomy	5	2.8
	Sub-total hysterectomy	1	0.6
	Vaginal hysterectomy	19	10.6
	<b>Total</b>	<b>180</b>	<b>100</b>

TAH Total abdominal hysterectomy  
BSO Bilateral salpingo-oophorectomy  
LSO Left salpingo-oophorectomy  
RSO Right salpingo-oophorectomy

**TABLE 3**  
DURATION OF HOSPITALISATION AND  
COMPLICATIONS

1.	DAYS	NUMBER	%
	7	39	21.7
	8-14	112	62.2
	15-21	15	8.3
	22	14	7.8
	<b>Total</b>	<b>180</b>	<b>100</b>

Mean = 11.2

**2. COMPLICATIONS**

Anaemia	34	18.9
Abdominal wound Dehiscence		
Partial	12	6.7
Complete	8	4.4
Wound sepsis	14	7.8
Febrile morbidity	12	6.7
Post hysterectomy symptoms	12	6.7
Bladder injury	4	2.2
Urinary tract infection	3	1.7
Genital sepsis	2	1.1
Incisional hernia	2	1.1
Others	8	4.4

**TABLE 4**  
COMPARISON OF ROUTES OF HYSTERECTOMY  
WITH VARIOUS FACTORS

1.	AGE	ABDOMINAL	VAGINAL	TOTAL
	20-29	58	2	60
	40-49	75	8	83
	50	28	9	37
	<b>Total</b>	<b>161</b>	<b>19</b>	<b>180</b>

$X^2 = 10.82$ ,  $df = 2$ ,  $P = 0.005$

**2. PARITY**

	0	36	0	36
	1-4	47	3	50
	5	75	16	91
	<b>Total</b>	<b>158</b>	<b>19</b>	<b>177*</b>

\*The parity was not stated in 3 patients.  
 $X^2 = 9.95$ ,  $df = 2$ ,  $P = 0.007$

**3. TRANSFUSION**

	No	97	1	108
	Yes	64	8	72
	<b>Total</b>	<b>161</b>	<b>19</b>	<b>180</b>

$X^2 = 0.04$ ,  $df = 1$ ,  $P = 0.84$

4. HOSP. STAY	ABDOMINAL	VAGINAL	TOTAL
$\leq 7$	27	12	39
$\geq 8$	134	7	141
<b>Total</b>	<b>161</b>	<b>19</b>	<b>180</b>

$X^2 = 21.55$ ,  $df = 2$ ,  $P = 0.000004$

**TABLE 5**  
COMPARISON OF COMPLICATIONS WITH ROUTE,  
INCISION TYPE AND SURGEON

Complications	Abdominal	Vaginal	Total
No	107	15	122
Yes	54	4	58
<b>Total</b>	<b>161</b>	<b>19</b>	<b>180</b>

$X^2 = 1.25$ ,  $df = 1$ ,  $P = 0.27$

Wound Dehiscence	Transverse	Longitudinal	Total
No	44	97	141
Yes	3	17	20
<b>Total</b>	<b>47</b>	<b>114</b>	<b>161</b>

$X^2 = 2.23$ ,  $df = 1$ ,  $P = 0.14$

Wound Dehiscence	Consultant	Registrar	Total
No	105	36	141
Yes	13	7	20
<b>Total</b>	<b>118</b>	<b>43</b>	<b>161</b>

$X^2 = 0.80$ ,  $df = 1$ ,  $P = 0.37$

**TABLE 6**  
ANNUAL DISTRIBUTION OF HYSTERECTOMIES  
AND CONSULTANTS

Years	Abdominal	Vaginal	Consultants
1989	8	1	1
1990	11	1	1
1991	10	2	2
1992	16	2	3
1993	3	1	3
1994	24	3	4
1995	25	3	5
1996	25	3	5
1997	13	1	6
1998	6	2	6

**Discussion**

The mean age for hysterectomy in this study was  $48.5 \pm 7.4$  years. This falls into the age bracket recommended for hysterectomy. In general, women who are over 40 years have completed family size or are perimenopausal are offered hysterectomy for benign conditions such as uterine fibroids and utero vaginal prolapse<sup>9, 11, 12</sup>. Our findings contradicts earlier reports that women who are nulliparous hardly accept hysterectomy in Africa even if they have indications for such, example huge and multiple fibroids<sup>12</sup>, as 20% of the patients in this study are nulliparous. However all were of advanced age except three (3%) who were age 30-39 years and had severe menorrhagia and

anaemia, one being complicated by heart failure, debilitating lower abdominal pain, huge and multiple fibroids distorting the normal anatomy of the uterus and making myomectomy extremely difficult.

Most women undergoing hysterectomy do not have major extra uterine disease, dysfunctional uterine bleeding and myomas typically being the indications for surgery in more than two thirds of cases<sup>4</sup>. The commonest indication for hysterectomy in this study was uterine fibroids 63.3%. This finding was in agreement with what others earlier reported<sup>3,4,5</sup>. This was followed far behind by 19 (10.6%) and 16 (8.9%) cases of utero vaginal prolapse and ovarian tumours respectively. Contrary to what is obtained in the United Kingdom where menstrual dysfunction is the commonest indication for hysterectomy in the reproductive years<sup>6</sup>, the contribution of dysfunctional uterine bleeding to hysterectomy in this series was only 2(1.1%) cases. Only 2(1.1%) cases had hysterectomy on account of ruptured uterus from obstructed labour. This brings to the fore the stark reality that to be able to avert maternal death in the tropics many at times obstetricians would be confronted with the need to decide at a point, and early enough to perform hysterectomy in women who may rupture their uteri in labour or rarely in cases of intractable obstetric haemorrhage.

Total abdominal hysterectomy with bilateral / unilateral oophorectomy and omentectomy, accounted for 160 (88.9%) cases, there was only one case of subtotal hysterectomy from ruptured uterus following prolonged obstructed labour. Vaginal hysterectomy accounted for 19(10.6%) cases. This study has shown that much lower vaginal hysterectomies were done in our centre compared to what is obtained in the United States where up to 25-30% of vaginal hysterectomies are performed.<sup>13, 14</sup>. This shortcoming has been noted despite the fact that vaginal hysterectomy has been shown to carry few complications than abdominal hysterectomy. It is suggested that practice style and personal preference of the surgeon plays a significant role in selection of hysterectomy type<sup>15</sup>. Also Gynaecologist with limited residency training and experience may lack confidence in their ability to perform vaginal surgery<sup>16</sup>. The presence of huge fibroids as seen in our patients and associated pelvic adhesions, which are not uncommon findings, also favour abdominal route for hysterectomy in the tropical setting.

The mean postoperative hospital stay was 11.2 days in this study. Though 50% of the patients were discharged on the eighth postoperative day. This long duration of hospital stay post operatively may not be unconnected to our policy of stitch removal on the 7<sup>th</sup> post operative day and observing the patient for another 24 hours before discharge. Patients with significant postoperative morbidity have a longer hospital stay. Mostly those who stayed beyond 21 days are cases of malignant conditions that needed further therapy for the surgical indication of hysterectomy and a case of vesico cutaneous fistula that was one of the complications noted. Sagay et al<sup>17</sup> reported a

mean hospital stay of 8.5 days and 5 days after vaginal hysterectomy by William<sup>18</sup>.

The morbidity rate for this series was high with anaemia accounting for 34 (18.9%) of cases. Our high incidence of anaemia post operatively might be as a result of going for surgery with a pack cell volume which is just barely acceptable for anaesthesia (30%-35%) due to long standing bleeding from the fibroids. This is compounded by the general apathy to donate blood and accept transfusion among our population for socio cultural reasons. Thus the high prevalence of postoperative anaemia. This was followed by partial wound dehiscence in 12(6.7%) cases and complete wound dehiscence (burst abdomen), which occurred in 8 (4.4%) cases. This was significantly higher than 1% quoted for abdominal operations<sup>19</sup>. The risk factors identified for this wound dehiscence were postoperative anaemia, wound haematoma, and wound sepsis. Contrary to expectations and other reports<sup>20</sup>, this study did not find any significant difference in complications in surgeries performed by consultants and Senior registrars, this may be as result of the unit policy of allowing only very experienced Senior registrars, some of whom are awaiting consultant appointment to do such operations and in other instances under strict consultant supervision and assistance. This may equally explain the lack of statistically significant difference in complications between longitudinal incisions and transverse abdominal incisions. Although clinically transverse incisions were associated with only partial wound dehiscence in this study and therefore is preferable to longitudinal incision as was shown elsewhere<sup>20</sup>. All the cases of burst abdomen occurred between the 7<sup>th</sup> and 8<sup>th</sup> postoperative day, which coincides with the time of stitch removal. Fourteen (7.8%) cases of wound sepsis were however less than the 11.45% reported from North central Nigeria<sup>17</sup>. Apart from the failure to use perioperative antibiotics in elective surgeries the presence of pelvic inflammatory disease which may co exist with fibroids may be another risk factor for febrile morbidity and wound sepsis. Another important presentation noted post operatively during follow up was post hysterectomy symptoms or syndrome which consisted of depression, tiredness, headaches, dizziness, insomnia, urinary symptoms and vague pain at the operation site. This was seen in 12 (6.7%) cases. This was consistent with post hysterectomy syndrome<sup>21</sup>, febrile morbidity was seen in 12 (6.7%) cases. The rarer complications grouped together as others were however a serious cause of morbidity and were seen in 1 (0.6%) case each and are ureteric injury, vesico-cutaneous fistula, vault prolapse, delayed haemorrhage, DVT (deep venous thrombosis) D.I.C (disseminated intravascular coagulation) and drug reaction.

The study showed that there is a significant association between the route of hysterectomy and the duration of hospital stay ( $P= 0.000$ ), which is shorter in the vaginal approach, this finding was in agreement with an earlier finding<sup>9</sup>. Significantly older and more parous patients had vaginal hysterectomy in this study as was

similarly reported<sup>9, 22</sup>. This study showed that there was no statistical significance in terms of requirement for blood transfusion ( $P= 0.85$ ) and complications ( $P= 0.26$ ) in relation to the route of hysterectomy. Though statistically no significant difference in complications between routes of hysterectomy but clinically abdominal hysterectomy in this series is associated with increased rate of febrile morbidity, anaemia, abdominal wound dehiscence, operative site infection, thromboembolic events, bladder and ureteric injury, this was also noted earlier<sup>23</sup>. On the contrary the complications associated with vaginal hysterectomy in this study are mostly mild or in a case not related to surgery, these were two cases of vaginitis, a case of urinary tract infection and post-operative drug reaction. Overall this difference made vaginal hysterectomy a less costly operation (shorter hospital stay, minimal risk of serious post operative complications and morbidity). Thus vaginal hysterectomy is also associated with better quality life outcomes. There was no mortality recorded in this series. Total abdominal hysterectomy in competent hands has a mortality of 0.2% in 1,000 consecutive hysterectomies<sup>3</sup>.

#### RECOMMENDATIONS

Since it has been shown that vaginal hysterectomy resulted in better quality of life outcomes and lower utilization of hospital services and costs compared to abdominal hysterectomy, it therefore follows that in low resource settings, especially the tropics conscious efforts should be made to maximize the proportion of hysterectomies performed vaginally irrespective of the indications. In view of this, gynaecologists especially in the tropics need to be familiar with surgical techniques for dealing with non-

prolapsed uteri, uterine leiomyomas and oophorectomy. There should be minimum acceptable level of training with

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