

Morbidity of total abdominal hysterectomy at the University of Maiduguri Teaching Hospital, Maiduguri, Nigeria

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Abstract

Background: Total abdominal hysterectomy is a commonly performed gynaecological procedure. Although it is safe, it can still be associated with development of complication. The aim of this study was to determine morbidity associated with total abdominal hysterectomy in our environment.

Method: All cases of total abdominal hysterectomy done over a five-year period (January 2003–December 2006) at the University of Maiduguri Teaching Hospital (UMTH) were reviewed.

Information was obtained from the patients' case notes, gynaecology ward, and theatre records. The complications of the procedure were determined. Multiple logistic regression was used to find the factors that were independently associated with development of complications.

Results: During the study there were 101 cases of total abdominal hysterectomy out of 729 gynaecological operations, a rate of 13.8%. In majority of the cases 56(68.3%) the indication of the hysterectomy was uterine fibroid (symptomatic). Overall 37(45.1%) experience some form of complication out of which 26(70.3%) was febrile morbidity. Finding enlarged uterus intraoperatively {OR(95%CI)= 14.5(1.84-114.6), $p=0.011$ }, blood transfusion {OR(95%CI)= 31.1(1.35-718.8), $p=0.032$ } and postoperative PCV <30% {OR(95%CI)= 9.63(1.14-81.3) $p=0.037$ } were found to be significantly associated with development of complication.

Conclusions: Total abdominal hysterectomy was associated with development of complications and enlarged uterus, increasing parity independent risk factors for development of the complication

Key Words: Total abdominal hysterectomy, Indications, Complications, UMTH.

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Introduction

The goal of every surgical procedure is to obtain the

best clinical outcome while avoiding complications. Hysterectomy is the surgical removal of the uterus and cervix (Removal of the adnexae might or might not be performed in addition)¹. This procedure can be performed using one of three main approaches: abdominal hysterectomy (AH), vaginal hysterectomy (VH) or laparoscopic hysterectomy (LH)^{1,2}. Although research indicates that vaginal hysterectomy is safer and cheaper than total abdominal hysterectomy, the latter still accounts for 60.80% of all hysterectomies the world wide³.

Hysterectomy is indicated for women with dysfunctional uterine bleeding, uterine fibroids, prolapse, endometriosis, adenomyosis, and pelvic pain, premalignant changes in cervix and endometrium and cancer¹.

At its outset, mortality from hysterectomy was as high as 100%, in large part due to the absence of antisepsis, blood banking, modern general anesthesia, and the attainment of standardized methodologies³. With advances in antibiotics, blood banking, and anesthesia hysterectomy can be performed safely by the skilful gynaecologist of today. In deed hysterectomy is now the commonest major gynaecological operation^{3,4}. In spite of the fact that hysterectomy is relatively safe today, it may be associated with morbidity and sometimes mortality^{5,6}. The complications of hysterectomy include among others febrile morbidities, wound infections and visceral injuries. Overall mortality rates for hysterectomy range from 0.52 per 1000⁶. Recent research appears to indicate that the most common operative complications have a reduced incidence with increasing age, but it is increased by parity and the highest risks occur among women treated for fibroids^{5,6,7}.

The aim of this study was to determine morbidity associated with total abdominal hysterectomy in our environment. The information obtained may be useful in counseling patients undergoing hysterectomy.

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Methodology

All cases of total abdominal hysterectomy done over a five-year period (January 2003–December 2006) at the University of Maiduguri Teaching Hospital were reviewed.

Information was obtained from the patients' case notes, gynaecology ward, and theatre records. The information obtained includes socio-demographic characteristics, indication for the hysterectomy, operative findings and complications.

Statistical analysis was conducted with SPSS version 13.0 (SPSS, Chicago, Ill USA). The socio-demographic characteristics, indications, and complications were recorded as numbers and percentage. Multiple logistic regression was used to find sociodemographic and intraoperative factors that were independently associated with development of complications. $P < 0.005$ was considered significant. The ethical and research committee of the University of Maiduguri Teaching Hospital approved the study.

All operations were done following the standard steps for the procedure. All patients were appropriately evaluated preoperatively and only those that satisfied a minimum criteria, PCV $>30\%$, normal E/U/Cr, achievement of control in those with medical disorders and provision of informed consent were operated. All patients were given prophylactic antibiotics.

Febrile morbidity is defined as temperature of $\geq 38^\circ\text{C}$ that remained persistent. Visceral injury is when there was a recognized laceration or other damage to internal organs like bladder or vessel requiring repair. Wound infection defined as occurrence of purulent discharge from the wound site and wound dehiscence disruption of any/all layers of the wound closure. Enlarged uterus is a uterine size greater than 12 weeks gestational size and being educated defined as completion of at least primary school education.

Results

During the study there were 101 cases of total abdominal hysterectomy out of 729 gynaecological operations, a rate of 13.8%. Out of the 101 cases of the total abdominal hysterectomy, 82 were available for review; a retrieval rate of 81.1%. The mean age of the study population was 45.72 years and their mean parity 2.70.9.

Table 1 showed the socio-demographic characteristic of the study population. Majority of the patients 58(70.7%) were in the age group 35-50 years. In 50% of the cases the patients were educated and 61% were Para 5 and above.

Table II showed the indications of the hysterectomy and the operative findings in the study population. In majority of the cases 56(68.3%) the indication of the hysterectomy was uterine fibroid (symptomatic). In 60 patients (73.2%) the uterus was found to be enlarged, Oophorectomy done in 56(68.3%) cases while the duration of hospital stay was >7 days in 40(48.8%) of the cases. Majority of the surgery 87.8% were performed by a consultant.

The complications of the hysterectomy in the study group were as shown in table 3. Overall 37(45.1%) experience some form of complication out of which 26(70.3%) was febrile morbidity. Visceral injury occurs in 2(5.4%) cases.

Table IV depicted multinomial logistic regression analysis of the factors associated with development of complication among the study population. Finding enlarged uterus intraoperatively {OR(95%CI)= 14.5(1.84-114.6), $p=0.011$ }, blood transfusion {OR(95%CI)= 31.1(1.35-718.8), $p=0.032$ } and postoperative PCV $<30\%$ {OR(95%CI)= 9.63(1.14-81.3) $p=0.037$ } were found to be significantly associated with development of complication while complications were significantly less likely to occur if the surgery was done by a consultant {(OR(95%CI)= 0.006(0.001-0.11), $p=<0.001$ }.

Table I: Socio-demographic characteristics of the study population

Characteristics	Number	Percentage
Age (yrs)		
<35	8	9.8
35-50	58	70.7
>50	16	19.5
Total	82	100
Education		
No	41	50
Yes	41	50
Total	82	100
Parity		
0	9	11
1-4	23	28
e5	50	61
Total	82	100
Marital status		
Single	5	6.1
Married	70	85.4
Separated	2	2.4
Widowed	5	6.1
Total	82	100

Table II: Indications of hysterectomy and operative findings of the study population

Indications	Number	Percentage
Uterine fibroid (symptomatic)	56	68.3
DUB	18	22
Cervical dysplasia	4	4.9
Others	4	4.9
Total	82	100
Operative findings		
Uterine size		
Normal	22	26.8
Enlarged	60	73.2
Total	82	100
Oophorectomy		
Yes	56	68.3
No	26	31.7
Total	82	100
Duration of hospital stay		
≤ 7 days	42	51.2
>7 days	40	48.8
Total	82	100
Cadre of surgeon		
Consultant	72	87.8
Registrar	10	12.2
Total	82	100
Blood transfusion		
Yes	66	80.5
No	16	19.5
Total	82	100
Post operative PCV		
$<30\%$	31	37.8
$\geq 30\%$	51	62.2
Total	82	100

Table III: Complications of the hysterectomy

Complications	Number	Percentage
Yes	37	45.1
No	45	54.9
Total	82	100
Type of the complication		
Febrile morbidity	26	70.3
Wound infection/Dehiscence	8	21.6
Visceral injury	2	5.4
Haemorrhage	1	2.7
Total	37	100

Table IV: Multinomial logistic regression analysis of factors associated with development of complication among the study population

Factors	Coefficient	OR(95% CI)	P-value
Age (yrs)			
<35	1.34	3.83(0.09-157.4)	0.48
35-50	-0.32	0.73(0.06-8.46)	0.80
>50	-	-	-
Parity			
e5	2.55	12.8(0.92-177.2)	0.057
<5	-	-	-
Education			
No	-0.87	0.42(0.05-3.68)	0.43
Yes	-	-	-
Indications			
Uterine fibroid (symptomatic)	0.15	1.16(0.29-4.73)	0.83
DUB	-0.14	0.87(0.05-15.99)	0.93
Cervical dysplasia	1.19	3.29(0.19-55.3)	0.41
Others	-	-	-
Uterine size			
Enlarged	2.68	14.5(1.84-114.6)	0.011
Normal	-	-	-
Oophorectomy			
Yes	0.18	1.20(0.11-13.40)	0.88
No	-	-	-
Cadre of surgeon			
Consultant	-5.15	0.006(0.001-0.11)	<0.001
Registrar	-	-	-
Blood transfusion			
Yes	3.42	31.1(1.35-718.8)	0.032
No	-	-	-

Discussions

Total abdominal hysterectomy was found to be associated with development of complications in this study and enlarged uterus, increasing parity and having to have blood transfusion were found to be independent risk factor for the development of the complication.

The mean age of the patients in this study of 45.72 years was similar to the report of other studies^{8,9}. Generally women aged 40 years and above must have probably completed their family or are perimenopausal and therefore likely to choose hysterectomy as a management option when they develop benign gynaecological condition affecting the uterus. In fact majority of the patients (61.5%) were Para 5 and above further buttressing the possibility of completed family size.

Similar to other studies^{8,9,10} uterine fibroid (symptomatic) was the commonest indication for the hysterectomy in this study. This may be as a result of the relatively high incidence of uterine fibroid in Negroid race. Dysfunctional uterine bleeding although previously reported as relatively uncommon in the Negroid race⁸ was the second leading indication.

Although majority of our patients (80.5%) had blood transfusion most of it was of an autologous donated

blood which is normally transfused back to the donor as post operative PCV <30% (the lowest threshold for homologous blood transfusion) was only seen in 37.8% of the cases and only one patient developed what was classified as haemorrhage (intraoperative blood loss that requires urgent transfusion to prevent possible adverse outcome).

Although total abdominal hysterectomy is safe, it can still be associated with complications and 45.1% of our study population developed some form of complication. This was similar to the report of Oladapo from Sagamu Nigeria¹¹ and Varol et al from Australia¹² but higher than the 17.1% reported by Juha et al from Finland. The higher complication rate may be related to inclusion of mild complications such as febrile morbidity which accounted for 70.3% of the complications. Frequently, febrile morbidity following total abdominal hysterectomy is unexplained and resolves spontaneously but abdominal wound and other infection had to be ruled out if the fever persisted¹³ but wound infection accounted for only 21.6% (8 patients) of the complications in this study suggesting that majority of the febrile morbidity were not related to infection and were mild.

Lot of the morbidity associated with total abdominal hysterectomy was related to the removal of the cervix and urinary tract injury during the procedure usually occurs as a result of mobilization of the bladder to remove the cervix. There were two (2) cases of visceral injury in this study, all bladder cystotomy that were repaired intraoperatively without any sequelae.

Because total abdominal hysterectomy is the commonest performed gynaecological procedure and is safe, there is the need to identify factors that are associated with development of complications during the procedure. This will help to devise means of reducing morbidity and improving outcome since majority of the procedure are performed for benign conditions and the fundamental aim was not to save lives but improve quality of life. Recent research appears to indicate that the most common operative complications have a reduced incidence with increasing age because younger women have more vascular pelvises³ but age was not found to be associated with development of complication in this study. Similarly increasing parity was said to be associated with development of complication of hysterectomy and in this study parity =5 was tending toward being significant as determinant of developing complication {OR (95%CI)=12.8(0.92-177.2), p=0.057}. In reality, the proximity of other vital structures contributes to the

complexity and to the potential for complications of abdominal hysterectomy and women of high parity might have subtle alteration of the pelvic anatomy as a result of stretching of the uterine supports with repeated pregnancies. Most probably because of same reason enlarged uterus was found to be independently associated with development of complication in this study {OR (95%CI) = 14.5(1.84-114.6), p=0.011}. Also an enlarged uterus is more vascular and its removal might be more difficult compare a normal size uterus.

As expected blood transfusion was found to be an independent risk factor for development of complication in this study {OR (95%CI) = 31.1(1.35-718.8), p=0.032}. Blood transfusion is associated with reduction of immunity and it is not without its own independent risk^{14,15}. Similar to the report of other study

¹⁶, compare to the procedure performed by registrars the hysterectomy performed by a consultant were found to be less likely to be associated with development of complications in this study {OR (95%CI)= 0.006(0.001-0.11) p,0.001}. This could be explained by the fact that the registrars though under supervision are still in the learning curve of the procedure.

This study showed that total abdominal hysterectomy was associated with development of complications and enlarged uterus, increasing parity and having to have blood transfusion were found to be independent risk factor for development of the complication. It is recommended that all effort should be made to prevent the requirement of blood transfusion in patients undergoing total abdominal hysterectomy and extra caution should be exercised in patient with high parity and enlarged uterus.

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