

## DETERMINANTS OF CHOICE OF SURGICAL MANAGEMENT FOR UTERINE FIBROIDS IN A TERTIARY HOSPITAL IN SOUTHERN NIGERIA

Osaikhuwumwan James A<sup>1</sup> and Osazee kehinde<sup>1</sup>

### ABSTRACT

To determine the incidence, pattern of clinical presentation and patients' characteristics associated with the choice of surgical management of uterine fibroids, a retrospective survey of all surgically managed cases of uterine fibroids was conducted. There were 420 cases of uterine fibroids which constituted 10.3% and 17.6% of new gynaecological admissions and surgeries respectively. The common presentation was abdominal swelling (70%) and/or menorrhagia (63%). Types of surgical management conducted during the study period were abdominal myomectomy and hysterectomy (71.4% (300) and 28.6% (120) patients respectively). The size of fibroid did not influence the surgical treatment option but increasing age and parity were positively associated with hysterectomy as choice of surgical management ( $p=0.001$ ). Further analysis showed that parity demonstrated an independent association with choice of surgery as low parity had more of myomectomy compared hysterectomy regardless of size of fibroid(89/109(81.7%) vs 20/109(18.3%),  $p=0.001$ ).

While age and parity are identified determinants of type of surgery for uterine fibroids, the need/desire for future childbearing as reflected by low parity is an overriding influencing factor for the choice of a conservative surgical method (Myomectomy) as the commoner mode of treatment in our locale.

### INTRODUCTION

Uterine leiomyomas are the most common tumour found in women of reproductive age group, with reported incidence among women to be 25%-40%[1-3]. Surgical management for uterine fibroids is usually employed when symptoms exist; the symptoms and severity usually depends upon the size, position and number of fibroid present.[3-5]. Globally, hysterectomy and myomectomy are the

main surgical options for treatment of uterine fibroids with the choice of treatment being determined by individual patients' characteristics. Generally, Hysterectomy has been considered the traditional and definitive treatment for symptomatic fibroids with uterine fibroids accounting for 20–40% of all hysterectomies [4,6,7].

Hysterectomy is generally recommended if the patient's family size is considered adequate, very huge fibroids or when there is no cultural or individual objection to hysterectomy. This is because with hysterectomy a cure is achieved as it prevents recurrence of fibroid mass[6,8,9]. Myomectomy on the other hand is reserved for cases where preservation for reproductive function is desired. Some workers have observed that though myomectomy may be technically more

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**KEYWORDS:** uterine fibroids, surgery, myomectomy, hysterectomy, fertility desires

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**Osaikhuwumwan James A<sup>1</sup> and Osazee kehinde<sup>1</sup>**

<sup>1</sup>; Department of Obstetrics and Gynaecology  
College of Medical Sciences, University of Benin  
Benin–City, Nigeria.

#### \* Correspondence

Osaikhuwumwan James A  
Department of Obstetrics and Gynaecology  
University of Benin, Nigeria.  
**Email:** james.osaikhuwumwan@uniben.edu

difficult often time consuming and a greater risk of haemorrhage compared to hysterectomy, with experience myomectomy has been shown to be effective and carry peri operative risks comparable with hysterectomy[5,9-11] Other surgical methods where facilities are available include laparoscopic and hysteroscopic myomectomy or hysterectomy for selected patients,[12-14] however in resource constraint setting like ours open surgery still dominates. As to what could be the best surgical option for patient with uterine fibroid, keeping in view her sexual and reproductive needs, there is still no consensus[7,12,15]; the argument revolves around factors such as the need for preservation of uterus, operative complications, need for blood transfusion and post operative morbidity. From the foregoing we sought to review surgically managed cases of uterine fibroid in our community with a view to determining factors which influences the choice of surgical procedure offered to patients.

## **METHODOLOGY**

All women with uterine fibroids that were surgically managed at the University of Benin Teaching Hospital, Benin City, Nigeria over a five year period, 1<sup>st</sup> January 2008– 31<sup>st</sup> December, 2012 were retrospectively reviewed. The cases were identified from the ward admission and theatre registers and their case notes obtained from the hospital medical records department. Data extracted from the case notes included the socio demographic characteristics, clinical presentation, mode of management, intra and post-operative morbidities and duration of hospital stay. Uterine sizes corresponding to 20 weeks gestation or more were regarded as “huge” fibroid.[3,5] Anaemia was present when the packed cell volume, PCV was less than 30%.[16]

This data were analyzed using SPSS version 2007 statistical package and INSTAT graph pad as appropriate.. Degrees of statistical significance were independently determined using the Yates corrected test for two groups with p values of less than 0.05 considered as significant.

## **RESULTS**

During the period reviewed, there were 4,103 new gynaecological admissions and 2,387 major gynaecological surgeries, of these, four hundred and twenty (420) cases of uterine fibroids were surgically managed representing 10.2% of all new gynaecological admission and 17.6% of all major gynaecological surgeries.(Fig 1) Table I & II shows the demographic and clinical presentation of patients; The age of patients ranged between 15 – 54 years with a mean of 37.4 years. Age group was bimodal: 30 – 34(27.1%) and 35 – 39(25.7%). The patients were predominantly of low parity i.e. Para 0 – 2, 258(64.5%) while grand multiparae( $\geq 5$ ) were 65 (16.3%). The common presenting symptoms were menorrhagia and abdominal swelling (accounting for 70% and 63% of mode of clinical presentation respectively). Uterine sizes less than 20 weeks gestation was observed in 267(63.6%) women while 153(36.4%) had uterine sizes considered as huge i.e.  $\geq 20$  weeks.

Myomectomy was the operation of choice in 300 patients (71.4%) while 120 patients (28.6%) had total abdominal hysterectomy. In table III the association between choice of surgical management with age, parity and size of uterine fibroids was analyzed. Increasing age and parity had an inverse relationship with myomectomy as majority of the patients 40 years and above and those with parity

**Table I:** Distribution of Patients with uterine fibroids by age

<b>Age(yrs)</b>	<b>Number</b>	<b>Percentage</b>
< 20	2	0.5
20 – 24	4	1.0
25 – 29	40	9.5
30 – 34	114	27.1
35 – 39	108	25.7
40 – 44	88	21.0
≥ 45	64	15.2
<b>Total</b>	<b>420</b>	<b>100</b>

**Table II:** Clinical presentation of patients with uterine fibroids

<b>Symptom/Sign</b>	<b>Number</b>	<b>Percentage (%)</b>
Abdominal swelling	266	63
Menorrhagia	294	70
Infertility	112	26.7
Abdominal pain	154	36.7
Pressure symptoms (Urinary & Bowel)	56	13.3

Some patients had more than one symptoms and signs.

**Table III: Association between Demographic/clinical Variables and Surgical Treatment**

<b>Age (yrs)</b>	<b>Myomectomy Number (%)</b>	<b>Hysterectomy Number (%)</b>	<b>P value</b>
> 20	7 (0.7%)	- (0%)	
20 – 24	4 (1.3%)	- (0%)	
25 – 29	32 (10.7%)	8 (6.7%)	
30 – 34	110 (36.7%)	4 (3.3%)	
35 – 39	96 (32.0%)	12 (10.0%)	
40 – 44	48 (16.0%)	40 (33.3%)	0.0001
≥45	8 (2.7%)	56 (46.7%)	
<b>Parity</b>			
0	207 (69.0%)	2 (1.7%)	
1 – 2	44 (14.7%)	5 (4.1%)	
3 – 4	35 (11.6%)	62 (51.7%)	
≥ 5	14 (4.7%)	51 (42.5%)	0.0001
<b>Size of fibroid</b>			
< 20 weeks	191	76	
> 20 weeks	109	44	0.949

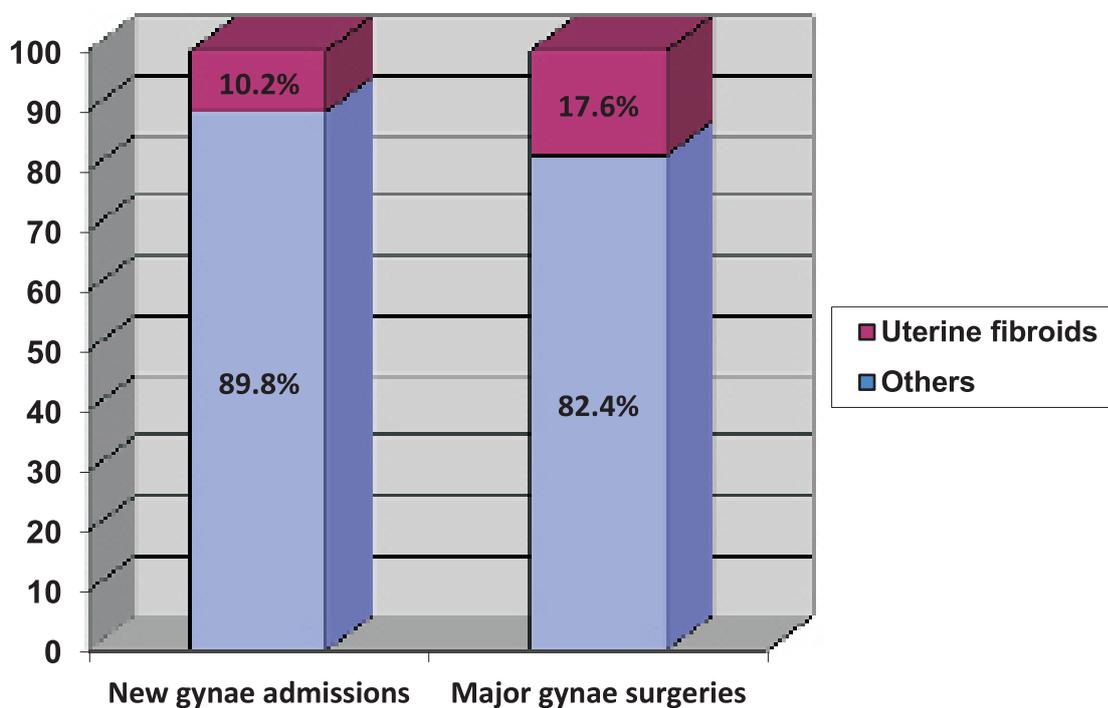
Table IV: association of age and parity with choice of surgery for huge fibroids

	<b>Myomectomy n(109)</b>	<b>Hysterectomy n(44)</b>	<b>P value</b>
<b>Age</b>			
<40	83	31	
>40	26	13	0.599
<b>Parity</b>			
0-2	89	3	
>2	20	41	0.0001

**Table V:** Post operative morbidities of the study population

Post operative Morbidities	Total Number (%)	Myomectomy Number (%)	Hysterectomy Number (%)	P-value/Remark
Anaemia	154 (34.4%)	116 (35.2%)	38 (31.9%)	0.516 NS
Pyrexia (after 48 hours)	140 (31.3%)	98 (29.8%)	42 (35.3%)	0.267 NS
Prolonged hospital stay > 7 days	56 (12.5%)	43 (13.1%)	13 (10.9%)	0.542 NS
Wound breakdown	28 (6.3%)	19 (5.8%)	9 (7.6%)	0.490 NS
Urinary tract infection	70 (15.6%)	53 (16.1%)	17 (14.3%)	0.638 NS
<b>Total</b>	<b>448 (100%)</b>	<b>329 (100%)</b>	<b>119 (100%)</b>	

Some patients had more than one morbidity.



**Fig. I:** Showing Bar chart of New Gynaecological admission and major gynaecological operation 2006 – 2010.

$\geq 3$  (80% and 94.2% respectively) had hysterectomy  $p = 0.0001$ . The uterine size however did not influence the surgical treatment option as 71.5% (191/267) with uterine fibroid  $< 20$  weeks had myomectomy compared to 71.2% (109/153) with size  $> 20$  weeks;  $p = 0.949$ . Sub-analysis of surgical options for cases of uterine fibroid  $> 20$  weeks size ( $n = 153$ ) as a function of age and parity showed that although majority of those  $< 40$  years had myomectomy it was not statistically significant; 83/109 (76.1%) vs 26/109 (23.9%),  $p = 0.599$ . However, parity demonstrated an independent association with choice of surgery, as low parity had more myomectomy compared to more of hysterectomy amongst of high parity regardless of size of fibroid (89/109 (81.7%) vs 20/109 (18.3%),  $p = 0.0001$ ). Intra operatively, the range of estimated blood loss was between 200ml – 2,200ml with a mean of  $1213.54 \pm 73.79$ mls for myomectomy while for hysterectomy, it was 150 – 1,200ml with a mean of  $569.94 \pm 49.80$ mls but this was not significant,  $p = 0.720$ . Similarly there was no significant difference in post operative morbidities with respect to choice of surgery, see table V.

## **DISCUSSION**

This study has shown that uterine fibroids are an important contributor to rate of admissions and surgery in a gynaecologic unit. An incidence of 10.2% of all new gynaecological admissions and 17.6% of all gynaecological surgeries in this study is high when compared to previous report of 8.3% in Benin and 7.8% in Zaria Northern Nigeria. [17-19] Uterine fibroids commonly affect women of reproductive age and this is supported by the finding in this study of peak age incidence in the 3<sup>rd</sup> and 4<sup>th</sup> decade of life constituting about 75% of all patients

with fibroid managed surgically and also low parity comparable to 70-80% previously reported [19,20]. The pattern of clinical presentation leading to surgical management in this study being abdominal swelling and menorrhagia were in consonance with previous literature that observed menorrhagia and abdominal swelling as the commonest modes of presentation in patients with uterine fibroid [1,20,21]

The surgical management procedures conducted over the study period were abdominal myomectomy and hysterectomy, the limitation to these two management options is reflective of the resource constraints in our practice locale which preclude availability or access to sophisticated endoscopic (laparoscopic/hysteroscopic) surgical treatment options and also due to an increased incidence of huge fibroid (about 40% in this study) compared to findings in developed society [2,5,13,20-22]. Majority of the patients in this study had myomectomy, the choice of the conservative surgical approach over hysterectomy is suggestive of the strong desire of the patients in our setting to maintain their reproductive potential and quest for childbearing despite confounding factors such as age which may mitigate fertility potentials and the size of the fibroid which should have decreased the odds for a myomectomy. [5,8,15,22] This observation is buttressed by the fact that majority of the study population were in the reproductive age and of low parity. Furthermore we observed that parity demonstrated an independent association with choice of surgery as women with lower parity tended to have myomectomy irrespective of age ( $> 40$ ) or size of fibroid ( $> 20$  weeks); this is in sharp contrast to findings from western

countries where fibroid size and age of patient are stronger determinants of choice of surgery[6,8,12,22,23]. We also observed that with regard to decision for hysterectomy age and parity were influential. The average age and parity of women undergoing Myomectomy was lower than that of Hysterectomy largely because of the desire to preserve fertility. This is in agreement with the study by Iverson et al [11] as the procedure of myomectomy sustains fertility hopes. Unmarried and Nulliparous women who are desirous of childbearing now or in future are more likely to be treated by this procedure than by hysterectomy.

Besides the aforementioned determinants(age, parity) of choice of surgical treatment for uterine fibroids, some researchers working in Africa have previously reported a strong aversion by our women towards radical surgery (hysterectomy) owing to a dislike of premature surgical menopause and a fallacious association of hysterectomy with infertility when they reincarnate.[21,24-25] This opinion may be indirectly supported in this study in attempting to explain the option for myomectomy in about 4% of grand multiparous who were mostly in their 4<sup>th</sup> decade of life. The reason for this choice aside from a subtle desire for further childbearing may be socio-cultural as peculiar to the sub-saharan Africa region. Hence most peri and post menopausal women opted for myomectomy rather than hysterectomy inspite of counselling even though the later procedure would have been the ideal [8,21,24].

Although variations exist in literature [6,11] as regards intra and post-operative complications/indicators, there was no significant difference in this study among

patient who underwent either myomectomy or hysterectomy. This was similar to the observations of Sawin and co-workers[15] The apparent similar post operative recovery/morbidity pattern observed in this study may further strengthen decision and acceptance by gynaecologist to carry out myomectomy even in the face of treatment challenges such as huge fibroid size and advanced age. Moreso, the renewed hope for fertility (even at an advanced age) birthed by the availability of In-vitro fertilization and embryo transfer (IVF-ET) services in sub-Saharan Africa cannot be ignored.

While attempting to interpret these results, we note the potential limitations of the retrospective nature of this study including the unreliability of medical record information and the non-uniformity in management guidelines/treatment protocols. Albeit we can conclude that, abdominal myomectomy and hysterectomy remain the main surgical treatment options for uterine fibroids in our environment. The overriding desire for childbearing viz a low parity strongly influences the choice for myomectomy even among older women and those with huge fibroids in our community.

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