Original Article

Uterine fibroids: Experience with 100 myomectomies in Orlu, South East Nigeria

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Abstract

Background: Uterine fibroid, over the years, has remained a major gynaecological problem in Nigeria, and although various treatment modalities exist, abdominal myomectomy has remained the mainstay of treatment for those women who want to preserve their reproductive capacity. Most of them, however, present late when the fibroids are either huge or associated with complications.

Aim: The aim of this study was to present experience with abdominal myomectomy vis-a-vis its outcome and also to show the symptoms at presentation.

Methods: This is a study of the first hundred abdominal myomectomies carried out by the author in Imo State University Teaching Hospital and St. Damian's Catholic Mission Hospital both in Orlu, Imo state, Nigeria. The myomectomies were carried out between August 2007 and September 2013. Data were recorded in a pre-surgery-prepared pro forma administered by the author prospectively. The data were analysed using SPSS version 15 and the results presented in descriptive, tabular and graphical forms.

Results: The age of the hundred women who had myomectomy ranged from 20 to 49 years. The most common symptoms these women presented with were menorrhagia (69%), abdominal mass (63%), dysmenorrhoea (33%) and infertility (33%). The sizes of the uterus on abdominal palpation ranged from not palpable (5%) to as much as 36 weeks gestation. The major myomectomy-associated complications in this study were blood transfusion rate of 86%, post-myomectomy pyrexia (44%), severe haemorrhage (25%) and post-myomectomy anaemia (24%). There was one mortality due to severe haemorrhage.

Conclusion: Menorrhagia and abdominal mass are the chief symptoms of the fibroid. Severe haemorrhage still remains a major threat to successful abdominal myomectomy and efforts should be geared towards reducing this.

Keywords: Myomectomy outcome, Orlu, South East Nigeria, symptoms, uterine fibroids

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Introduction

Uterine fibroids or fibromyomas are quite common tumours, especially in black women.[1] In Nigeria, it is the most common tumour in the female population, probably occurring in over 80% of women over the age of 25 years even if only of the size of a seedling.[2] Majority of fibroids are, however, asymptomatic and are discovered during routine ultrasound scanning for infertility management or for other reasons and

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such asymptomatic cases hardly need further attention. Only about 20% of fibroids are clinically apparent[3] and these are the ones likely to present with symptoms.

The cause of uterine fibroid still remains unknown, but certain risk factors are known to predispose to it. Risk factors for clinically significant fibroids are nulliparity, obesity, a positive family history and African racial origin.[4]

Women with fibroids commonly present with menstrual disturbances, the most common being menorrhagia,[5] probably followed by dysmenorrhoea. Intermenstrual bleeding is uncommon, and if it occurs, it is more likely in those with submucous fibroid polyp. Other common symptoms are feeling of an abdominal mass with or without menstrual disturbances and subfertility. Although the relationship between fibroids and infertility is unclear, between 27% and 40% of women with multiple fibroids are reported to be infertile.[5]

Fibroids hardly cause pain, except when they undergo degenerative changes, as commonly seen in pregnancies or when pedunculated ones undergo torsion, which is rare.

Diagnosis of fibroid is often made easily clinically from the characteristic physical findings during an abdominal examination for those that are palpable per abdomen. Where abdominal palpation does not give a clear picture of uterine fibroid, ultrasound scanning usually suffices in arriving at a diagnosis. Computerised tomography scan or magnetic resonance imaging are hardly necessary for diagnosis.

Options available for the treatment of uterine fibroids are expectant management; medical therapy; hysteroscopic myomectomy; endometrial ablation; laparoscopic myomectomy; abdominal myomectomy; abdominal, vaginal and laparoscopic hysterectomy; uterine artery occlusion and focused ultrasound.[6]

In Nigeria, like in much of Sub-Saharan Africa, laparoscopic surgeries are not common due to the dearth of trained laparoscopic surgeons. In addition, the huge fibroids that our women often present with would make laparoscopic myomectomy or hysterectomy almost impossible.

As medical treatment with gonadotropin-releasing hormone agonists or progesterone receptor modulators is out of reach of the average patient in Africa, abdominal myomectomy and hysterectomy remain the most common modes of treatment in Africa, the former preferred for patients who want to preserve their reproductive capacity or have an aversion for hysterectomy. Myomectomy is, however, not free from serious complications including mortality even under the best hands. Haemorrhage remains the major cause of morbidity and mortality. Appropriate pre-operative and intraoperative measures should be undertaken to minimise haemorrhage and its effects. This study assesses the outcome and hence the safety of myomectomy in our centre and also examines the symptom our patients often present with.

Methods

This is a study of the first hundred abdominal myomectomies carried out by the author in Orlu, South East Nigeria.

The surgeries were carried out in two hospitals, Imo State University Teaching Hospital, Orlu, and St. Damian's Catholic Hospital, Okporo, Orlu L.G.A., a prominent missionary hospital in the state. The myomectomies were carried out between August 2007 and September 2013, a 6-year period. Consent was obtained from each patient after appropriate counselling. Either a Pfannenstiel incision, midline vertical infraumbilical incision or midline vertical incision with the supraumbilical extension was used in gaining access to the abdominal cavity depending on the fundal height of the uterus. Either of the following types of anaesthesia was used: Spinal anaesthesia, general anaesthesia or spinal anaesthesia with top up general anaesthesia.

Tool for data collection was a semi-structured, researcher-administered pro forma. The author administered the pro forma. The information obtained were age, presenting symptoms, height of uterine fundus before surgery, pre-operative packed cell volume (PCV), post-operative PCV, type of abdominal incision, type of anaesthesia and post-operative complications.

Data were obtained both before and after the surgeries. As much as possible, each patient was followed up to 4 weeks following the surgery. Some were even seen up to 1 year after surgery.

The data were analysed using SPSS version 15 and the results were presented in descriptive tabular and graphical forms.

Results

Of the 100 patients, the age ranged from 20 to 49 years with a mean age of 34.4 years. The majority of the patients were in the age groups 31–35 and 36–40 as shown in Figure 1.

Figure 2 shows that 91 (91%) of the 100 patients were nulliparous and 5 (5%) were para 1 and only 4 (4%) being multiparous. Fifty-eight per cent of the women were single and 42% were married.

Table 1 shows the varying symptoms these patients presented with, menorrhagia being the most common symptom (69%) and urinary frequency, acute urinary retention, secondary

amenorrhoea and mass in the vagina being the least symptoms (1% each). 33 (33%) of the women had infertility.

Figure 3 shows the abdominal size of the fibroids on palpation. The majority were palpable per abdomen, only 5% not palpable per abdomen.

Table 1: Symptoms of the fibroids

Symptoms[+]	Frequency (%)
Menorrhagia	69 (69)
Abdominal mass	63 (63)
Dysmenorrhoea	33 (33)
Infertility	33 (33)
Abdominal pain	14 (14)
Recurrent miscarriage*	4 (4)
Intermenstrual bleeding	4 (4)
Difficulty in passing urine	2 (2)
Urinary frequency	1 (1)
Acute urinary retention	1 (1)
Secondary amenorrhoea	1 (1)
Mass in the vagina	1

*Recurrent miscarriage here is defined as two or more consecutive spontaneous abortions, [+]Some patients had more than one symptom at presentation

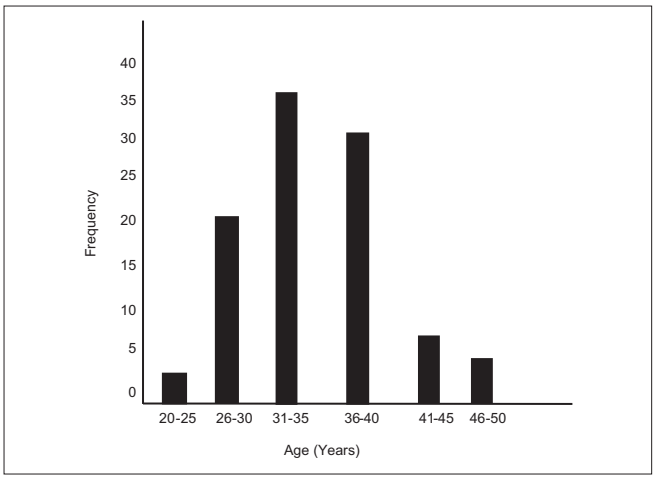

Figure 1: Age distribution of the patients

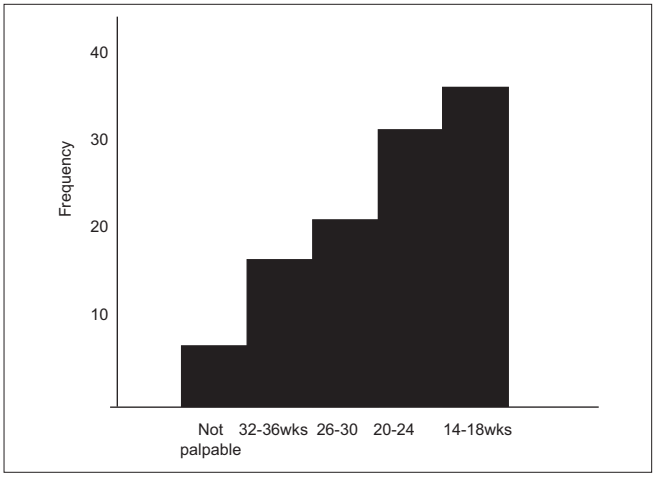

Figure 3: Sizes of the uteri by abdominal palpations (in weeks)

Figure 4 shows the different surgical incision made on the anterior abdominal wall. Pfannenstiel incision was the most common incision while inverted T incision was made on 3% of the patients. In the latter, initial Pfannenstiel incision was made but extended vertically when it was realised that the Pfannenstiel incision did not give enough access for myomectomy.

Table 2 shows that intravenous ketamine with or without intravenous diazepam was the most common mode of

Table 2: Types of anaesthesia

Anaesthesia	Frequency (%)
Ketamine + diazepam	32 (32)
Ketamine alone	30 (30)
Spinal augmented with GA* (ketamine)	13 (13)
Spinal alone	6 (6)
GA (nitrous oxide) with endotracheal intubation	6 (6)
Ketamine plus lytic cocktail[+]	4 (4)
Thiopentone	3 (3)
Failed spinal resulting in use of GA (ketamine)	2 (2)
Propofol plus ketamine	2 (2)
Propofol alone	1 (1)
Epidural	1 (1)

*GA: General anaesthesia, [+]Lytic cocktail: Intravenous diazepam + intravenous pentazocine + intravenous chlorpromazine

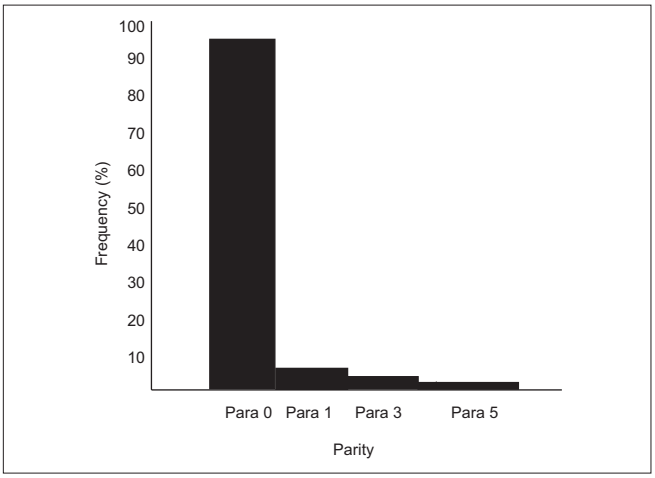

Figure 2: Parity distribution of the patients

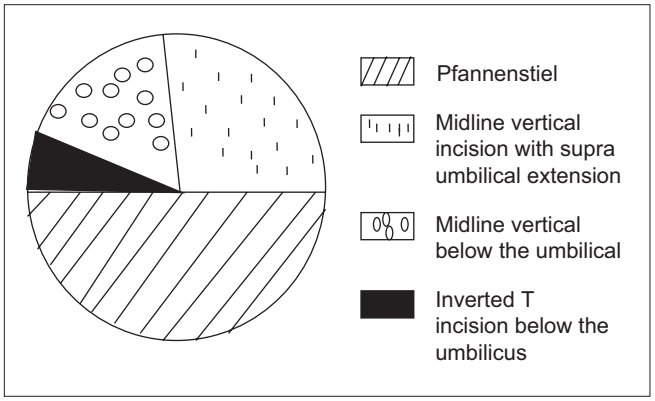

Figure 4: Abdominal incisions

anaesthesia used in this series (62%), while the use of intravenous propofol and epidural anaesthesia were the least used forms of anaesthesia, 1% each.

In Table 3, the post-myomectomy complications were listed. 86% of the women received blood transfusion, pre-operative, intraoperative or post-operative. Post-operative pyrexia was the second most common cause of post-myomectomy complications, occurring in 44% of the women. Bladder injury was among the least complications occurring only in 1 (1%) of the women.

Discussion

It is not surprising in this study that all the women who had myomectomy were in the reproductive age bracket. It is, however, noteworthy that clinical fibroids were found in a woman as young as 20 years in this study. This finding is similar to the findings in other parts of Nigeria by Egwuatu,[7] Omu and Ehigiegba,[8] who recorded age ranges of 20–47 and 20–50 years, respectively. This finding is unlike the age ranges of 25–33 and 27–47 years recorded by McLaughlin[9] and Smith and Uhlir[10] in the USA. This is in support of the known fact that fibroids do not only occur more in blacks but also occurring at earlier ages in them.

The percentage of women in this study who were nulliparous was rather high (91%) compared with percentages of 82.3%, 55.6% and 71.3% reported by Egwuatu,[7] Omu and Ehigiegbe[8] and Acien and Quereda,[11] respectively. This may be because a good number of Catholic reverend sisters were operated on in this study since they are not known to have parous experience.

This notwithstanding, this study suggests that uterine fibroid is significantly associated with nulliparity. This study further confirmed menorrhagia as one of the most common symptoms of uterine fibroid as previously noted in the past studies.[12-15] While it was the most common symptom of fibroid in this study (69%), it was the second most common symptom in some other studies in Nigeria,[13,16,17] only surpassed by abdominal mass in those studies. Other forms of abnormal uterine bleeding are not common. As shown in this study, only 4% of the women presented with intermenstrual bleeding, 3 of them due to fibroid polyp and 1 due to submucous fibroid causing post-menstrual vaginal spotting.

The actual contribution of fibroid to infertility may be controversial, the association between the two is not, however, in doubt as shown in this study where 33% of the women with fibroid had infertility. The study by Ekine *et al.*[12] even revealed a higher infertility rate of 41.9%.

The sizes of the fibroid masses in this study, which roughly translate to the sizes of the uteri palpable per abdomen in weeks, are quite large. The sizes of the uteri ranged from being bulky to 36 weeks gestation, median being 20 weeks gestation. Only 5% were not palpable per abdomen.

The finding is quite different from a uterine size range of bulky to 20 weeks gestation noted by Li *et al.* in Shefield, UK.[18] In the study by Atombosoba *et al.* in Bayelsa State, Nigeria,[12] the abdominal mass in the participants ranged between 12 and 26 weeks uterine size. This study showed that a significant percentage of our women present late with huge uterine fibroids and undertaking laparoscopic myomectomy in such cases will be unthinkable even if available. Another notable finding in this study relating to the size of the uterus is the multiplicity of the fibroid nodules. Only in 5 cases (5%) were there a single fibroid mass, albeit large. Others were multiple fibroid nodules, ranging from 2 to 131 nodules.

It is interesting that Pfannenstiel incision was the most common abdominal incision (55%) in this study in spite of the fact that majority of the fibroid masses were above the umbilicus in uterine size. Some fibroids as large as 26 weeks gestation were removed through this abdominal incision to give the women fine cosmetic incision scars which the women graciously appreciated.

The delivery of the uterus from the pelvic cavity even when it was up to 26 weeks gestation in size through this Pfannenstiel incision was almost invariably successful as long as the palpable

Table 3: Post-myomectomy complications

Complications[#]	Frequency (%)
Blood transfusion rate	86 (86)
Post-operative pyrexia*	44 (44)
Severe haemorrhage[+]	25 (25)
Anaemia[†]	24 (24)
Abdominal wound breakdown	6 (6)
Intestinal obstruction	
Partial	1 (1)
Total	1 (1)
Abdominal haematoma	1 (1)
Asherman's syndrome	1 (1)
Urinary tract infection	1 (1)
Injury to the bladder	1 (1)
Secondary haemorrhage	1 (1)
Blood transfusion reaction (haemolytic)	1 (1)
Mortality	1 (1)

*Post-operative pyrexia is defined here as the post-operative temperature of 38.0°C or above recorded after 24 h of surgery, [+]Severe haemorrhage is defined here as estimated post-operative blood loss ≥1 L, [†]Anaemia rate was derived from those women who were not anaemic before surgery but became anaemic after surgery. Those who were already anaemic before surgery were excluded. Anaemia here is defined as PCV <33%, [#]Note that some patients had more than one complication. PCV: Packed cell volume

uterine mass was freely mobile per abdomen before surgery, and a nylon 2 stay suture was used to lift the uterus out of the pelvis. The 3 cases (3%), in which "inverted T" incision was made, was usually due to misjudgement in the assessment of the mobility of the uterus as the vertical extension from the initial Pfannenstiel incision would then have to be made to have adequate access to the uterus.

The successful use of intravenous ketamine hydrochloride as the anaesthetic agent in the majority of this rather major surgery is quite revealing and encouraging. This suggests that in resource-limited settings like ours where sophisticated anaesthetic machines are limited in supply, intravenous ketamine ± intravenous diazepam or spinal anaesthesia augmented with ketamine can suffice for a major surgery like myomectomy.

Although blood transfusion on its own is not a direct complication of myomectomy, its cost and possible complications associated with it afforded it to be included here as part of myomectomy complications. The blood transfusion rate of 86% in this study is rather high vis-a-vis transfusion rate of 12.8% by Okogbo *et al.* in South Western Nigeria[14] and rate of 7.7% in a study in Hungary by Gávai *et al.*[19] (This high transfusion rate is most likely attributed to the fact that 74% of the patients were anaemic before surgery, if PCV of <33% is considered as definition of anaemia). Myomectomy for such patients will almost invariably lead to blood transfusion. Another likely reason was because most of the fibroid nodules were huge and multiple (in 62% of the cases, the uteri were above the umbilicus). Such cases were obviously more associated with haemorrhage than smaller fibroids. Not surprisingly, myomectomy-associated severe haemorrhage rate was 25% in this study.

In spite of the apparent liberal blood transfusion rate in this study, the post-myomectomy anaemia rate was 24% which could have been worse if the somewhat liberal blood transfusion measures were not taken.

This post-myomectomy anaemia rate in this study is much higher than the post-myomectomy anaemia rate of 10.4% reported by Okogbo *et al.*[14] but comparable to the rate of 29.3% reported by Aboyeji and Ijaya in Ilorin, Nigeria.[20] Another major complication in this study was a post-myomectomy pyrexia of 44% which was quite higher than 13.5% in the study by Okogbo *et al.*[14] and 3% by Gávai *et al.*[19] but not too much different from pyrexia rate of 32.5% recorded by Aboyeji and Ijaiya in Ilorin, Nigeria.[20] This is probably due to high blood transfusion rate in this study as hyperpyrexia is one of the known blood transfusion reactions. The pyrexia may also be due to malaria as malaria is endemic in our environment.

The only myomectomy-associated mortality in this series resulted from severe haemorrhage. Her pre-operative PCV was 17% after presenting with prolonged severe menstrual bleeding. She was transfused with two pints of blood just before the commencement of myomectomy, had a third pint of blood in the immediate post-operative period and died just before the commencement of the fourth pint of blood. This woman would probably have been saved if the surgery was delayed and more pints of blood had been made available before surgery.

One of the limitations of this study is that, although all of the women were followed up to 1 month after the surgery, except the mortality case, many of them were subsequently lost to follow-up and this might not adequately review probable long-term post-myomectomy sequelae.

Conclusion

This study has shown that menorrhagia and abdominal mass are the main symptoms of uterine fibroid. Furthermore, the majority of our women who present with large uterine fibroids are desirous of preserving their reproduction; hence, abdominal myomectomy, as in this study, becomes the inevitable treatment option.

This surgery, however, is not free from significant negative outcomes including mortality as shown by this study.

It is recommended that liberal blood transfusion facilities should be available before embarking on abdominal myomectomy coupled with meticulous intraoperative haemostasis.

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Conflicts of interest
There are no conflicts of interest.

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