

# The benefit of myomectomy in women aged 40 years and above: Experience in an urban teaching hospital in Nigeria

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## ABSTRACT

**Background:** Abdominal myomectomy remains the mainstay of surgical management of uterine fibroids in our environment. However, its benefit in women aged 40 years and above remains debatable. **Materials and Methods:** An 11-year prospective study was conducted involving 98 women, aged 40 years and above, who had abdominal myomectomy for the treatment of uterine fibroid at the University of Maiduguri Teaching Hospital, Maiduguri. They were followed up regularly for 1–6 years to detect conception, resolution of symptoms and obstetrics performance. Data were analyzed using SPSS version 13. **Results:** The mean age of the patients was 42.6±2.9 years and 77 (78.6%) of them were nulliparous. Lower abdominal swelling was the commonest clinical presentation and the mean uterine size was 18.6±8.5 weeks. Infertility with uterine fibroids was the indication for myomectomy in majority of the cases [48 (48.9%)], while pregnancy complications accounted for 11.2% (11) of the cases. Fertility restoration was 10.4% among the infertile patients. There was complete resolution of symptoms in 35.9% of those who required symptomatic relief, and term pregnancies were recorded in 72.7% of patients with pregnancy complications. **Conclusion:** Myomectomy is the recommended treatment of uterine fibroids in women aged 40 years and above with infertility and who wish to become pregnant. If there is no need for further fertility preservation, hysterectomy should be offered.

**Key words:** Abdominal myomectomy, conception, *in vitro* fertilization, infertility, uterine fibroids

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## INTRODUCTION

Myomectomy has become a commonly performed surgical procedure in recent years as more women desire conservation of their uterus in the presence of symptomatic uterine fibroids.<sup>1</sup> The incidence and severity of myomas increase with the premenopausal age,<sup>2,3</sup> which makes uterine fibroids a common clinical condition encountered in many women of advanced reproductive age. Additionally, the recent trend of delayed childbearing and an increase in the number of women in the latter reproductive years have increased the demand for conservative treatment

of uterine fibroids for preservation of reproductive potential.<sup>2-4</sup>

The surgical treatment of this benign tumor in women aged 40 years or more remains a challenge.<sup>4</sup> In African countries where the prevalence of fibroids is higher, this is furthermore complicated by the fact that many patients also suffer from infertility and wish to preserve their uterus for further childbirth.<sup>3,5</sup>

New advances in assisted reproductive techniques now permit women in the later reproductive years to bear a child if the uterus is still intact. This has brightened their fertility prospects, thereby giving them more reasons to choose myomectomy as an alternative to hysterectomy.

Abdominal myomectomy for large uterine fibroids can be technically challenging, and it may be associated with the risks of hemorrhage, anemia, wound sepsis, pelvic adhesions and uterine rupture in subsequent pregnancies.<sup>1,2</sup> However, recent studies have shown that the morbidity of myomectomy and hysterectomy is comparable.<sup>6</sup> Newer

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conservative surgical techniques with minimal invasive approach including laparoscopic myomectomy, uterine artery embolization and magnetic resonance guided focused ultrasound have evolved, but are not readily available in developing countries. Therefore, abdominal myomectomy forms the mainstay of conservative surgical treatment for uterine fibroids, particularly in women who wish to retain their uterus.<sup>2,3,5</sup>

The presence of uterus carries a symbolic meaning to many women who associate it with femininity and can experience diminished self-esteem if it is removed. In fact, some women view the uterus as the regulator and controller of important physiological functions, a sexual organ, a source of energy and vitality, and a maintainer of youth and attractiveness.<sup>7-9</sup> Thus, many women might wish to avoid a hysterectomy, even when their families are completed. The benefit of myomectomy in women aged 40 years and above has not been strictly studied in our environment. The aim of this study was to review the benefits of myomectomy in this age group and its worthiness in our environment.

## MATERIALS AND METHODS

A cohort of 109 women, aged 40 years and above, who had abdominal myomectomy for the treatment of uterine fibroid at the University of Maiduguri Teaching Hospital (U.M.T.H.), Maiduguri, northeastern Nigeria, formed the basis of this study. It was a prospective study that spanned 11 years (1997–2007) and was conducted in the Department of Obstetrics and Gynaecology. The patients were counseled and only those who gave a written consent were enrolled in the study. The hospital Ethical and Research Committee reviewed all aspects of the study and approved it.

Patients' demographic data, preoperative symptoms and indications for the surgery were recorded. Only the patients who had abdominal myomectomy were enrolled in the study after being counseled and informed that they could withdraw from the study anytime, without any consequences. Hysterosaphingography (HSG), hormonal assay, and seminal fluid analysis (SFA) were performed to detect abnormalities in all patients who had infertility. Patients with abnormalities in HSG, hormonal assay or SFA and those who declined to give their consent for the study were excluded from the study. Women who had repeat myomectomy for recurrent uterine fibroids were also excluded.

Abdominal myomectomy was done via a laparotomy and surgery was performed according to standards described by Breech and Rock.<sup>11</sup> All the patients were operated by the authors and uterine fibroids confirmed by histology.

The patients were categorized into three groups based on their indications for surgery: Those with infertility, those who required symptom resolution and those who had pregnancy complication.

After the surgery, the patients were followed up for 1–6 years and they were seen at 3–6 months interval. The patients with infertility were encouraged to get pregnant after being counseled on regular sexual intercourse, and after 2 years of follow-up, they were referred for *in vitro* fertilization (IVF). At each visit, the patients were enquired about relief, persistence or recurrence of the preoperative symptoms and pregnancy. Physical examination including pelvic ultrasound scan was done to detect recurrence of fibroid or confirm pregnancy. Those who became pregnant were enrolled for antenatal care and followed up to delivery.

The information obtained for each patient was recorded on a proforma designed for the study. This was then entered into an international business machine (IBM) compatible personal computer (PC) for analysis using SPSS version 11.0 for window statistical package. Analyses were carried out for descriptive statistics and presented as tables. Fisher exact test was used to compare proportions and *P* value of <0.05 was considered to be statistically significant.

For the purpose of this study, infertility was defined as failure to achieve pregnancy after a year of cohabitation and regular unprotected intercourse. It was termed primary when there was no history of previous pregnancies and secondary when previous pregnancies had occurred irrespective of their outcomes. Recurrent miscarriage was defined as three or more consecutive spontaneous miscarriages. Preterm delivery was defined as delivery after the age of viability but before 37 completed weeks of gestation, and abnormal lie was fetal lie other than longitudinal.

## RESULTS

During the period under review, 818 women had myomectomy, and 135 (16.5%) of them were aged 40 years or more. Informed consent for the study was given by 109 women, but 98 (89.8%) of them were followed up for at least 1 year and the rest were lost to follow-up.

The age range of the patients was 40–49 years, and women aged 41 and 42 years constituted 24.5% each. Majority of the patients were nulliparous [77 (78.6%)] and 29 (29.6%) had a history of abortion. The mean parity of the parous women was 1.7±1.1 with a range of 1–5. Fifty-six (57.1%) of the patients were married, while the rest [42 (42.9%)] were either single, divorced or widowed as shown in Table 1.

Lower abdominal swelling was the commonest presentation, followed by infertility and menstrual abnormality as shown in Table 2. There were multiple symptoms in 48% of the patients. Clinical uterine size at presentation ranged from 12 to 32 weeks, with a mean of 18.6±8.5 weeks.

The mean duration of infertility was 3.2±2.2 years, with a range of 1–10 years. Infertility with uterine fibroids was

**Table 1: Sociodemographic characteristics**

Characteristics	Number of patients (%)
Age in years	
40	21 (21.4)
41	24 (24.5)
42	24 (24.5)
43	19 (19.4)
44	5 (5.1)
≥45	5 (5.1)
Total	98 (100)
Parity	
0 + 0	48 (48.9)
0 + (1-4)	29 (29.6)
1	12 (12.3)
≥2	9 (9.2)
Total	98 (100)
Marital status	
Married	56 (57.1)
Single	24 (24.5)
Divorced	14 (14.3)
Widowed	6 (6.1)
Total	98 (100)
Educational level	
No formal education	18 (18.4)
Primary	13 (13.3)
Secondary	39 (39.7)
Tertiary	33 (33.6)
Total	98 (100)
Occupation	
Unemployed housewives	24 (24.5)
Civil servants	51 (52.1)
Businesswomen	23 (23.4)
Total	98 (100)

**Table 2: Clinical presentation**

Clinical presentation	No. of patients	Percentage
Lower abdominal mass	27	27.5
Infertility		
Primary	8	8.2
Secondary	13	13.3
Menorrhagia	13	13.3
Lower abdominal pains	11	11.2
Pregnancy complications	11	11.2
Dysmenorrhea	8	8.2
Asymptomatic	6	6.1
Dyspareunia	1	1.0
Total	98	100

the indication in majority of the cases for myomectomy [48 (48.9%)]. Pregnancy complications like recurrent miscarriage/previous preterm delivery, previous abnormal lie and previous abruption placentae accounted for 11/98 (11.2%) of the cases.

Forty-eight women had infertility, and following myomectomy, 5/48 (10.4%) of the women had their fertility restored. Three had spontaneous conception and two out of the six women who attempted post myomectomy IVF conceived (Fischer exact = 3.86,  $P=0.04$ ). Three had elective C/S at term, one had emergency C/S due to antepartum hemorrhage and the other had a missed abortion at 16 weeks. There was no case of uterine rupture. The remaining 43 women were still infertile at the end of the study.

Thirty-eight women wanted resolution of symptoms; 14 women had complete resolution of symptoms, giving a patient satisfaction rate of 35.9%. Twelve (30.8%) women reported initial temporary relief of symptoms, while the remaining [13 (33.3%)] reported worsening of symptoms or development of newer symptoms, especially recurrent pelvic pains.

Eleven women had myomectomy because of various pregnancy complications and nine term pregnancies were recorded in 8/11 (72.7%) of the women. Three of the women had elective cesarean section (one due to placenta previa and the other two due to breech presentations), one had emergency cesarean section (due to fetal distress), while the remaining five had vaginal deliveries. None of the patients had uterine rupture. The remaining three women were yet to conceive at the end of the study.

Recurrent fibroid was seen in 3 (3.1%) of the patients studied, and after 6 years following myomectomy, 16 patients had hysterectomy due to one reason or the other of unbearable and persistent or recurrent symptoms of pelvic pains, metromenorrhagia, endometrial hyperplasia or recurrent fibroids. Twelve of them were in the group that wanted resolution of symptoms and two each among those with infertility and pregnancy complications [Table 3].

## DISCUSSION

Abdominal myomectomy remains the mainstay of surgical management of uterine fibroids in our environment, especially when fertility conservation is required.<sup>2,5</sup> This surgery is also the standard of care for patients with uterine fibroids who have otherwise unexplained infertility or recurrent pregnancy loss.<sup>12</sup> Our study looked at the benefit of this time-honored surgery in women aged 40 years and above, where ovarian functions and fecundity are on the decline.

The link between infertility and uterine fibroids remains unclear. However, it is well known that the incidence of uterine fibroids increases widely with age,<sup>13</sup> and infertility when really caused by uterine fibroids should, therefore, appear later in a woman's reproductive life. This may be the reason for the high occurrence of infertility in our studied population, thereby making it the commonest indication for myomectomy.

Victor Bonney,<sup>11</sup> an early advocate of myomectomy, wrote in 1931, "the restoration and maintenance of physiologic function is, or should be, the ultimate goal of surgical treatment".

We observed some benefits of myomectomy in all the three groups studied. There was a marginal fertility restoration of 10.4% amongst the women with infertility.

**Table 3: Indication for myomectomy**

Indication for myomectomy	No. of patients	Percentage
Infertility		
Primary	20	41.7
Secondary	28	58.3
Total	48	100
Symptom resolution		
Menorrhagia	13	33.3
Lower abdominal pains	11	28.2
Dysmenorrhea	8	20.5
Lower abdominal swelling	6	15.4
Dyspareunia	1	2.6
Total	39	100
Pregnancy complications		
Recurrent abortion	8	72.7
Previous abnormal lie	2	18.2
Previous placental abruption	1	9.1
Total	11	100

This is much lower than the reported 55.9% restoration of fertility reported by Seracchioli *et al.* in Italy.<sup>15</sup> The low conception may be because of the natural decline in fecundity with increasing age, and this finding is censored with the finding of Vercelli *et al.* in 1999.<sup>16</sup> In addition, our patients had larger fibroids before surgery and therefore had more extensive surgeries and possibly postoperative adhesions that could impair tubal functions. However, a higher conception rate of 33.3% was seen among women who had IVF. The high conception in this group is a welcome advancement, and possibly, the negative effect of age on fertility was compensated by the positive effect of myomectomy. Although the exorbitant cost of IVF treatment in a developing country may not allow routine recommendation of such treatment, it is important that this option be discussed with the patients. This will allow a more informed choice of surgery and allows many such couples to fulfil their dreams of becoming parents.

Uterine fibroids may be associated with miscarriage or preterm delivery, especially the submucous variety which could either interfere with implantation or compete with the fetus for space.<sup>17</sup> In this study, an improved obstetrics performance was seen in the women with recurrent miscarriage or preterm deliveries. The results of this study compare favorably with the reports in the literature, which suggests that the surgical removal of myoma has a beneficial effect of enhancing fertility and improving pregnancy outcome.<sup>11</sup> The 72.7% successful live birth rate following myomectomy strongly indicates that such treatment is the standard of care in such women. This finding also agrees with the findings of Li *et al.* in Sheffield, UK.<sup>18</sup>

Following myomectomy, we also found a modest patient satisfaction rate of 35.9% among those who wanted symptom resolution. This is lower than the 80% rate earlier reported by Buttram and Reiter<sup>19</sup> and much lower than over 90% reported for hysterectomy. For these patients, the alternative of hysterectomy could have been more

useful as studies have shown higher symptom relief with hysterectomy. It can be suggested that patients who require resolution of symptoms should be counseled and offered the option of hysterectomy because of the obvious benefits. Moreover, majority of these patients had persistence or even worsening of symptoms.

Only 3.1% had recurrence during the follow-up period, which is much lower than 20.7% reported earlier in the same center among all patients.<sup>20</sup> This is because of the decline in ovarian function toward the later part of the reproductive age and the consequent hypoestrogenic state that ensues. However, the repeat surgery, particularly hysterectomy, of the 16.3% is comparable with the finding of 15% reported by Steward *et al.*<sup>21</sup> This information can be very useful for women undergoing myomectomy for resolution of symptoms so that they can make an informed choice of surgery for the treatment of uterine fibroids at this age.

There is need for a randomized case-control study to determine optimum treatment for uterine fibroid in women aged 40 years and above in our environment and the dose-effect relationship of myomectomy for large uterine fibroids and infertility. This is particularly important in our environment where our patients present with multiple and relatively larger fibroids.

Limitations to this study include the lack of a control group. However, we were unable to find and follow up cases of hysterectomy for myomas of similar size with which to compare the results. Another limitation of this study is that the follow-up period of the patients was not uniform and the patients who had complete resolution of symptoms were more likely to default early, thereby skewing the number of patients with recurrence of preoperative symptoms. Additional limitation is the small sample size, especially of those women who had IVF, and this may exaggerate the conception rate in that group.

## CONCLUSION

Myomectomy is the recommended treatment of uterine fibroids in women aged 40 years and above with infertility and those that wish to become pregnant. If there is no need for further fertility preservation, hysterectomy should be offered.

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