

*East African Medical Journal Vol. 92 No. 11 November 2015*

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## FERTILITY OUTCOME IN WOMEN AFTER OPEN ABDOMINAL MYOMECTOMY AT THE UNIVERSITY OF PORT HARCOURT TEACHING HOSPITAL, PORT HARCOURT, NIGERIA

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### ABSTRACT

**Background:** Myomectomy is the surgical treatment of choice for uterine fibroids especially in women desirous of conception. There are controversies regarding fertility outcome following open abdominal myomectomy.

**Objective:** To assess fertility outcome after open abdominal myomectomy in women with previous infertility.

**Design:** A retrospective study.

**Setting:** University of Port Harcourt Teaching Hospital (UPTH), Port Harcourt, Nigeria.

**Subjects:** Women who wished to conceive after open abdominal myomectomy and had only subserous and/or intramural fibroids at surgery.

**Results:** Over the five-year period under review, there were 301 abdominal myomectomies performed. One hundred and twenty case notes were retrieved giving a retrieval rate of 39.9%. Of these, 50 met the inclusion criteria. The mean age was  $33.3 \pm 3.2$  years (range 27- 42 years). Pregnancy and miscarriage rates were 88% and 9.1% respectively. Live birth rate was 84.1%. Most (95.5%) of the patients conceived spontaneously after the procedure. Caesarean section was the common (84%) mode of delivery.

**Conclusion:** Fertility and live birth rates improved after open abdominal myomectomy.

### INTRODUCTION

Uterine fibroids are common benign tumours prevalent in 30-50% of women in the reproductive age with increased frequency with age, and occurring in up to 77% of women approaching the age of 50 years (1,2). They tend to shrink after the menopause due to lower hormonal activity supporting the role of ovarian steroids in its aetiology. They are three to nine times more common in blacks than Caucasians and this is thought to be due to a genetic predisposition (3).

There are controversies about the relationship between fibroids and infertility, with several studies supporting the fact that uterine fibroids are responsible for infertility in some cases as evidenced by unexplained infertility prior to surgical removal of fibroids and rapid return of fertility afterwards (4,5). Submucosal fibroids that distort uterine cavity may cause sub acute endometritis and mechanical compression resulting in interference with normal implantation or sperm transportation with increased risk of miscarriage (6). Intra mural or subserous

fibroids on the other hand are the more controversial ones with regard to their effect on reproductive outcome (7). If indeed these contribute to infertility, then their removal where there are no other associated factors should improve fertility outcome.

Currently, myomectomy is recommended for women with unexplained infertility and recurrent miscarriages. It is the surgical treatment of choice for uterine fibroids especially in young women who desire fertility preservation and its use has increased remarkably in the past two decades (8). In our environment where a high premium is placed on childbearing, women will go to any length to preserve their fertility especially as advances in assisted conception offer prospects of pregnancy even at an advanced age (9). Thus these women prefer myomectomy to hysterectomy, which is the definitive treatment for uterine fibroids. More so, major complications occur with hysterectomy and data from a large UK audit (the VALUE audit) suggest that complications are all increased in the presence of uterine fibroids (10).

Whilst some retrospective studies suggest a fertility benefit for the surgical removal of fibroids (11), definitive evidence from prospective randomised studies that myomectomy improves fertility is still lacking. Myomectomy has associated risks of haemorrhage, post-operative adnexal adhesions causing tubal occlusion and iatrogenic infertility. The risk of uterine rupture in labour in women with previous myomectomy has also been reported (12 - 14). Our aim here was therefore to provide additional information on fertility outcome in women after myomectomy by analysis of the data from our unit.

## MATERIALS AND METHODS

This was a retrospective study of cases of abdominal myomectomy performed on women with infertility at the University of Port Harcourt Teaching Hospital (UPTH), Port Harcourt, Nigeria over a five-year period (January 2008 to December 2012). The myomectomy was carried out through a midline or transverse suprapubic skin incision under spinal or combined spinal and epidural (CSE) anaesthesia. Ethical approval was obtained from the ethical review committee of the University of Port Harcourt Teaching Hospital.

The variables to be analysed were retrieved from theatre records and hospital case notes over the five-year period. These variables included age, parity, size of the pelvic mass, location and number of fibroids, coexisting adenomyosis, indications for surgery, fertility outcome after myomectomy and mode of delivery. Only women who wished to conceive after the procedure and had subserous and/or intra mural fibroids at surgery were included in the study. Those with tubal, ovulatory and male factor infertility were excluded. The period of follow up for the purpose of this study was 12 months. The women were advised to report to the unit as soon as pregnancy occurred.

The results are presented as mean and standard deviation (where the data were normally distributed or median and range), percentages, rates and

proportions. Data analysis were done using Epi Info Ver. 6.04d.

## RESULTS

Over the five-year period, there were 301 abdominal myomectomies performed. One hundred and twenty case notes were retrieved giving a retrieval rate of 39.9%. Of the 120, 50 met the inclusion criteria. The mean age was  $33.3 \pm 3.2$  years (range 27-42 years). Most of the women (82%) were nulliparous. The mean interval between myomectomy and pregnancy was  $23.9 \pm 17.5$  months. The uterus was equal to or greater in size than that of a 14 week pregnancy in 30 (60%) women and most of the fibroids were intramural in location (64%). In 30 (60%) women, multiple uterine fibroids equal to or greater than four were removed and the maximum number removed from a single patient was 39. In 17 (34%) women the endometrial cavity was breached while in 3 (6%), it was not. In twenty two (44%) women, a co incidental finding of adenomyosis was noted while in 28 (56%), it was not stated (Table 1).

After myomectomy, there were 44 pregnancies of which 37 resulted in live births with four miscarriages, one Fresh stillbirth (FSB) and one intrauterine foetal death (IUFD). The conception and miscarriage rates were 88% and 9.1% respectively (Table 2). The live birth rate was 84.1% after myomectomy (Table 2). Two (4.5%) of them had assisted conception in the form of in-vitro fertilisation, the rest conceived spontaneously. Caesarean section was the mode of delivery in 42 (84%) cases (Figure 1). In one patient, there was Caesarean myomectomy because of recurrence.

There were no recorded cases of preterm labour, ectopic pregnancy, antepartum haemorrhage, postpartum haemorrhage or retained placenta. One patient had a ruptured uterus. She had been scheduled for an elective repeat Caesarean Section at 38 weeks but went into spontaneous labour and presented after seven hours to the hospital with a ruptured uterus and a dead foetus.

**Table 1**  
*Characteristic of 50 women who underwent myomectomy and wished to conceive*

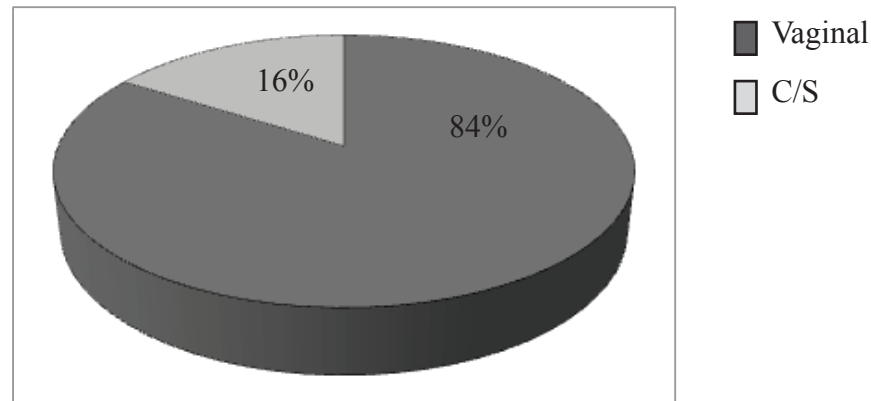
Characteristic	n=50	Percentage (%)
Age		
25-39	6	12
30-34	27	54
35 and above	17	34
Parity		
0	41	82.0
1	4	8.0
2	5	10.0
Location of fibroids		
Intramural	32	64.0
Subserous	18	36.0
Number fibroids		
1	9	18.0
2	3	6.0
3	2	4.0
≥4	30	60.0
Unspecified	6	12.0
Size of uterus		
<14 weeks	20	40.0
≥14 weeks	30	60.0
Opening of endometrial cavity		
Yes	17	34.0
No	3	6.0
No data	30	60.0
Co-existing Adenomyosis		
Present	22	44.0
Absent	0	0.0
No data	28	56.0

**Table 2**  
*Reproductive performance after abdominal myomectomy*

	After myomectomy n(%)
Total number of pregnancy	44
Live births	37 (84.09)
Miscarriage	4 (9.09)
FSB	1 (2.27)
IUFD	1 (2.27)
Ruptured uterus	1 (2.27)

IUFD – Intrauterine fetal death: FSB – Fresh stillbirth:

**Figure 1**  
Mode of delivery amongst patients pregnant after abdominal myomectomy



## DISCUSSION

Women with uterine fibroids desirous of getting pregnant pose a conundrum to gynaecologists as to the best treatment option to offer them especially where other factors that may cause infertility have been excluded. Medical treatment is conservative whilst the definitive surgical treatment—hysterectomy will put an end to their reproductive career.

The mean age of the patients studied was  $33.3 \pm 3.2$  years. This represents the reproductive age group when uterine fibroids are most prevalent (1). Studies have shown that age has a significant impact on post myomectomy pregnancy rates with a lower spontaneous conception rate in women over the age of 35 years (15,16).

Most 95.5% of the women studied here were less than 35 years and conceived spontaneously as against 4.5% that had assisted conception.

Most of the patients (88%) were able to achieve conception hence myomectomy appears to be beneficial to women desirous of pregnancy who have uterine fibroids. The miscarriage rate of 9.1% and the live birth rate of 84.1% suggest a beneficial effect of myomectomy on fertility outcome. This result is in keeping with rates of 49% to 75% post-operative pregnancy rate reported from other studies if fibroids were the sole factor of infertility (1,5,7,15,17,18). Our pregnancy rate following myomectomy of 88% is higher than that of others (7,15, 17). This could be due to the fact that our women although followed up for 12 months were advised to come back when they got pregnant.

Our mean interval between myomectomy and pregnancy was  $23.9 \pm 17.5$  months (range 6 months–4 years). Available evidence shows that most women who conceive are able to do so within the first year, with pregnancy rates dropping significantly afterwards. These post-operative pregnancy rates vary between 9% and 76% depending on the type of fibroid (19).

Uterine fibroids are known to be associated with complications in the second and third trimesters of pregnancy including abdominal pain due to red degeneration, premature labour, preterm rupture of membranes, placental abruption, outlet obstruction, post-partum haemorrhage, retained placenta and puerperal sepsis (20, 21). In the patients studied, there were few obstetric complications. One elderly nullipara had severe pre-eclampsia, which resulted in intra-uterine fetal death. This is in keeping with other studies (7,15). Ramavath *et al* however noted a higher risk of pre-eclampsia, gestational diabetes mellitus, preterm labour and neonatal intensive care unit (NICU) admission amongst the women they studied although the study was in women greater than 35 years (22).

A major concern in pregnancies following previous myomectomy is that of uterine rupture. It can occur following myomectomy regardless of whether it is laparoscopic, hysteroscopic or by laparotomy (13,14,22). Indeed, one (2.27%) patient had uterine rupture that resulted in delivery of a fresh stillborn. The fear of this risk leads to a high rate of Caesarean Section among these patients. Our study had a high

Caesarean Section rate (84%). Other studies also had similar higher Caesarean Section rates (7,15, 23).

This was a retrospective study with its shortcomings. For instance, both consultant gynaecologists and trainees carried out the surgeries in the department as such there was no standardisation. The case note retrieval was poor including documentation. There is therefore a need for prospective randomised control trials to evaluate the true fertility outcome following open abdominal myomectomy.

In conclusion this retrospective study shows that pregnancy and live birth rates are high while miscarriage rates are low after open abdominal myomectomy in patients with previous infertility. Women with uterine fibroids associated with unexplained infertility should be encouraged to have open abdominal myomectomy where other surgical options are unavailable due to its beneficial effects on fertility outcome. Clinicians may find this information useful in the management of such patients.

#### REFERENCES

- Verkauf B.S. Myomectomy for fertility enhancement and preservation. *Fertil Steril* 1992; **58**:1-15.
- Suresh YN, Narvekar. Role of surgery to optimize outcome of assisted conception treatments. *The Obstetrician & Gynaecologist* 2012; **15**:91-98.
- Khaund A, Lumsden M. Benign disease of the uterus. In: Keith Edmonds D. (ed) Dewhurst's textbook of Obstetrics & Gynaecology 8<sup>th</sup> edition. Oxford: Blackwell Publishing Ltd 2012; 1157-1176.
- Bajekal N, Li T.C. Fibroids, Infertility and pregnancy wastage. *Hum Reprod Update* 2000; **6**:614-620.
- Berkeley AS, DeCherney AH, Polan ML. Abdominal myomectomy and subsequent fertility. *Surg Gynecol Obstet* 1983; **156**: 319-322.
- Machupalli S, Norkus EP, Mukherjee TK, Reilly KD. Abdominal myomectomy increases fertility outcome. *Gynecol Obstet* 2013; **3**:144doi:10.4172/2161-0932.1000144.
- Marchionni M, Fambrini M, Zambelli V, Scarselli G, Susini T. Reproductive performance before and after abdominal myomectomy: a retrospective analysis. *Fertil Steril* 2004; **82**: 154-159
- Stewart EA. Uterine fibroids. *Lancet* 2001; **357**: 293 - 298.
- Orazulike NC, Oriji VK, Fiebai PO. Live birth after In-vitro fertilization (IVF) in a 53-year-old woman: A case report. *The Nigerian Health Journal* 2013; **13**: 139-142
- McPherson K, Metcalfe MA, Herbert A et al. Severe complications of hysterectomy: the VALUE study. *Br J Obstet Gynaecol* 2004; **111**: 688-694.
- Somigliana E, Vercillini P, Daguati R, Pasin R, De Giorgi O, Crosignani PG. Fibroids and female reproduction: a critical analysis of the evidence. *Hum Reprod Update* 2007; **13**: 465 - 476
- Fletcher HM, Frederick J. In: Studd J (ed). Progress in Obstetrics & Gynaecology 16th edition. *Edinburgh: Elsevier Science Ltd.* 2005; 277-286.
- Ozeren M, Ulusoy M, Uyanik E. First trimester spontaneous uterine rupture after traditional myomectomy: case report. *Isr J Med Sci* 1997; **33**: 752-753
- Dubisson JB, Chavet X, Chapron C, Gregorakis SS, Morice P. Uterine rupture during pregnancy after laparoscopic myomectomy. *Hum Reprod* 1995; **10**: 1475-1477.
- Li TC, Mortimer R, Cooke ID. Myomectomy: a retrospective study to examine reproductive performance before and after surgery. *Hum Reprod* 1999; **14**: 1735-1740.
- Ramzy AM, Sattar M, Amin Y, Mansour RT, Serour GI, Aboulghar MA. Uterine myomata and outcome of assisted reproduction. *Hum Reprod.* 1998; **13**: 198-202.
- Smith DC, Uhlir JK. Myomectomy as a reproductive procedure. *Am J Obstet Gynecol* 1990; **162**: 1476-1482.
- Sinclair D, Gaither K, Mason TC. Fertility outcome following myomectomy in an urban hospital setting. *J Natl Med Assoc* 2005; **97**: 1346-1348.
- Poncelet C, Benifla JL, Batalian A, Darai E, Madelanat P. Myoma and infertility: analysis of the literature. *Gynecol Obstet Fertil* 2002; **29**: 450-451.
- Buttram VC Jr, Reiter RC. Uterine leiomyomata: aetiology, symptomatology, and management. *Fertil Steril* 1981; **36**: 433-445.
- Exacoustos C, Rosati P. Ultrasound diagnosis of uterine myomas and complications in pregnancy. *Obstet Gynaecol* 1993; **82**: 97-101.
- Ramavath KK, Pasumarthy SM, Srinivasa M. Postmyomectomy reproductive outcome in women above 35 years. *International Journal of Infertility and Fetal Medicine* 2011; **2**: 71-75.
- Vercillini P, Maddalena S, DeGiorgi O, Pesole A, Ferrari L, Crosignani PG. Determinants of reproductive outcome after abdominal myomectomy for infertility. *Fertil Steril* 1999; **72**: 109-114.