

Research Article

INDICATIONS AND OUTCOMES OF ABDOMINAL MYOMECTOMY AT A NIGERIAN TERTIARY HOSPITAL

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Abstract

Abdominal myomectomy is a common modality of treatment for large and symptomatic uterine fibroids in women who wish to retain their fertility. While it is the commonest conservative surgical procedure in such patients, it may still be associated with complications. The study was aimed at determining the indications and factors associated with development of complication in patients that undergo abdominal myomectomy. It was a descriptive retrospective study of patients who had abdominal myomectomy at the Federal Medical Centre, Yenagoa, Bayelsa state, Nigeria from the 1st of January 2018 to the 31st of December 2020. Over the 3-year study period, 391 gynaecological surgeries were performed, of which 89 abdominal myomectomies accounted for 22.8% of surgeries. Seventy-six case records out of the 89 case records were retrieved for analysis, giving a retrieval rate of 85.4%. A significant number of the women (39.5%) were in the 35–39 years age group and slightly above half of the women (55.3%) were nulliparous. Abdominal mass was the leading indication (65.8%), followed by heavy menstrual bleeding (13.2%). There were intra-operative complications and postoperative complications in 19.7% and 26.3% of patients respectively. The most common intra-operative complication was bleeding requiring blood transfusion. The notable post-operative complications were post-operative anaemia, postoperative pyrexia and wound infection in decreasing order. Outcome of abdominal myomectomy is generally favourable once the factors that lead to complications are promptly identified and addressed. Nevertheless, patients should be counselled preoperatively on the risk of blood loss and the possibility of blood transfusion.

Keywords: Uterine, fibroid, myomectomy, complications.

INTRODUCTION

Uterine fibroids are the most common pelvic tumours and the most common non-cancerous tumours in women of childbearing age (Omole-Ohonsi and Belga, 2012). Uterine fibroids are clinically apparent in 20% of women of reproductive age and may be present in as many as 70% of uteri removed at hysterectomy (Lumsden, 2010). They occur in 20% to 25% of women over the age of 30 years (Adesina *et al.*, 2017). Uterine fibroids are usually asymptomatic but patients may present with abdominal discomfort, pressure symptoms, abnormal uterine bleeding, and infertility. Some options available for treatment of uterine fibroids include expectant management, medical therapy, high intensity focused ultrasound, uterine artery embolization and surgery which can be minimally invasive or open surgery (Agboola *et al.*, 2021). Myomectomy is the surgical removal of the uterine fibroids (Geidam *et al.*, 2011). It is the commonest conservative surgical procedure which is offered to patients with symptomatic uterine fibroids and as a fertility enhancing procedure to some women with uterine fibroid when no other cause for sub fertility is evident (Geidam *et al.*, 2011). Myomectomy is commonly done through a laparotomy but it can also be performed laparoscopically, hysteroscopically, or vaginally (Geidam *et al.*, 2011). The percentage of gynaecological surgeries contributed by abdominal myomectomy in South-western Nigeria has been reported as 54.7% (Okogbo *et al.*, 2011), while a rate of 3.34% (Geidam *et al.*, 2011) has been reported for Maiduguri, North-Eastern Nigeria. Abdominal myomectomy is the commonest method of treating uterine fibroids and accounts for 60.4% of cases in

Ilorin (Omokanye *et al.*, 2012) and for 90% of cases in South-Eastern of Nigeria (Obuna *et al.*, 2008). Infertility secondary to uterine fibroid is one of the indications for myomectomy (Obed *et al.*, 2011); other indications include symptoms such as menorrhagia, recurrent pregnancy loss, dysmenorrhoea, lower abdominal swelling, and urinary frequency (Agboola *et al.*, 2021). Increasingly, more women are requiring myomectomy as part of infertility management and, partially because of delayed childbearing. Increasingly, larger uterine myomas are seen in women who desire future fertility irrespective of their age or the number, size, and location of myomas (Taulikar *et al.*, 2012). This increases the potential for complications, which can be intraoperative or postoperative. Intraoperative complications include intraoperative haemorrhage (most common complication), injury to adjacent organs (such as bowel, ureter, and urinary bladder), hysterectomy for uncontrollable haemorrhage and anaesthetic complications (Agboola *et al.*, 2021; Geidam *et al.*, 2011). Postoperative complications include pyrexia (occurs when blood loss during the procedure is high, the number of myoma removed is multiple, and may persist if there is underlying infection hence the need for prophylactic antibiotics and aseptic technique), wound haematoma and infection, sepsis, burst abdomen, adhesion formation, recurrence, and uterine rupture during pregnancy (Agboola *et al.*, 2021; Geidam *et al.*, 2011). With advances in surgical control of intraoperative bleeding during myomectomy along with safe anaesthesia and blood transfusion abdominal myomectomy has become a safe procedure (Geidam *et al.*, 2011). The aim of this study is to determine the indications and factors associated with development of complications in patients that undergo abdominal myomectomy at the Federal Medical Centre, Yenagoa.

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METHODOLOGY

The study was carried out in the Obstetrics and Gynaecology Department of Federal Medical Centre, Yenagoa. This was a descriptive retrospective study. Women who had abdominal myomectomy at the Federal Medical Centre, Yenagoa and covered a period of 3 years from the 1st of January 2018 to the 31st of December 2020. Information was obtained from the gynaecological ward register, theatre records, anaesthetist operation charts and retrieved patients case files. Data obtained were analysed using Statistical Package for Social Sciences (SPSS) version 25 and the results summarized using frequencies, percentages, tables and charts.

Data about the demographic and pre-operative characteristics of the patients was collected, including the age, parity, level of education, indications for the myomectomy, pre-operative packed cell volume, intraoperative and postoperative complications, and post-operative packed cell volume.

All the abdominal myomectomies were performed by using standard operative technique. Surgery was performed under general anaesthesia or regional anaesthesia in supine position. The abdomen was entered either through a Pfannenstiel or subumbilical midline incision depending on the uterine size. Haemostatic tourniquet using Foleys catheter (size 22 Fr) was applied at the cervico-isthmic junction to reduce intraoperative blood loss and was released intermittently to prevent ischemia. Fibroid cavities were closed with vicryl suture. Prophylactic antibiotics were administered to all patients and postoperative management was essentially in accordance with the established department guidelines.

Duration of operation was defined as the time between the skin incision and completion of skin closure as indicated on the anaesthetist operation charts. Estimated blood level was recorded from the operation notes as reported by the anaesthetic team. Haemorrhage was defined as any amount of bleeding affecting the hemodynamic status of the patient occurring within 24 hours to 7 days after surgery. Surgical site infection (SSI) refers to an infection that occurs after surgery in the part of the body where surgery took place.⁴ Wound infection is the discharge of pus from incision occurring 5–7 days after surgery.⁵ Wound dehiscence occurs when a surgical incision reopens either internally or externally. Pyrexia is a temperature of 38°C or more on two consecutive days after the first post-operative day. Uterine size and the size of fibroid nodules were as measured at surgery and documented in the operation notes. Prolonged hospital stay is defined as hospital stay longer than 7 days.

RESULTS

Sociodemographic characteristics of the study group

Over the 3-year study period, 391 gynaecological surgeries were performed. Abdominal myomectomies accounted for 22.8% (n = 89) of surgeries. Seventy-six case records out of the 89 myomectomy case records were adequate for analysis, giving a retrieval rate of 85.4%. Slightly below two-fifth (39.5%, n = 30) of the women were in the 35–39 years age group. Slightly above half (55.3%, n = 42) of the women were nulliparous and at least 4 out of every 10 cases (47.4%, n = 36), had tertiary level of education as shown in Table 1.

Table 1. Sociodemographic characteristics of the study group

Characteristics	Frequency	Percentage (%)
Age		
< 25 years	1	1.3
25 – 29 years	8	10.5
30 - 34 years	19	25.0
35 – 39 years	30	39.5
≥40 years	18	23.7
Total	76	100
Parity		
0	42	55.3
1 – 4	28	36.8
≥5	6	7.9
Total	76	100
Level of Education		
Primary	12	15.8
Secondary	26	34.2
Tertiary	36	47.4
No Education	2	2.6
Total	76	100

Presenting complaints of the patients

Table 2 depicts the presenting complaints of the patients, with most patients having more than one significant symptom. Abdominal mass was the commonest presenting complaint (34.0%), followed by heavy menstrual bleeding (28.8%), subfertility (26.8%), lower abdominal/pelvic pain (7.8%) and pressure symptoms (2.6%).

Table 2. Presenting complaints

Characteristics	Frequency	Percentage Of Patients (%)
Abdominal mass	52	34.0
Heavy menstrual bleeding	44	28.8
Subfertility	41	26.8
Lower Abdominal/Pelvic pain	12	7.8
Pressure symptoms	4	2.6
Total	153	100

Indications for myomectomy

Table 3 shows the indications for the myomectomy. Abdominal mass was the leading indication (65.8%), followed by subfertility (17.1%), heavy menstrual bleeding (13.2%), lower abdominal/pelvic pain (3.9%). Pressure symptoms were not the primary indication for surgery in any patient.

Table 3. Indications for myomectomy

Characteristics	Frequency (N = 76)	Percentage of patients (%)
Abdominal mass	50	65.8
Heavy menstrual bleeding	10	13.2
Subfertility	13	17.1
Lower Abdominal/Pelvic pain	3	3.9
Pressure symptoms	0	0
Total	76	100

Cadre of the lead surgeon at the myomectomies

Majority of the surgeries (89.9%) were led by consultants while senior registrars was the lead surgeons in 9 surgeries (10.1%) (Table 4).

Uterine sizes in weeks

The uterine size ranged from 12 to 36 weeks. Thirty eight (76%) of the patients had uterine sizes greater than 20 week. (Table 5)

Table 4. Cadre of lead surgeon at the myomectomies

Cadre of lead surgeon	Frequency (N = 89)	Percentage (%)
Consultants	80	89.9
Senior Registrars	9	10.1
Total	89	100

Table 5. Uterine sizes in weeks

Uterine size in weeks	Frequency (N = 50)	Percentage of patients (%)
≤12	2	4.0
13 – 20	10	20
21 – 28	28	56
29 – 36	10	20
>36	0	0
Total	50	100

Estimated blood loss at myomectomy

The estimated blood loss (EBL) for all procedures was between less than 500ml to 2500ml with the EBL being less than 500ml in about 64% of cases. (Table 6)

Table 6. Estimated blood loss at myomectomy

EBL (ml)	Frequency	Percentage of patients (%)
<500	57	64
500 -999	23	14.9
1,000 -1,499	8	9.0
1,500 -1,999	0	0.0
2,000 -2,499	0	0.0
≥2500	1	1.1
Total	89	100

EBL – Estimated blood loss, ml - millilitre

Pre-and Postoperative packed cell volume (PCV)

The pre-operative PCV range was 27–33% in 39 (51.3%), although 6 (7.9%) had a pre- operative PCV of 21 - 27% while about 45 (59.2%) had a postoperative PCV range of 27–33% and 8 (10.5%) had a postoperative PCV of 21-27%. (Table 7)

Table 7. Packed cell volume results

Packed cell volume	Frequency (N = 76)	Percentage (%)
Pre-op PCV		
21 - 27	6	7.9
27 - 33	39	51.3
>33	31	40.8
Post-op PCV		
21 - 27	8	10.5
27 - 33	45	59.2
>33	23	30.3

PCV – Packed cell volume

Intraoperative complications

Figure 1 shows that there were intra-operative complications and postoperative complications in 19.7% and 26.3% of patients respectively. The most common intra-operative complication was bleeding requiring blood transfusion and majority of the patients had no complication.

Postoperative complications

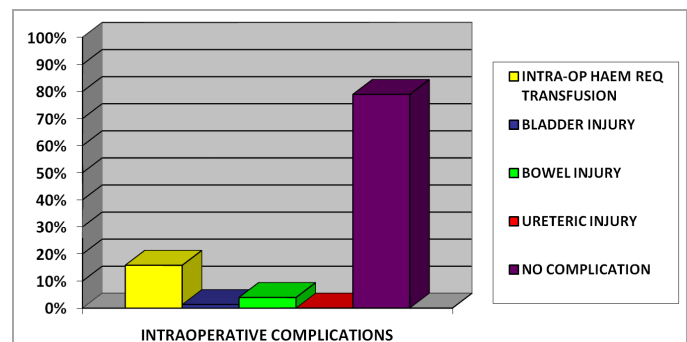
As seen in Table 8, the total number of patients with post-operative complications was 20 (26.3%) and those without post-operative complication were 56 (73.7%). The total

number of complications was 23 and that the notable post-operative complications were post-operative anaemia, postoperative pyrexia and wound infection in decreasing order. However, some patients had more than one complication.

Table 8. Postoperative complications

Postoperative complications	Frequency	Percentage (%)
Moderate anaemia requiring transfusion (Symptomatic)	8	34.7
Postoperative pyrexia	5	21.7
Wound haematoma	1	4.4
Intestinal obstruction	2	8.7
Wound infection	3	13.0
Wound dehiscence	1	4.4
Pelvic abscess	2	8.7
Uterine Sepsis	1	4.4
Total (complications)	23	100

N/B: Some patients had more than one complication.

**Figure 1. Intraoperative complications**

DISCUSSION

Abdominal myomectomy made up about 22.8% of gynaecological surgeries in our centre in the study period and this was similar to that of Ibadan (22.3%) (Agboola *et al.*, 2021). Majority of the patients were within the age group of 35–39 years (39.5%) followed by ≥ 40 years (23.7%) and this was similar to those of Ibadan (Agboola *et al.*, 2021) and Maidugiri (Geidam *et al.*, 2011). This is because leiomyoma is more prevalent in these age groups. Majority (47.4%) had tertiary education and 55.3% were nulliparous, these were similar to the Ilorin (Adesina *et al.*, 2017) study. The most common indication for abdominal myomectomy was abdominal mass (65.8%), similar to the finding of the Maidugiri (Geidam *et al.*, 2011) study (63.7%). The presence of a large fibroid seems to be a more common reason to require surgery in our environment. However, the commonest presenting complaint was abdominal mass (34.0%), followed by Heavy menstrual bleeding accounting for 28.8% and subfertility 26.8% of the symptoms in this study which is comparable with findings in Maidugiri (Geidam *et al.*, 2011). Majority of patients in this study had uterine sizes of greater than 20 weeks' gestation similar to those of Ibadan (Agboola *et al.*, 2021) and Maidugiri (Geidam *et al.*, 2011), due to the fact that many patients have a poor health seeking behaviour while they prefer alternative medicine hence the late presentation, and this was a major predictor of intraoperative haemorrhage, blood transfusion and longer hospital stay. Large uterine fibroids are those corresponding to or greater than uterus of 16 weeks size, (Adesina *et al.*, 2017; Agboola *et al.*, 2021) hence; most of the patients in this study had large uterine fibroids. Haemostatic tourniquet with Foley's catheter (size 22 Fr) at the cervico-isthmic junction was applied in all cases as

this has been proven to be effective in reducing intraoperative blood loss (Agboola *et al.*, 2021). The average complication rate in this study (23%) was similar to that of Ibadan (27.2%) (Agboola *et al.*, 2021), lower than that of Ilorin (74.8%) (Adesina *et al.*, 2017) but, higher than Maidugiri (10.9%) (Geidam *et al.*, 2011). This is because most of the surgeries (89.9%) were done by consultants. Also, most patients did not have previous histories of surgeries that could predispose them to adhesions; and increase the risk of intraoperative complications. Haemorrhage was the most notable intraoperative complication and also, postoperative anaemia, pyrexia and wound infections were also notable postoperative complications as with many other studies (Adesina *et al.*, 2017; Agboola *et al.*, 2021; Geidam *et al.*, 2011). In this study, 45 (59.2%) patients had mild anaemia post operatively and did not require transfusion. However, 8 (10.5%) patients with moderate anaemia were symptomatic; hence, transfused. Most patients did not require transfusion after assessing their postoperative packed cell volume because they were transfused intraoperatively and immediate postoperatively. The estimated blood loss was less than 500 ml in 64% of the cases, which was similar to the finding in Maidugiri (Geidam *et al.*, 2011). This may be as a result of the use of tourniquet to occlude the uterine blood vessels in order to reduce blood loss during surgery. EBL >500 ml could result in postoperative anaemia and therefore risk of infection which was minimal in this study. Wound infection contributed 13% of the 23 complications seen in this study. Postoperative pyrexia was seen in only five patients indicating that there was minimal blood loss into the peritoneal cavity during the operations and no dead space was left in the myoma beds, as these are the most important causes of postoperative pyrexia.

Conclusion

The leading indication for myomectomy was found to be abdominal mass. Complications from abdominal myomectomy was found to be minimal in this study and generally includes intraoperative haemorrhage requiring blood transfusion, damage to surrounding structures at surgery, post-op anaemia, pyrexia, and surgical site infection, etc. Intraoperative haemorrhage requiring blood transfusion is the most common and significant complication that can follow abdominal myomectomy. It is recommended that cases of heavy uterine bleeding should be optimized before myomectomy as was done for majority of our patients and effort should be made at reducing blood loss during the procedure to prevent development of complications.

Statement of competing interest

The authors have no competing interest.

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