Delayed presentation of giant uterine fibroids in a Nigerian private specialist health facility

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Abstract
Giant uterine fibroids (leiomyoma or myomas) which are fibroid masses greater than 11.4 kg are very rare. Although benign in nature, it may present with symptoms that impact negatively on the quality of life and health of the patient and impose greater management challenges. We present two cases of giant uterine fibroids that were successfully managed in a private specialist hospital without complications. Case 1 was a 38-year-old nulliparous Nigerian woman who presented with giant uterine fibroids (11.6 kg) who initially had delay of surgery due to fear that after surgery she may lose her “womb” or not be able to conceive after the operation. Later, she had successful open abdominal myomectomy, with the use of Foley catheters as improvisation for tourniquet and abdominal drain. Anti-adhesion agent was not used. Case 2 was a 47-year-old nulliparous Nigerian teacher with giant fibroids (13.2 kg) who also initially had delayed surgery due to fear that fibroid surgery is a major operation that it may get complicated and she may die. Also, she was afraid that she may not have her womb in her next world if she gets reincarnated. She had total abdominal hysterectomy and bilateral salpingo-oophorectomy without complications. For both cases, pre-surgery leiomyosarcoma assessment with computed tomography scan or magnetic resonance imaging and anti-adhesion agent were not used due to very unaffordable high costs. These reports of giant uterine fibroids (leiomyoma or myomas) are very rare gynecological entity, and management can be successful despite overwhelming challenges in low-income countries. Cheaper, affordable and available alternatives (improvises) can be resorted to for tackling its challenges in low-income settings.

Keywords
Giant fibroids, leiomyoma, myomectomy, total abdominal hysterectomy

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Introduction
Uterine fibroids are the most common uterine neoplasm of women of reproductive age group that arise from smooth muscle and connective tissue of the uterus.¹,² The prevalence is between 20% and 40% in women of reproductive age group.³ Uterine fibroids are said to be giant when the fibroid tissues weighed more than 11.4 kg.⁴ It is a rare occurrence since only about 100 cases of giant fibroids have been reported worldwide.⁴ Most of the cases were reported in low- and middle-income countries and mostly due to ignorance, poverty and delay in seeking for health care and may impact negatively on the quality of life of the patient and may impose...
greater management challenges.\textsuperscript{5,6} The management of giant fibroids can be challenging because of complications like massive intractable bleeding associated with such cases and high risk of injuries to the surrounding structures.

We present two case reports and literature review with accompanying learning points of giant uterine fibroids which were managed successfully in Life International Hospital, Awka (LIHA), Anambra state, Nigeria, despite the associated greater management challenges. LIHA is a private specialist hospital with three gynecologists and other specialists. They do between 80 and 100 fibroid operations (myomectomies and hysterectomies) in a year. The operations were either through laparoscopic or open abdominal means.

The learning points in these case reports include the following: First, the surgeries were initially delayed due to fear of surgery or fear of unknown. Second, the lack of suitable instrument for tourniquet, and the resort to the use of Foley catheter as improvise equipment. Third, the lack of use of anti-adhesion agents as its use was too expensive to be used routinely in gynecological surgery in low-income settings. Fourth, the use of Foley catheter as improvise for abdominal drain which was inserted to serve as “second eye” for the surgeon. Fifth, the non-use of computed tomography (CT) scan or magnetic resonance imaging (MRI) as pre-surgery leiomyosarcoma assessment. This is because the CT or MRI is rarely available and their cost is very high which the two patients could not afford.

Although there are prior case reports on giant uterine fibroids managed in Nigeria, none has provided the possible reasons for delayed presentation or consensus on the management of it, thus providing huge gaps in knowledge of management of these cases.\textsuperscript{7–9}

**Case presentations**

**Case 1**

She was a 38-year-old Nigerian nulliparous woman who presented to a private health facility “Life International Hospital,” Anambra State, Southeast Nigeria, with 5 years history of progressive abdominal swelling. The swelling was initially at the lower abdomen, but progressively increased to involve the whole abdomen. She had a regular 28-day cycle with normal 4 days flow until 6 months prior to presentation when she noticed that her menstrual flow has increased in quantity and duration. The duration increased to between 10 and 14 days with associated passage of clots, dizziness and fainting spells.

There was associated loss of appetite and easy satiety; as she attributed it to the abdominal swelling. There was also associated urinary frequency, but there was no difficulty in passing urine. There was no associated constipation. She first presented to a private hospital where clinical diagnosis of uterine fibroids was made 3 years prior to presenting to Life International Hospital. At the initial private hospital, she was evaluated, counseled and was booked for open myomectomy but she declined. She was afraid that she may lose her “womb” after the surgery or it may affect her fertility. She subsequently presented to Life International Hospital when her abdominal swelling condition got worse, and also following the advice of a friend who previously had a successful open abdominal myomectomy at Life International Hospital.

At presentation, physical examination revealed that she was chronically ill looking and pale. Her vital signs were normal except for her pulse rate that was 120 beats per minute. The chest was clinically clear. Her abdomen was grossly distended. There was a huge abdomino-pelvic mass of about 38 weeks’ size. The mass was non-tender, firm and relatively mobile side by side with multiple nodules. The pelvic examinations showed uterine cervix that was drawn upward and was health looking. There was a firm mass in the pouch of Douglas.

Her full blood count showed hemoglobin estimation of 7 g/dL while other investigations were normal. Abdomino-pelvic ultrasound revealed multiple mixed echogenic masses on the uterus. The endometrial lining was distorted by the masses. The fibroids were FIGO class 2–5. Intravenous urogram showed mild right hydronephrosis. CT scan or MRI for pre-surgery leiomyosarcoma assessment was not done because the patient could not afford its high cost. She was later admitted and anemia was corrected with blood transfusion. She received 3 units of sedimented cells (1 unit daily) and post transfusion hemoglobin level was 10.2 g/dL.

She later had open abdominal myomectomy through a vertical midline incision on the anterior abdominal wall under combined spinal and epidural anesthesia. The uterus was riddled with multiple fibroids. Tourniquet was applied with size 22 Foley catheter at the base of the broad ligament, below the fallopian tubes and ovaries. Then fibroid masses were enucleated through three anterior incisions and one posterior incision on the uterus. The tourniquet was released every 20–30 minutes for 10–30 seconds to allow for revascularization of the uterus. The tourniquet was released 7 g/dL while other investigations were normal. Abdomino-pelvic ultrasound revealed multiple mixed echogenic masses on the uterus. The endometrial lining was distorted by the masses. The fibroids were FIGO class 2–5. Intravenous urogram showed mild right hydronephrosis. CT scan or MRI for pre-surgery leiomyosarcoma assessment was not done because the patient could not afford its high cost. She was later admitted and anemia was corrected with blood transfusion. She received 3 units of sedimented cells (1 unit daily) and post transfusion hemoglobin level was 10.2 g/dL.

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The excised mass was one huge fibroid (24 cm × 18 cm × 14 cm) with 22 other smaller ones. The mass weighed 11.6 kg (Figure 1(b)). Microscopic examination showed leiomyoma uteri with cystic and degenerative changes. There was no evidence of malignancy.
Case 2

A 47-year-old Nigerian peri-menopausal nulliparous teacher presented with 10 months history of progressive abdominal swelling and abdominal pain. She developed lower abdominal swelling about 4 years prior to presentation. The swelling had remained the same until 10 months prior to presentation when she noticed rapid progression in the swelling. This was associated with easy satiety and progressive weight loss. There was also associated generalized abdominal, waist pain and weakness.

She first presented to a private hospital where an ultrasound diagnosis of uterine fibroids was made. She was booked for exploratory laparotomy but she declined due to fear of surgery. She thought she may die from the surgery because she was told that it would be a “major operation.” Also, there was fear that she will lose her “womb” in her next world if she reincarnated. She then restored to herbal medications. She presented to us when her symptoms were getting worse and advice of her relative.

At presentation, she was chronically ill looking middle age woman in mild painful distress. She was pale. Her blood pressure was 130/60 mmHg, pulse rate was 130 beats per minute and respiratory rate was 44 cycles per minute. Her abdomen was grossly distended with generalized mild tenderness. A 40-week abdomino-pelvic mass was palpated. The mass was relatively mobile side by side but fixed posteriorly. A provisional diagnosis of degenerative giant uterine fibroids to rule out leiomyosarcoma with anemia was made. She was admitted in the ward for stabilization and surgery.

Her full blood count showed hemoglobin estimation of 6 g/dL and white blood cell count of $16 \times 10^6$ cell/L with relative neutrophilia (70%). Other investigations done were normal. Abdomino-pelvic scan done showed the uterus riddled with multiple mixed echogenic masses distorting the endometrial stripe. The fibroids were International Federation of Gynaecology and Obstetrics (FIGO) class 2–5. The CT scan or MRI for pre-surgery leiomyosarcoma assessment was not done because the patient could not afford its high cost.

She received four units of sedimented cells (a unit daily) and intravenous ceftriazone 1g daily and metronidazole 500mg 8 hourly for 48 h. Her post transfusion full blood count showed hemoglobin of 10.8 g/dL and white blood cell count of $8 \times 10^9$/L.

She had total abdominal hysterectomy with bilateral salpingo-opherectomy (TAH-BSO) on the sixth day of admission under epidural anesthesia, through a midline anterior abdominal incision. During the hysterectomy, we embarked on numerous steps to avoid ureteral injury. Specifically, the first step we did was to identify the ureter at the pelvic brim trans-peritoneally and we followed it caudally along the lateral pelvic side wall to where it disappears under the uterine arteries in the broad ligament. This step avoided the risk of ureteral injury at the pelvic brim during securing and transecting the infundibulopelvic ligament (ovarian vessels) with sutures. The second step we did was to incise the round ligament and open anterior leaf of the broad ligament and peritoneum overlying the bladder and cervix and we reflected it downward below the junction of the uterus and internal cervical os. This step displaced the ureter downward and laterally toward the uterine artery. The third step we did was to skeletonize the uterine arteries bilaterally which displaced the ureter further downward and laterally to the uterine arteries prior to securing and transecting the uterine arteries.

The intraoperative findings included uterus riddled with fibroid masses of different sizes and hyper-vascularized omentum that was adherent to the posterior wall of the uterus. The adhesion was relieved with both monopolar diathermy and ligation of bigger vessels before TAH-BSO was done (Figure 2). The large vessels and accompanying omentum was stepwise double clamped and ligated after cutting with monopolar diathermy. The estimated blood loss was 300 mL. She received a unit of blood intraoperatively. She made a good post-operative recovery and was discharged on the eighth post-operative day after removal of skin stitches in satisfactory condition.

She presented to the clinic with histology report for check-up 2 weeks later. The report showed fibroid mass that measured $22 \text{ cm} \times 19 \text{ cm} \times 15 \text{ cm}$ and weighed 13.2 kg.
Histology showed leiomyoma with both cystic and red degenerative changes. There was no evidence of malignant changes. The wound site had healed well. She was counseled and was discharged from the clinic.

Discussion

Although uterine fibroids are common benign gynecological neoplasm, the giant form is a rare entity. Only few cases of giant fibroids have been documented worldwide. The largest uterine fibroids ever reported weighed 63.3 kg and was removed postmortem in 1888, while the largest reported case removed from a live patient weighed 45.5 kg. Uterine fibroids are said to be giant when it weighs more than 11.4 kg, or diameter of more than 17 cm or dimension of 33 cm × 28 cm × 22 cm. It is common in black nulliparous women and those with poor health-seeking behaviors. Giant uterine fibroids may be life threatening as it may exert pressure effect on the adjacent structures like heart, lungs, ureters or even the vena cava preventing venous return and its consequent effects to the heart and the lungs. The two cases reported above weighed 11.6 kg and 13.2 kg, respectively. There was pressure effect on the right ureter in the first case. Also, both cases were on nulliparous patients and they initially restored to intake of herbal medications before seeking for proper health care.

Common presentations of uterine fibroids are chronic pelvic pain, menorrhagia, dyspareunia, infertility and pressure effects on the surrounding structures. Giant fibroids are more likely to produce pressure effect. Most of the patients with uterine fibroids present late for proper medical care, most times they present when alternative or herbal medications have failed. The two cases reported above presented late after initial intake of herbal medications. Their surgeries were initially delayed due to fear of surgery. This may have been due to cultural belief that once surgery is done, there will be “no womb” in the second world or surgical removal of the fibroids may impair fertility. In a previous report by Millien et al., it was revealed that patients with fibroids may at times refuse surgery for fibroids because of the fear of losing their fertility, the reputation of the hospital and its personnel, the desire to be pregnant before surgery, the lack of income to look for care and peer advice. Millien et al. report concluded that “vicious cycle of poverty negatively impacts access to care for uterine fibroids.”

Ultrasound was the initial screening tool for uterine fibroids because it is non-invasive and cost-effective. Ultrasound is easily available even in low- and middle-income settings and can be performed in out-patient basis. Both cases reported had ultrasound scan that suggested uterine fibroids before surgical management and final histo-pathologic confirmation of uterine fibroids. Other imaging studies like CT scan and MRI may be helpful in especially in ruling out malignant transformation and other differential diagnosis, but they have some drawbacks and limitations. The non-use of CT scan or magnetic MRI for pre-surgery leiomyosarcoma assessment is also a learning point. This is because CT or MRI is rarely available and their cost is very high which the two patients could not afford. We then restore to clinical assessment and post-operative histology assessment for decision making. Uterine fibroids and normal myometrium are sometimes not distinguishable on CT scan except when there are calcific or necrotic changes while MRI which is a better diagnostic tool for soft tissue tumors is not easily available and very expensive.

The treatment of patient with giant uterine fibroids is individualized, as the determining factors are the severity of the symptoms and need to preserve fertility. Surgical treatment which could be either hysterectomy or myomectomy is the mainstay of management of patients with giant uterine fibroids. The surgical management is usually a big challenge due to massive blood loss during the surgery and
other complications like injury to the adjoining structures, infections and complications of blood transfusion.\textsuperscript{4} In attempt to reduce massive blood loss during surgery, surgeons have used gonadotropin-releasing hormone (GnRH) analogue before surgery.\textsuperscript{16,17} The GnRH analogue works by suppressing estrogen production, thereby reducing the size of the fibroids and blood supply. The high cost of GnRH analogue is the major limiting factor to its use especially in low-income countries like ours.

Also, uterine artery embolization some weeks before surgery has been advocated by some surgeons.\textsuperscript{4} It aims at reducing blood loss during surgery by causing myoma infarctions with less adverse effect. However, the skill for uterine artery embolization is rarely available especially in low-income countries.

The lack of suitable instrument for tourniquet and the resort to the use of Foley catheter as improvised equipment is also another learning points. The use of tourniquet applied at the base of the broad ligament during myomectomy has been very helpful in reducing blood loss and need for blood transfusion.\textsuperscript{18,19} This has been the common method of minimizing blood loss during myomectomy in low-income countries as it does not need a special skill or technology to apply. Since tourniquet was used in the first case reported; it drastically helped to minimize the blood loss during the myomectomy despite the huge nature of the mass.

The lack of use of anti-adhesion agents as its use was too expensive to be used routinely in gynecological surgery in low-income countries was also worthy of mention as a learning point in these case reports. We therefore applied minimal tissue handling and avoided posterior uterine incisions as much as possible. Additionally, the use of Foley catheter as improvises for abdominal drain was inserted to serve as “second eye” for the surgeon. When Foley catheters are used for abdominal drain, multiple openings are created by the surgeon to enhance drainage function.

The limitations of our report included our inability to produce the histopathology slices of the reports as well as ultrasound images. This will be considered in the future case series of the reports.

**Conclusion**

We conclude that this report of two cases of giant uterine fibroids has revealed that successful surgical treatment could be either hysterectomy or myomectomy with associated major challenges in low- and middle-income settings. Although surgeries were initially delayed due to fear of surgery, management challenges were associated with the use of Foley catheters as improvised equipment for tourniquet and abdominal drain, lack of use of anti-adhesion agents and non-use of CT scan or MRI for pre-surgery leiomyosarcoma assessment due to very high costs. Majority of our patients could not afford to pay for them. Therefore, cheaper, affordable and available alternatives or improvises can be resorted to for tackling the mammoth challenges of giant uterine fibroids in low-income settings.

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**Informed consent**

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