

Haemoperitoneum due to Spontaneous Bleeding from Uterine Leiomyoma

Abraham Tunde Oladimeji¹, Edokpolor Osazuwa Ede², Emmanuel Ajibola Jeje³, Olukayode Azeez Oseni⁴

¹Department of Surgery, Federal Medical Centre, Ebute Metta, Lagos, ²Obstetrics and Gynaecology Unit, Marigold Hospital and Critical Care Centre, Lagos, ³Department of Surgery, College of Medicine, Lagos University Teaching Hospital, University of Lagos, Lagos, ⁴Department of Surgery, Lagos University Teaching Hospital, Lagos, Nigeria

Abstract

Background: Uterine leiomyoma is the most common pelvic tumor in women. Grave complications from this benign tumor are infrequent though can be life-threatening. This report is of a rare case of haemoperitoneum secondary to spontaneous bleeding from a uterine leiomyoma. **Case Report:** A 36-year-old single female presented with generalized acute abdominal pain and weakness. Clinical examination revealed a distended abdomen with initially stable vital signs. Few hours on admission, her vital signs became unstable. After assiduous resuscitation, abdominopelvic ultrasound scan (USS) and computed tomography imaging of the abdomen showed an intraperitoneal fluid collection and multiple large pedunculated subserosal uterine leiomyomata. Emergency laparotomy was performed, and the bleeding blood vessel overlying the anterior surface of the largest pedunculated subserosal leiomyoma was identified and ligated. The uterine myomas were excised completely and histology corroborated the diagnosis of benign leiomyomata. The postoperative period of the patient was uneventful. She was discharged from the hospital without complications on the seventh day of admission. **Conclusion:** Haemoperitoneum secondary to spontaneous bleeding of uterine leiomyoma is rare. Surgeons should consider the probability of this complication in women with acute abdominal pain and a history of uterine leiomyoma.

Keywords: Bleeding, haemoperitoneum, uterine leiomyoma

INTRODUCTION

Uterine leiomyoma, also known as uterine fibroid, is the most common pelvic tumour in women.^[1] It has different growth rates and develops from the myometrium. Uterine leiomyoma may be found within the uterine wall (intramural) or protrudes into the lumen (submucosal) or may appear near the uterine surface (subserosal).^[2]

The majority of these benign tumours are symptomless and small in size.^[3] Aside from abnormal uterine bleeding and reproductive dysfunction, other symptoms of fibroid may include grave complications such as acute urinary retention and renal failure, intraperitoneal haemorrhage, mesenteric vein thrombosis, intestinal gangrene, acute torsion of a subserous leiomyoma, and acute vaginal bleeding.^[4] The foregoing intricacies may be infrequently encountered, appropriate diagnosis and interdisciplinary possible diagnoses are very important because they may lead to serious morbidity and sometimes mortality.

CASE REPORT

A 36-year-old single female presented to the emergency unit following referral on account of acute abdominal pain and a pelvic mass. There was associated generalized body weakness. She had no preceding history of trauma to the abdomen or exertion. There was no history of usage of anticoagulants. There were no medical comorbidities. Initial evaluation revealed a conscious young female with the following vitals: temperature – 36.5°C, respiration rate (RR) – 18 cycles/min, pulse rate (PR) – 90 bpm, and blood pressure (BP) – 110/76 mmHg. Her abdomen was mildly tender. On reevaluation about four hours later on admission,

Address for correspondence: Dr. Abraham Tunde Oladimeji,
Department of Surgery, Federal Medical Centre, Ebute Metta, Lagos State,
Nigeria.
E-mail: babsology@yahoo.com

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she appeared pale, and her vitals were: temperature- 36.7°C, RR – 20 cycles/min, PR – 107 bpm, and BP – 85/55 mmHg. The patient's abdomen was distended and tender, resembling a pregnancy at 22 weeks. Her pregnancy test was negative. The initial assessment was acute abdomen (?cause) to rule out ovarian accidents.

Haemoglobin level dropped from 9.9 to 8.1 g/dl and she was transfused with a pint of packed red blood cells preoperatively. Abdominopelvic ultrasound scan (USS) revealed multiple large pedunculated leiomyomata with peritoneal collection having low-level internal echoes possibly haemoperitoneum. Following active resuscitation, her vital signs normalized, and abdominopelvic computed tomography (CT) scan showed pedunculated uterine leiomyomata (147 mm × 114 mm, 59 mm × 52 mm, and 45 mm × 33 mm) and bilateral complex ovarian cysts (42 mm × 34 mm – right, 37 mm × 36 mm – left) likely hemorrhagic cysts [Figure 1]. Our differential diagnosis included a haemorrhagic ovarian cyst and a ruptured ovarian cyst.

A gynecological consultation was requested, who made the diagnosis of intraperitoneal haemorrhage secondary to ?ruptured corpus luteum cyst to rule out bleeding from a ruptured fibroid vessel. The patient was worked up and had emergency laparotomy through a midline infraumbilical incision. Intraoperative findings included about two liters of haemoperitoneum with clots, two subserosal uterine leiomyomata with a large bleeding blood vessel seen at the anterior surface of the pedunculated leiomyoma close to the fundus [Figure 2]. The right ovary and fallopian tube were grossly normal. The left ovary has follicular cyst with fibrinous exudates around the left fallopian tube. Myomectomy was done and two fibroid nodules were removed. The histopathology of the resected tumour confirmed the diagnosis of leiomyomata. She had two pints of blood transfused intraoperatively and another two pints of blood postoperatively. The postoperative packed cell volume was 36.3%. The patient had no postoperative complications and was discharged seven days following admission.

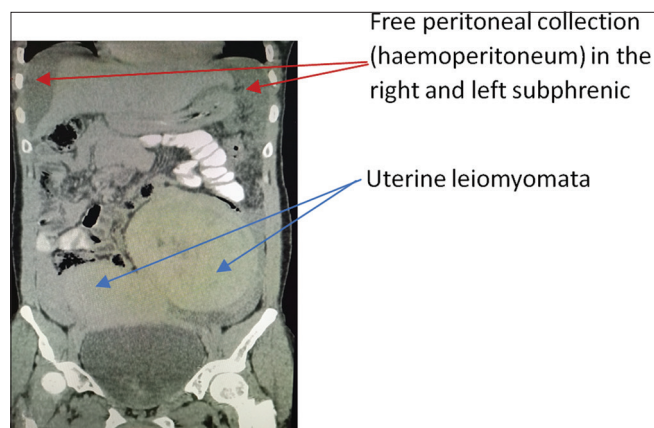


Figure 1: Coronal view of abdominopelvic contrast-enhanced (computed tomography) imaging. The blue arrows indicate the heterogeneous uterine masses (leiomyomata). The red arrows denote peritoneal collection with an imaging density suggestive of blood

DISCUSSION

Uterine leiomyoma occurs predominantly among females of reproductive age, between 30 and 40 years of age.^[5] The incidence is higher in black women than the white women.^[1] Some other factors linked with an increased risk of uterine leiomyoma also include Asian and Afro-Caribbean ethnicity, early menarche, nulliparity, use of hormonal contraceptives, obesity, and a positive family history of uterine fibroid.^[1,6] Uterine leiomyoma can be categorized using its location within the uterus as submucosal, intramural, subserosal, and pedunculated subtypes.^[7] The management of this benign tumour is influenced by the number, location, and size of the tumours and can follow observation and medical or surgical treatment pathways.^[6]

Intraperitoneal haemorrhage is a rare complication due to bleeding from uterine leiomyoma and is a life-threatening condition.^[8] In the literature, <100 cases of haemoperitoneum associated with uterine leiomyoma have been reported.^[9] The mechanism of rupture of serosal blood vessels in such instances is still not clear. Many factors, including trauma, exercise, defecation, menstruation, and alcohol consumption, have been described as causes of rupture of serosal blood vessels overlying the subserosal uterine fibroid.^[1] However, the patient in this case report did not have any of the risk factors mentioned as she was sleeping when the sudden abdominal pain started. Other causes of haemoperitoneum in relation to leiomyoma include a ruptured leiomyoma, bleeding from a subserosal artery, a lacerated leiomyoma, or an avulsed pedunculated leiomyoma.^[10] The majority of cases of bleeding from a uterine leiomyoma have been associated with trauma or torsion of the tumour. Unprovoked rupture of the superficial vessels is very rare.^[11] Horowitz *et al.*^[12] propounded that uterine leiomyoma >10 cm in diameter might be associated with stretching and tension of the overlying blood vessels resulting in rupture. The diameter of the largest leiomyoma over which the bleeding vessel was seen was 14.7 cm [Figure 2].

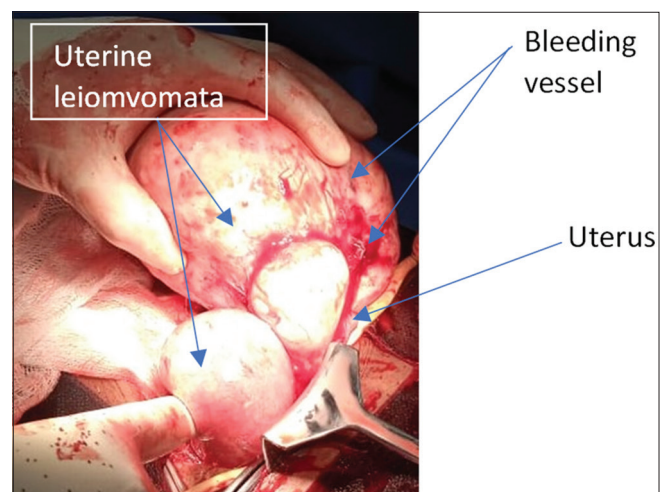


Figure 2: Multiple uterine leiomyomata with actively bleeding superficial ruptured vessel overlying the huge subserosal pedunculated leiomyoma

Furthermore, our patient presented with initially stable vital signs before worsening within a short period of time. This contrasts with cases presented by Althobaiti *et al.*^[13] and Daimon *et al.*^[14] where their patients presented with unstable vital signs.

A definite preoperative diagnosis can be very difficult to establish in these cases. In a review, the precise diagnosis was made preoperatively in a mere 7.8% of cases.^[15] Ultrasound and CT scans can identify haemoperitoneum but usually do not reveal the source of the bleeding.^[16] In these cases, prompt diagnosis and emergency surgical intervention ranging from ligation of the bleeding blood vessel to myomectomy or hysterectomy, can prevent catastrophic consequences.^[15] Hence, also in our case, both the abdominopelvic ultrasound and CT scans were suggestive of haemoperitoneum associated with uterine leiomyoma but could not accurately determine the source of bleeding [Figure 1]. We performed laparotomy for the diagnosis and treatment of the source of the bleeding. The volume of haemoperitoneum in this case was about two liters like what was found by Daimon *et al.*^[14] and far <4.6 L reported by Althobaiti *et al.*^[13] Althobaiti *et al.*^[13] performed a total abdominal hysterectomy and salpingectomy because the patient was postmenopausal (48-year-old) and has two children. We performed myomectomy on our patient who was a 36-year-old single woman just like Daimon *et al.*^[14] did for their patient who was a 26-year-old single woman.

This case study is to intensify the benefits of close monitoring of patients with acute clinical presentations as their clinical condition can deteriorate within a jiffy. Furthermore, there is a need for high index of suspicion in a female with a history of uterine leiomyoma presenting with abdominal signs and features of anaemia. This is because the precise preoperative diagnosis of haemoperitoneum secondary to bleeding vessel is still challenging even with the use of abdominopelvic CT scan.

CONCLUSION

Haemoperitoneum as a result of spontaneous bleeding is an infrequent occurrence with uterine leiomyoma that presents in women in reproductive age. Prompt diagnosis and appropriate interventions are necessary as this can be a life-threatening condition. As this case report has pointed out, comprehensive clinical history and examination are necessary to eliminate conditions that may present with comparable symptoms and signs such as trauma to the abdomen or pregnancy. Albeit ultrasonography is a safe imaging, abdominopelvic CT scan provides more diagnostic details. Rapid surgical intervention is advocated to establish the diagnosis, control bleeding, and reduce morbidity and mortality.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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