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Case Report

Spontaneous hemoperitoneum due to ruptured myoma vessels in a nulliparous woman

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ABSTRACT

Spontaneous hemoperitoneum due to ruptured myoma vessels is a rare but potentially life-threatening condition. A 37-year-old nulliparous black West-African woman presented in hypovolemic shock with a tender and distended abdomen. During exploratory laparotomy, a large fundal subserosal myoma with an actively bleeding vein was identified yielding 2.2 l of hemoperitoneum for which myomectomy and peritoneal lavage was done. This case underscores the importance of considering spontaneous rupture of myoma vessels as a differential diagnosis of acute abdomen in women with uterine fibroids. Rapid diagnosis and surgical management are essential to prevent morbidity and mortality.

Keywords: Hemoperitoneum, Myoma, Shock, Case report

INTRODUCTION

Spontaneous hemoperitoneum due to ruptured myoma vessels is a rare but critical condition. Exact etiology of leiomyomas is not known but are common among women of black descent, obese, nulliparous and also runs through families.[1] Uterine leiomyomas are prevalent in Black-African women of reproductive age and is associated with several complications.[1]

The common presentations are abnormal vaginal bleeding, increased frequency of micturition due to compression, lower abdominal pain and subfertility.[2] However, spontaneous rupture leading to significant intra-abdominal bleeding are infrequent yet can be life-threatening.[2]

This case report details the clinical presentation, diagnosis, management, and outcome of a nulliparous woman who developed hemoperitoneum from a spontaneous ruptured myoma vessel. It represents a significant addition to the existing body of knowledge.

CASE REPORT

A 37-year-old woman (West African descent), Parity 0 +1induced abortion, was brought to the EU (Emergency Unit) following complaints of severe abdominal pain and sudden collapse. Her altered mental status precluded a detailed history. On initial assessment, she was found to be hypotensive with a blood pressure of 79/54 mmHg and a weak, thready pulse rate of 113 bpm. She was extremely pale, anicteric, confused, diaphoretic with a delayed capillary refill time.

The abdominal examination revealed a grossly distended and generally tender abdomen with guarding and rebound tenderness. No organs or masses were readily palpable or ballotable. The severe pain and deteriorating hemodynamic state prevented a thorough abdomino-pelvic examination. Immediate resuscitation was initiated, and a series of diagnostic tests were ordered, including a urine pregnancy test, complete blood count, and blood typing for three units of crossmatched blood. An urgent

abdominopelvic ultrasound revealed massive intraperitoneal fluid with low-level internal echoes and a 14.5×13.8 cm heterogeneous right adnexal mass with no blood flow on color Doppler. The uterus measured 9.5×4.0×5.6 cm, with a uniform endometrial thickness of 10.8 mm and multiple small intramural nodules in both the anterior and posterior walls with the largest nodule showing degenerative changes.

The urine pregnancy test was negative. The preliminary diagnosis was haemorrhagic shock secondary to a ruptured right ovarian cyst. The patient was prepared for an urgent exploratory laparotomy. Under standard operating theatre conditions and general anesthesia, a midline incision was made to access the abdominopelvic cavity. During the procedure, 2.2 l of venous blood was evacuated via suction. A large fundal broad-based pedunculated subserosal myoma with an actively bleeding vein on its posterior surface was identified and exteriorized. Myomectomy was performed to remove the 2.90 kg, 20.0×12.5×17.0 cm vascularized myoma after ligating the actively bleeding vessel.

Additionally, three smaller intramural nodules were enucleated. The myoma nodules were sent for histopathological examination which described the largest specimen as multilobulated and whorled with solid and cystic components. The cystic areas were filled with yellowish and grey gelatinous substances. Morphology consistent with leiomyomata characterized by interlacing smooth muscle fascicles set within fibrovascular stroma with secondary myxoid and hyalinization changes. Thorough inspection revealed both ovaries and other viscera to be normal. Figures 1a and 1b illustrate the large fundal nodule after exteriorization and following the myomectomy. Peritoneal lavage was conducted, and the patient received 2 units of whole blood intraoperatively, with an additional unit administered postoperatively.

During the postoperative period, the patient revealed that aside from some recent abdominal heaviness, she had no symptoms of uterine leiomyomata and had never had a reason to do a pelvic scan. She denied any prior knowledge of having uterine fibroids. Her menarche occurred at age 13 and had a regular 28-day menstrual cycle with 5 days of normal bleeding, typically requiring only one sanitary pad per day. She had used emergency contraceptive pills a few times three years ago but had never undergone screening for premalignant cervical or breast lesions. She is a black woman resident in West Africa.

There was no history of abdominal trauma, chronic medical conditions, or previous surgeries. The patient recovered uneventfully and was discharged in good condition on postoperative day four. The surgery was performed at Metro Health Hospital (a private healthcare facility), on 21st July, 2024. Alternate day dressing was done and patient reviewed on post-operation day ten (POD 10) where sutures were removed.

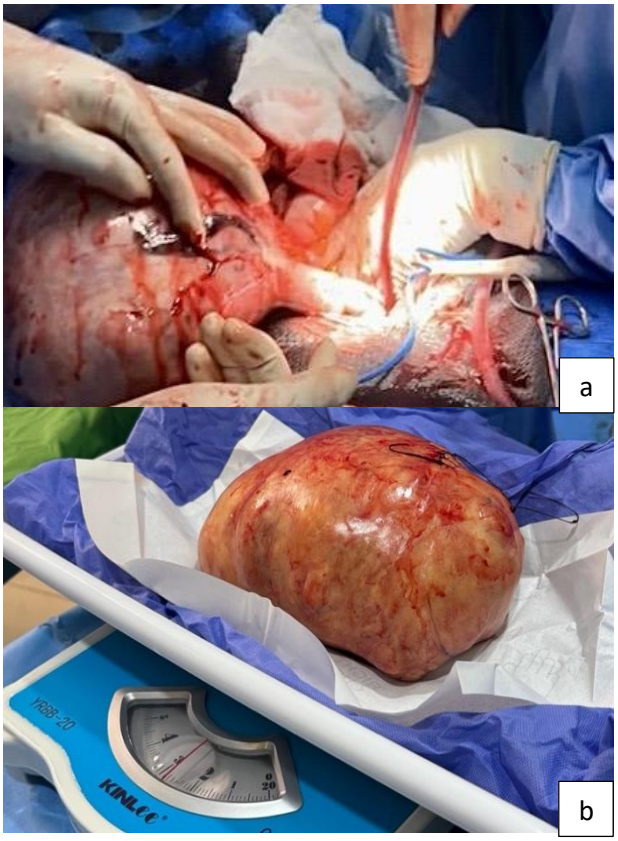

Figure 1: (a) The exteriorized pedunculated myoma with an engorged bleeding vein. (b) The huge 2.9 kg myoma nodule after excision.

DISCUSSION

Hemoperitoneum from ruptured myoma vessels can be caused by trauma/iatrogenic or rarely spontaneous.[3-9] The increased vascularity and pressure on the veins overlying large fibroids can lead to their rupture. Degenerative changes within the fibroid, such as red degeneration, may also contribute to vessel fragility and rupture.[10,11]

Patients typically present with acute abdominal pain, signs of hypovolemic shock, and an acute abdomen.[6-9] The differential diagnosis is broad, including ruptured ovarian cysts, ectopic pregnancy and other causes of hemoperitoneum.

This case highlights the diagnostic challenges posed by non-specific symptoms and the importance of imaging modalities. Ultrasound can detect free abdominal fluid, suggesting hemoperitoneum, but may misidentify the source, as seen in this case where the mass was initially suspected to be an ovarian cyst. CT (Computed Tomography) imaging, although not used here, could have provided additional details such as contrast extravasation from ruptured vessels. Magnetic Resonance Imaging (MRI) is less commonly used because most of our clients cannot afford the cost, yet can be useful in complex cases.

Surgical intervention is crucial for controlling hemorrhage in cases of ruptured fibroid vessels.[5] Myomectomy is the preferred procedure, allowing for fibroid removal and hemostasis.[6-9] Both laparotomy and laparoscopy are viable options, depending on the patient's condition and surgical expertise available. Embolization of the uterine arteries can be used. [12,13]

In this case, exploratory laparotomy and myomectomy were successfully performed, resulting in a positive outcome. The patient was satisfied with the medical approach and successful outcome of the resuscitation and emergency laparotomy. She consented to the publication of her records provided the information cannot be linked to her identity.

Review of literature

Hemoperitoneum due to ruptured fibroid vessels, although rare, has been documented in several case reports and studies, underscoring the importance of recognizing this potentially life-threatening condition in acute settings. Key findings from relevant studies include:

Sule et al highlighted a case of traumatic fibroid rupture, underscoring its role in diagnosing acute abdominal pain in women with fibroids.[1]

Toquero et al reported a case of post-coital hemoperitoneum in a pregnant woman with a fibroid, requiring emergency laparotomy to address a ruptured vessel.[3]

Horowitz et al documented massive hemoperitoneum from a ruptured artery over a uterine leiomyoma, stressing the necessity for rapid surgical intervention.[5]

Bou Nemer et al described a 48-year-old woman who, after presenting with abdominal pain and syncope, was found to have a ruptured subserosal vein over a fibroid, necessitating a total hysterectomy to control bleeding.[6]

Lotterman et al discussed a 53-year-old woman with severe abdominal pain and shock, where imaging and surgery revealed massive hemoperitoneum from a ruptured subserosal vein.[7]

Shukla et al reported a case of a 36-year-old woman with acute abdominal pain and shock; imaging identified a large subserosal fibroid with significant intra-abdominal fluid, confirmed as hemoperitoneum from spontaneous vein rupture during emergency surgery.[8]

Gupta et al and Manyonda et al reviewed complications related to fibroids, noting that while fibroids are common, spontaneous hemoperitoneum is rare but important to consider in acute abdomen cases.[9]

BMC surgery conducted a systematic review of 125 cases, finding that 60.8% involved rupture of superficial blood vessels over fibroids, primarily venous, and highlighted the need for prompt surgical intervention in most cases.[10]

These cases collectively emphasize the diverse presentations and critical nature of hemoperitoneum from ruptured fibroid vessels, reinforcing the need for prompt diagnosis and surgical treatment.

CONCLUSION

Hemoperitoneum due to ruptured fibroid vessels is a rare but potentially life-threatening condition that requires prompt recognition and intervention. The reviewed literature highlights the diverse presentations and critical nature of some case presentations, underscoring the importance of considering this diagnosis in women with acute abdominal pain and known fibroids. Despite the rarity of this complication, the consistent need for rapid surgical intervention across documented cases emphasizes the critical role of timely diagnosis and management. This case from Ghana represents a significant addition to the existing body of knowledge, especially as there appear to be no prior case reports from West Africa. The documentation of this case can aid in raising awareness, improving diagnostic acumen, and guiding management strategies in similar future presentations. Highlighting the occurrence of this rare complication also underscores the need for vigilance and prompt surgical intervention to prevent severe morbidity or mortality.

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