

Acute Gynaecological Abdomen Secondary to Pyomyoma: A Case Report

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Abstract

Pyomyoma is a fatal complication of leiomyoma with a high morbidity and mortality. Diagnosis is usually difficult because of its insidious presentation, lack of clinical localizing findings and reported imaging. This report documents a case of ruptured pyomyoma following an abortal process causing peritonitis. Intravenous antibiotics were administered and the infected myoma was removed surgically without recourse to hysterectomy. There should be a high index of suspicion of pyomyoma particularly in septic patients with leiomyoma and those with a risk of uterine infection.

Keywords: Pyomyoma; Leiomyoma; Insidious presentation; Uterine infection

Introduction

Leiomyoma is a common benign uterine neoplasm in women of reproductive age group. The incidence is 20-25% and it is more prevalent in women of African descent than Caucasian women [1]. It has been reported to be as high as 80% in Nigeria [2]. The incidence has been quoted to be as high as 70-80% on histologic or sonographic examination [1,3,4].

Pyomyoma is a rare but potentially fatal complication of leiomyoma which is as a result of infarction and infection of the myoma [1,2,5]. Some cases in literature reports its occurrence as a complication in pregnancy and in the post-partum period [6,7]. It has also been reported in the postmenopausal women [6-8].

Very few cases in Sub-Saharan Africa have been reported where leiomyoma is most prevalent [2]. Mortality rates are about 30% if not detected early [3,4]. The option of management in a pyomyoma associated with a pregnancy related event such as a late miscarriage; may be limited towards a more conservative approach as future fertility may still be desired which is illustrated in the case described. We report a case of perforated pyomyoma following spontaneous abortion causing acute abdomen to highlight a potentially fatal condition that requires a high index of suspicion.

Case Report

The patient was a 26 year old P0+2 woman who presented with a 3 day history of progressive abdominal swelling and generalised abdominal pain. She also had three episodes of vomiting and associated constipation prior to presentation. She had been diagnosed with uterine fibroids while being evaluated for secondary infertility but declined surgery. She later achieved a spontaneous conception but was admitted for suspected red degeneration of uterine fibroid in pregnancy about 8 weeks prior to presentation. She was discharged following resolution of symptoms. She eventually had a spontaneous abortion at 25 weeks gestation following another episode of suspected red degeneration of uterine fibroid occurring 3 days earlier. A dead female foetus was expelled but the placenta was retained. The placenta was subsequently delivered by controlled cord traction following continued oxytocin infusion. She had been on antibiotics following the abortion.

On examination, she was acutely ill looking and febrile with a temperature of 37.8°C. She was pale and dehydrated, with no peripheral lymphadenopathy and no pedal oedema. The respiratory rate was 40 cpm. The pulse was 100 beats per minute and blood pressure was 100/60 mmHg. The abdomen was distended with generalised tenderness and guarding making deep palpation difficult. The percussion note

was tympanitic with markedly reduced bowel sounds. The pelvic examination showed copious whitish discharge seen at the cervical os necessitating an endo-cervical swab which was taken for microscopy, culture and sensitivity. Bimanual palpation was difficult as patient was in distress. The cervical os was closed with fullness in the pouch of Douglas.

The full blood count differential showed a packed cell volume of 25%, a white cell count of $9.3 \times 10^9/L$ with relative neutrophilia of 75%. The electrolyte, urea and glucose profile were normal. Serology to HIV was negative. Urine microscopy, culture and sensitivity was sterile. The endo-cervical swab microscopy, culture and sensitivity showed many epithelial cells and pus cells with no organism isolated after 48 hours of incubation. The abdomino-pelvic ultrasound showed moderate intra-abdominal fluid collection with internal echogenic strands. The uterus was enlarged with a rounded echogenic mass at the fundus measuring 13.3 by 12.9 cm with a calcified rim. There was a linear hypo-echoic defect at the posterior wall of the uterus traversing the myometrium suggesting a uterine perforation. The liver, pancreas and spleen and both kidneys were within normal limits

In view of these findings, a clinical impression of acute abdomen secondary to uterine perforation was made. She was commenced on intravenous fluids, analgesia intravenous ceftriaxone and metronidazole and an emergency laparotomy was performed. Intra operatively, there was straw coloured fluid with purulent exudates in the abdominal cavity of approximately 1.5 L. The omentum was thickened and had walled off the bowel in left hemi-diaphragm. The bowels were intact but distended. There were intra-abdominal flimsy adhesions. The uterus was bulky and about 24 weeks size. The posterior uterine wall was soft with a linear defect measuring 4cm which was discharging pus into the peritoneal cavity (Figure 1). There was a degenerating myoma in the posterior uterine wall measuring 14 by 10 cm which also contained pus (Figures 2-4). There was generalised intra -abdominal inflammatory exudates. The purulent exudate was aspirated and sent for microscopy,

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Figure 1: Arrow indicates linear defect in the posterior uterine wall.



Figure 2: Arrow shows the posterior uterine wall after removal of infected fibroid.



Figure 3: Surgical specimen of the degenerated pyomyoma measuring 14 by 10 cm.



Figure 4: The uterus post myomectomy.

culture and sensitivity. The abdominal fluid and exudates were then suctioned. A haemostatic catheter was applied and the infected myoma and an adjacent myoma measuring 4 by 4 cm were dissected from the uterus. This was done as the patient was still desirous of fertility. The myometrial wall repaired in layers with interrupted sutures with vicryl [1]. Haemostasis was secured and the peritoneal cavity was copiously irrigated with warm normal saline. A drain was placed and the abdomen

repaired in layers. The specimen was sent for histology. A naso-gastric tube was passed to decompress the abdomen. She was transfused 2 units of blood and placed on intravenous antibiotics and analgesia. She did well postoperatively with stable vital signs. The post-operative packed cell volume was 30% and the electrolyte and urea was normal. The pus microscopy, culture and sensitivity also showed gram epithelial cells with gram positive cocci and pus cells but culture showed no organism was isolated after 48 hours of incubation. Anaerobic culture was not done as facilities were not available. The sample was sent for histopathologic examination which showed a degenerating leiomyoma with suppurative inflammation. No evidence of malignancy was identified. The nasogastric tube and the abdominal drain were minimally active and were removed on the 3rd post-operative day. She was commenced on oral intake on the 3rd post-operative day and antibiotics converted to oral. She had a smooth post-operative recovery. The stitches were removed on the 8th post-operative day and the wound had healed satisfactorily. She was discharged on the 8th post-operative day to be seen in clinic in two weeks which she did with no complaints.

Discussion

Pyomyoma is a rare and life-threatening complication of leiomyoma. Antibiotic use however has reduced the prevalence of this dreadful complication. Out of nearly 100 cases described in literature, at least 20 cases have been reported post the era of antibiotic use [4,7,9]. Only two cases of pyomyoma including this case has been reported in Sub-Saharan Africa [2]. Infection of leiomyoma may occur after bacterial seeding of a necrotic foci which could be as a result of haemorrhage and necrosis in pregnancy or vascular insufficiency from hypertension, diabetes and atherosclerosis in the post-menopausal state [1-4,10]. Immunodeficiency and intravenous drug users are also implicated risk factors [2-4]. It could also occur after insertion or removal of intrauterine device and uterine artery embolization [2,3]. The risk of suppurative complication of leiomyoma is increased in pregnancy related cases [10]. This is probably due to the rapid growth of leiomyoma due to hormonal changes causing infarction and secondary infection. The case described is no exception as the patient presented in the immediate post-abortion period. Ascending infection has been implicated in the aetio-pathogenesis of pyomyoma [8-10]. This can follow an abortal process either spontaneously or by uterine instrumentation causing infection in the endometrial cavity in the presence of myomas. Other routes of infection may be contiguous spread of infection from adnexae or bowel and haematogenous or lymphatic spread from an occult or obvious infection in other parts of the body [8,11]. The patient in this case may have had an ascending infection in the post abortal period that might have precipitated the onset.

Organisms implicated in pyomyomas are diverse. They include *Clostridium spp*, *Staphylococcus aureus*, *Streptococcus milleri*, *Streptococcus haemolyticus*, *Streptococcus agalactiae* *Proteus spp*, *Serratia marcescens*, *Actinomyces meyeri* *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Peptostreptococcus tetradius* *Escherichia coli* and *Candida Spp* [2-4,6]. Pyomyoma occurs more commonly in sub-mucosal fibroids due to their location and poor blood supply which make it more susceptible to ascending infection [3,8]. However in the case described it occurred in an intramural fibroid which is rare [3]. Clinical diagnosis is often difficult and frequently missed particularly in patients following abortion or delivery [9]. The symptoms are usually non-specific but a triad of bacteraemia or sepsis with leiomyoma and no apparent source of infection suggests pyomyoma [3]. Differential diagnoses of pelvic mass associated with septicaemia include infected ovarian tumour, tubo-ovarian abscess, pyometra with obstruction

of the endocervical canal, gynaecologic malignancy with invasion of the bowel causing intestinal obstruction and pyomyoma [2,3,5,11]. In pregnancy, septic abortion and red degeneration may be considered [2,3]. Pyomyoma is difficult to diagnose radiologically as its findings are non-specific. There may be features of increased internal echoes and reverberation artefacts and discontinuity in the uterine wall [9,12]. Presence of gas is diagnostic of pyomyoma on CT Scan [12].

Obvious signs of peritonitis are an indication for exploration as was done in this patient [11]. Acute abdomen may occur after perforation of the pyomyoma with subsequent spillage and will cause pyoperitonitis, acute respiratory distress syndrome and septic shock [3]. Pyoperitonitis was seen in this patient causing acute abdomen which subsequently resolved following surgical management and antibiotic therapy. Total abdominal hysterectomy had been described as a treatment modality in some cases [2,3]. Myomectomy can also be performed depending on the size and number and desire for future conception [3,10]. This patient did well following myomectomy and antibiotic therapy. Conservative management with intravenous antibiotics and ultrasound / computerised tomographic guided drainage has also been proposed in some series [10,13,14]. The clinical and academic interest illustrated by the index case is to highlight the need for clinicians to consider a conservative approach to management especially in patients desirous of future fertility. In conclusion, pyomyoma though rare should be borne in mind in septic patients with leiomyoma and those with a risk of uterine infection. A high index of suspicion allows for early diagnosis and prompt treatment to improve outcome in these patients.

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