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A case of pyomyoma following uterine artery embolization for postpartum hemorrhage

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Abstract

Uterine artery embolization (UAE) has been used in the treatment of symptomatic fibroid to women who are not keen on surgical procedures or who are unfit for surgery. Although UAE for PPH is generally considered a safe and effective procedure, it may result in several significant medical complications such as uterine necrosis and pyomyoma. Pyomyoma in post-UAE patients is rare, and to the best of our knowledge, only 11 cases were reported in the literature. The diagnosis is arduous due to non-specific clinical and radiological findings.

This case follows a 31-year-old female with a known anterior wall fibroid (16.6x12x13) presented in active labour at 40 weeks and delivered vaginally. Delivery was complicated with major postpartum hemorrhage due to uterine atony, she received all the uterotonics, Bakri balloon was inserted, but patient continued to bleed, decision was taken for Uterine artery embolization. She had a few spikes of low-grade fever post embolization and was started on Intravenous tazocin after which the fever subsided. Estimated blood loss was 4 litres. She was discharged on the 9th postnatal day in good health on oral antibiotics. After 12 days she was readmitted with complains of fever and foul-smelling lochia, with a clinical picture suggestive of suspected endometritis or post embolization syndrome. Abdominal examination revealed a non-tender pelvic mass of 22 weeks size .Per speculum showed a 4 cm necrotic fibroid protruding from the cervix into the vagina along with blood stained foul smelling vaginal discharge. She was commenced on intravenous Tazocin and Vancomycin.MRI showed vagina very distended with compression on the rectum, containing very large fluid collection of mixed signal

intensity as well as air. Expanded endometrial cavity. The anterior part of lower cervix and the lower part of the cervical canal was bulky. Overall image suggested fibroid sloughing.

She continued to be febrile with a rising CRP, so in view of her worsening condition she was consented for examination under anaesthesia followed by vaginal myomectomy and possible need for hysterectomy. Intraoperatively the whole 15cm fibroid prolapsed through the cervical canal into the vagina upon fundal pressure. foul smelling pedunculated fibroid, with avascular changes, majority on anterior wall of the uterus was seen. A Vaginal myomectomy was done.

Hysterectomy along with broad-spectrum antibiotic treatment, is the treatment of choice for pyomyoma, only a few cases of uterus-preserving management have been reported ,Our case among one such. Pyomyoma has a significant morbidity and mortality rate because it can causes sepsis, peritonitis and respiratory distress syndrome. Due to its rarity, accurate diagnosis depends on high degree of suspicion and quick treatment is advised to lower mortality.

Keywords: CRP, MRI, Pyomyoma, Respiratory Distress Syndrome.

Introduction

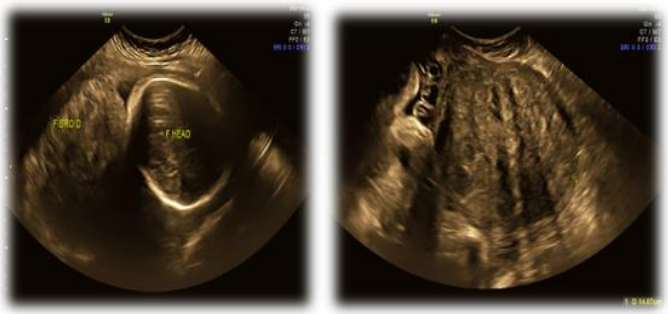
Uterine artery embolization (UAE) has been used in the treatment of symptomatic fibroid to women who are not keen on surgical procedures or who are unfit for surgery. There can be complications following UAE, such as post embolization syndrome , post-procedural pain , infection , persistent vaginal discharge , passage of the fibroid per vaginum, endometrial atrophy , leading to secondary amenorrhoea and uterine necrosis [1] Although UAE for PPH is generally considered a safe and effective procedure, it may result in several significant medical complications such as uterine necrosis and pyomyoma. [2] Pyomyoma in post-UAE patients is rare, and to the best of our knowledge, only 11 cases were reported in the literature. The diagnosis is arduous due to non-specific clinical and radiological findings [3]

We present a case of massive pyomyoma protrusion post uterine artery embolization done for post-partum hemorrhage following vaginal delivery.

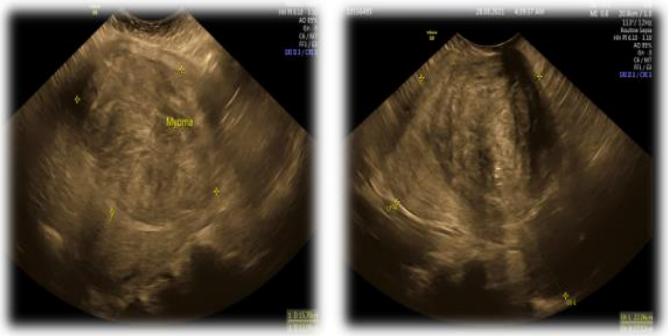
Case Report

A 31-year-old female with a known anterior wall fibroid (16.6 cmx12 cmx13 cm) presented in active labour at 40 weeks of gestation and delivered vaginally. Delivery was complicated with major postpartum hemorrhage due to uterine atony, she received all the uterotonics, Bakri balloon was inserted, but patient continued to bleed, decision taken for Uterine artery embolization. Bilateral uterine arteries were embolized by 500-700 micrometer polyvinyl alcohol particles and the anterior division of internal iliac was embolized using gelfoam slur. Bakri balloon was deflated during the procedure, but after UAE patient was still trickling so Bakri balloon re inflated again. She had a few spikes of low-grade fever post embolization and was started on Intravenous tazocin. Estimated blood loss was four litres. Patient received a total of 13 packed red blood cells and 6 units of fresh frozen plasma. All the cultures were negative except urine culture (E-coli isolated). She was discharged on the 9th postnatal day in good health on oral antibiotics.

Scans before delivery

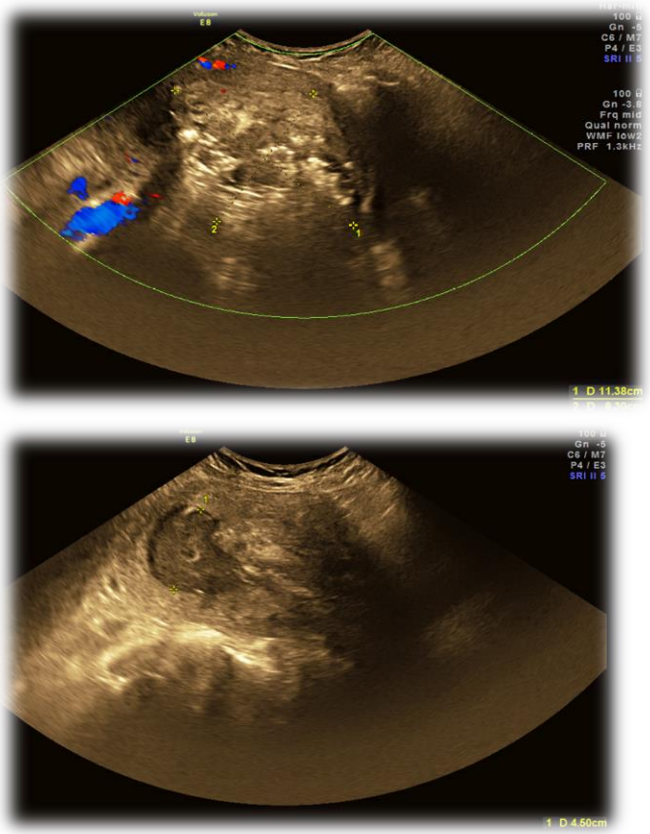


After Delivery scan show showed intramural anterior wall fibroid measuring 15.7x12.1cm. Cavity appears empty with thickness of 0.9 cm. Blood clots noted in the cervical cavity.

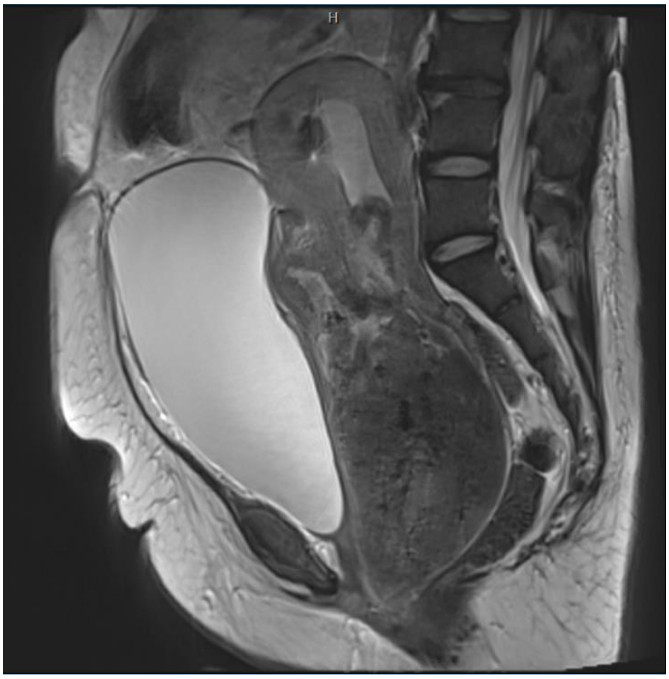


After 12 days she was readmitted with complains of fever and foul smelling lochia , with a clinical picture suggestive of suspected endometritis or post embolization syndrome .On examination she was conscious and alert and vitals showed tachycardia with pulse 102 beats per minute ,normal blood pressure and a temperature of 38.8 degree Celsius .Abdominal examination revealed a non-tender pelvic mass of 22 weeks size .Per speculum showed a 4 cm necrotic fibroid protruding from the cervix into the vagina along with blood stained foul smelling vaginal discharge.

Investigations included full blood count with Hemoglobin of 8.2 gm/dl, normal white blood cell count and platelets. Her urea, creatinine and electrolytes were all within normal limits. Cultures came negative. C-reactive protein was high at 207 mg/L.Chest X-ray was normal. She was commenced on intravenous antibiotics (Piperacillin-Tazobactam and Vancomycin). Ultrasound showed an echogenic and calcified intramural fibroid due to post embolization procedure, towards the anterior measuring 11.38 cmx 8.30 cm x 10.79 cm with no vascularity seen.

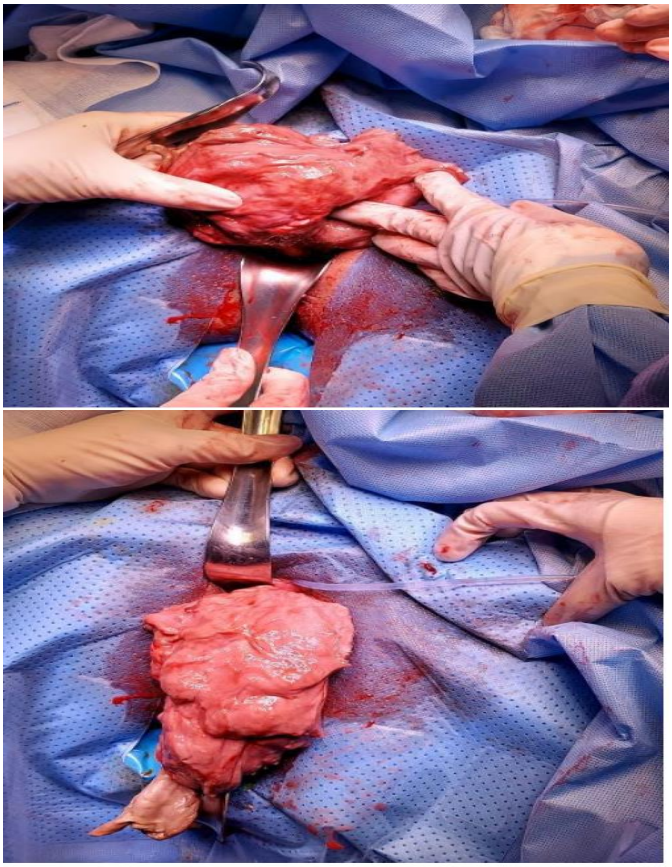


MRI showed vagina very distended with compression on the rectum, containing very large fluid collection of mixed signal intensity as well as air. Expanded endometrial cavity with mixed signal material. The anterior lower cervix and the lower part of the cervical canal was bulky with heterogenous appearance ,overall image suggested fibroid sloughing.



She continued to be febrile with a rising CRP, so in view of her worsening condition she was consented for examination under general anaesthesia followed by vaginal myomectomy and possible need for hysterectomy. Intraoperatively the whole 15cm fibroid prolapsed through the cervical canal into the vagina upon fundal pressure, foul smelling pedunculated fibroid with avascular changes, majority on anterior wall of the uterus was seen.The peduncle was tied at two levels and secured with vicryl number 1. Diathermy cutting performed in 2 steps and vaginal myomectomy was done. In the operating room she drained 1.7 litres of urine after catheterization, suggestive of urinary retention due to pressure from the fibroid.

Transabdominal ultrasound done intraoperatively showed an empty upper uterine cavity, Thickened endometrium noted from the mid cavity suggestive of a thick peduncle of prolapsed submucous fibroid.



Postoperatively she was on antibiotics, analgesics and thromboprophylaxis. Histopathology showed extensively necrotic degenerated spindle cells with focal inflammation. Patient was planned for monthly GnRH analogue followed by hysteroscopy and resection of fibroid peduncle after 4 months and was discharged in good condition. She was given a 2-week appointment but was lost to follow up.

Discussion

Our case is unique as embolization was done for PPH and only 15 cases of pyomyoma relating to pregnancy have been reported since 1945 [4,5] Among the cases reported during pregnancy, pyomyoma occurred after preterm rupture of membranes or a second trimester miscarriage, other cases developed after uterine manipulation, such as cesarean section or elective abortion, suggesting the possibility of a perioperative infection [5].

Pyomyoma is an infrequent complication characterized by the infected necrotic tissue of embolized leiomyoma. Often, it is due to polymicrobial infection, including anaerobic, Gram-positive, and Gram-negative bacteria. Some of the known risk factors predisposing patients to pyomyoma are submucosal leiomyomas, elderly old age, pre-existing infection, intravenous drug users, presence of intra-uterine devices, diabetes, hypertension, post-partum, and immunocompromised states [6]. In our case patient being postpartum having submucous fibroids and undergoing uterine artery embolization predisposed her to developing the pyomyoma.

The occurrence of pyomyoma after UAE poses a diagnostic challenge since its presentation resembles that of post-embolization syndrome (PES), which consists of fever, pelvic pain and leukocytosis within 1 week of UAE. PES is a self-limited complication occurring in about one-third of UAE cases and is typically managed conservatively with hydration, anti-inflammatory medications and pain control [5]. However, the development of fever, pelvic pain, and leukocytosis beyond one week following UAE should raise clinical concern for pyomyoma [6] In our case the patient had few spikes of fever after the embolization done for PPH and was started on broad spectrum antibiotics which could have masked the initial presentation of a pyomyoma which lead her to get readmitted 12 days later with worsening symptoms and sepsis.

Pyomyomas following pregnancy or abortion develop insidiously over days to weeks because of extension of infection from the uterine cavity, from adjacent structures or via hematogenous or lymphatic spread [5]. in our case could be from the Bakri balloon insertion.

A triad of sepsis, leiomyoma, and no other source of infection has been described as a concerning clinical presentation for pyomyoma [7] in our case all the cultures were negative, raising the suspicion.Without effective and prompt treatment, pyomyoma mortality might exceed 20%. [8,9]

Conclusion

Hysterectomy along with broad-spectrum antibiotic treatment, is the treatment of choice for pyomyoma ,only a few cases of uterus-preserving management have been reported , our case is among one of them. Pyomyoma has a significant morbidity and mortality rate because it can cause sepsis, peritonitis and respiratory distress syndrome. Due to its rarity, accurate diagnosis depends on high degree of suspicion and quick treatment is advised to lower mortality. Diagnostic aids include ultrasound, computed tomography and magnetic resonance imaging.The prognosis is good after diagnosis and timely surgical management.

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