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**Group A Strep Pyomyoma Rapidly Causes Septic Shock in a Non-Gravid Female**

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**Abstract**

**Background:** Pyomyoma is a rare complication of leiomyoma, presenting with a triad of sepsis, leiomyoma and no other source of infection that can lead to death or significant morbidity if left untreated. Risk factors for pyomyoma include uterine tampering with intra uterine device placement, dilation and curettage, uterine artery embolization, hysteroscopy, or pregnancy inclusive of a birth event. We present a case of a spontaneous group A strep pyomyoma in a non-gravid otherwise healthy female, with no risk factors, manifesting as septic shock.

**Case:** A 39 yrs G1P1 presented to the emergency department in septic shock after one day of severe abdominal pain. Her history was remarkable for abnormal uterine bleeding without prior uterine surgery or therapy. Act of the abdomen and pelvis revealed massive enlargement of the uterus. She was admitted in septic shock secondary to a _streptococcus pyogenes_ bacteremia. Despite initial medical stabilization with fluid resuscitation, vasoactive agents, and antibiotic coverage, she remained febrile with pronounced tenderness of her abdominopelvic mass. An exploratory laparotomy, total abdominal hysterectomy, and bilateral salpingo-oophorectomy for a pyomyoma were completed. Her post-operative course was uncomplicated and notable for rapid resolution of her septic course.

**Conclusion:** Spontaneous group A strep pyomyoma formation in a patient without risk factors has not been reported in the literature. Our case of an abrupt onset group A strep septic shock from a pyomyoma in a patient with no known risk factors highlights the importance of early recognition and aggressive surgical management, which can be lifesaving.

**Keywords:** Pyomyoma; Septic shock; Sepsis

**Introduction**

Leiomyoma is the most common benign pelvic tumor of the female genital tract and can be a cause for abnormal uterine bleeding and pelvic pain. However, leiomyoma rarely become spontaneously infected with only 50 reported cases of pyomyoma reported in the literature [1]. Of all the reported cases in the literature none have been reported to be caused by group A strep infection. Pyomyomas are thought to form following necrosis of a fibroid; occurring after a leiomyoma undergoes infarction and gets infected. To this end, decreased vascular flow to the uterus following menopause or rapid fibroid growth in pregnancy can represent a risk factor for necrosis and infection [2]. Sepsis secondary to an infected fibroid is a rarely reported occurrence. The mortality associate with pyomyoma is between 6% to 21% with no deaths currently reported in those associated with pregnancy [1,2]. To our knowledge, group A sepsis secondary to an infected fibroid has not been reported in the literature. _Streptococcus pyogenes_ infections of the female reproductive tract are also seldom reported outside of the puerperal period. We present a case of a non-gravid female who presented with abdominal pain for 24 hrs and no risks factors. She was found to be in septic shock secondary to group A strep bacteremia with pyomyoma as the source.

**Case Presentation**

A 39 year old previously healthy female presented to the Emergency Department with one day of severe abdominal pain. She had associated nausea, vomiting, and light-headedness. Patient endorsed decades-long history of abnormal uterine bleeding and stated that she had been on her current period for three weeks. Notable initial vital signs included temperature of 100.3°C, heart rate...
of 136, and blood pressure of 85/59. Labs demonstrated leukocytosis, acute kidney injury, elevated anion gap and elevated lactate to 6.8. Computed Tomography (CT) imaging of the abdomen showed massive enlargement of the uterus (Figure 1). Treatments in the ED included two liters of fluids, ertapenem (due to penicillin allergy), pain and nausea medications, central line placement, arterial line placement, and a norepinephrine drip at 4 mcg/min. The patient was admitted to the medical intensive care unit in septic shock requiring pressor support. Vancomycin was started in addition to the ertapenem. Patient’s blood culture resulted gram positive cocci, likely streptococcus pyogenes, at which point Clindamycin was added. Within 12 hrs of admission, patient was weaned off pressors though she remained febrile and tachycardic. Given her continued acute illness and presumed source of infected uterine fibroid she was taken on hospital day two for exploratory laparotomy resulting in total abdominal hysterectomy with bilateral salpingo-oophorectomy and retroperitoneal lymphadenectomy for purulent pelvic mass and purulent lymph nodes. The patient had stable vital signs following surgery, and was transferred to the floor. She recovered well and was discharged home from the hospital on post-operative day 3. Her pathology report revealed a 20 cm necrotic leiomyoma (Figure 2 and 3) with acute and chronic inflammatory changes and both retroperitoneal pelvic lymph nodes were noted to have purulent material with coccoid bacteria. She was seen for follow up at 2 weeks and 8 weeks after her surgery and was found to have made a complete recovery.

Discussion

Pyomyomas are rare outside of the postpartum or menopausal period, especially if no instrumentation or other risk factors are identified. Septic shock secondary to group A strep sepsis is a rare occurrence as well. Our case presents a patient with group A strep sepsis with pyomyoma as a source of infection with no known risk factors. She had abrupt onset of symptoms and became septic within 24 hrs of presentation. Iwahashi et al. [1] reported on a case of a 50 yo peri-menopausal female with a streptococcus agalactiae pyomyoma that was 50 cm in size. Its presentation however, unlike that of our patient was over the course of 7 months with gradual abdominal distention which had started 2 years earlier. Tobias et al. [3] reported on the common pathogens as a source for pyomyoma with enteric bacilli being most common, streptococci following and staphylococci in third place. Iwahashi et al. [1] did a review of the literature 2016 of 50 reported cases none of which had group A strep as the offending agent. Chen reviewed 22 cases since 1945 of pyomyomas which were confirmed pathologically and all cases were noted to have predisposing risk factors, however, none of the cases were found to have group A strep as the offending pathogen either. Our case illustrates the potential for severe group A strep gynecological infection and its abrupt onset. Early source control was key in the management of our patient and her quick recovery. Group A Strep may be associated with fulminant infection and toxic shock syndrome as well as sepsis. When a female patient presents with signs of sepsis and the appropriate clinical picture, group A Strep of the reproductive system should remain high on the clinician’s differential, as early recognition and intervention with source control is vital and potentially life saving.

References