Abdominal Actinomycosis: A Report on Two Cases of Acute Bowel Obstruction in Males

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ABSTRACT

Actinomyces is a pus-forming bacterium that inhabits the gastrointestinal tract of humans. Under certain conditions the bacterium can cause a variety of pathology including bowel obstruction and abdominal masses. These infections have been most frequently associated with young women with intrauterine devices or males with large intra-abdominal masses. We present two cases of young males who presented with bowel obstruction not associated with an intra-abdominal mass.

In the first case, a 32-year-old male presented with a small bowel obstruction. No masses were seen on imaging. The patient was taken to the operating room for exploration, where a 25 cm segment of small bowel was found to be necrotic, and a subhepatic abscess was identified. In the second case, a 46-year-old male undergoing treatment for colon cancer presented with multiple abdominal abscesses. During the course of his hospital stay he developed a large bowel obstruction that required exploration. The pathology specimens from both cases revealed Actinomyces.

Unlike other cases reported in the past, these two cases of abdominal actinomycosis were not accompanied by abdominal masses. Although actinomycosis can be treated with antibiotics and observation, it may be difficult to find predictive measures that might help the clinician make the diagnosis preoperatively.

INTRODUCTION

Actinomycosis is a chronic pus-forming infection caused by Actinobacteria, a group of anaerobic bacteria that are normal flora of the human alimentary tract. In certain instances, these organisms can become pathogenic and cause suppurative inflammation with potential formation of abscesses and granulomas. It can present in the cervicofacial area, the thorax, or the abdomen.1

Abdominal actinomycosis (AA) is rare and often misdiagnosed as inflammatory bowel disease, metastatic malignancy, diverticulosis, or pelvic tumors due to its similar appearance on radiographic images. Fewer than 10% of cases are diagnosed preoperatively.2 The chronic indolent course of this disease often leads to late onset of symptoms, sometimes presenting as small bowel obstruction.2

Small bowel obstruction (SBO) due to AA is extremely rare and is definitively diagnosed postoperatively by identification of actinomy
cotic granules on histology. There are a total of 25 cases of obstruction due to actinomycosis reported in the literature currently, and it is estimated that there are over 300,000 laparotomies performed each year for small bowel obstruction in the U.S. Surgical management is often required. Intravenous penicillin for 3-6 weeks, followed by 6-12 months of oral penicillin therapy, is recommended postoperatively. Appropriate measures reduce mortality rates to less than 10% and significantly reduces the risk of recurrence.

While rare, actinomycosis causes severe inflammation and obstruction, thus surgeons must be aware of this disease and its presentation. We present two cases of acute bowel obstruction due to abdominal actinomycosis in young males.

CASE PRESENTATION

CASE 1

A 32-year-old male with no past medical history presented to the emergency department with sudden diffuse abdominal pain along with nausea and vomiting. He had no previous similar episodes and no sick contacts. A computed tomography (CT) with contrast (Figure 1) showed small bowel obstruction. The patient was admitted, and medical management was attempted. However, he worsened over the following two days and was taken to the operating room emergently. Intra-operatively, he was found to have a 25 cm segment of small bowel that was necrotic as well as a subphrenic abscess that was drained. Postoperatively, the patient required a chest tube to drain a reactive pleural effusion. Cultures from the operating room showed Actinomyces odontolyticus. The patient was kept on intravenous penicillin until bowel function returned, after which he was switched to oral amoxicillin/clavulanate. He was discharged to an outside hospital to complete his 6-week antibiotic course.

CASE 2

A 46-year-old male with metastatic colon cancer on chemotherapy presented to the emergency room with increasing abdominal pain. On work-up he was found to have multiple intra-abdomi
nal abscesses. He was admitted to the hospital and his abscesses were drained by interventional radiology. Cultures of the material drained from his abscesses were positive for *Actinomyces*. During his hospital course, he developed a large bowel obstruction. Medical management was attempted, however his distention became significant and he was taken to the operating room. He underwent an ileocectomy and sigmoid colectomy with colostomy. He was treated with intravenous ampicillin/subactam until bowel function returned. The patient was ultimately discharged home on oral amoxicillin/clavulanate with a plan to continue his chemotherapy once stable.

**DISCUSSION**

Abdominal actinomycosis (AA) can cause a wide spectrum of disease in both males and females. In most instances of abdominal actinomycosis, patients present with bowel obstruction which can mimic malignancy. While it can be treated with intravenous antibiotics, it is often diagnosed postoperatively. In our cases, both patients presented with bowel obstruction that required surgical intervention. Cultures from both patients revealed *Actinomyces*.

Our patients presented very differently than how females with underlying abdominal actinomycosis may present. Females typically have an association with intrauterine devices and chronic abdominal pain leading to small bowel obstruction. Males often do not have any predisposing factors and they may not show any symptoms prior to emergent presentation. Finally, our patients did not present with a classic multi-cystic mass, as has been reported in other AA cases previously.

Patients with advanced AA present with bowel obstruction and often have underlying bowel necrosis. These patients are difficult to manage medically and usually require emergent surgical intervention to remove the source of sepsis. It is important that clinicians who suspect AA as the source of bowel obstruction keep in mind that immediate surgical management may be necessary to treat the patient.

**LEARNING POINTS**

1. Abdominal actinomycosis causes a broad spectrum of disease, including gastrointestinal obstructions.

2. Abdominal actinomycosis in females is typically associated with intrauterine devices and chronic abdominal pain.

3. Males with abdominal actinomycosis often do not have any predisposing factors, and they may not show any symptoms prior to emergent presentation.

**REFERENCES**


