Acute Appendicitis Secondary to Actinomycosis
Gastrointestinal Infection – A Case Report

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ABSTRACT

Actinomycosis is a rare inflammatory disease caused by saprophytic commensal micro-organism and mostly involves the appendix in the abdomen. Mucosal barrier injuries, abdominal surgery, and immunosuppression are some of the risk factors of appendiceal actinomycosis. We report a case of appendiceal actinomycosis in a 30-year young woman firstly presented with acute appendicitis, who complained of hypogastric abdominal pain, postprandial nausea, and vomiting with having no bowel movement and gas passing that were begun following the appendectomy. Although abdominal actinomycosis is rare, it should be considered in the differential diagnosis, especially if patients do not achieve recovery after surgery. Immediate and accurate diagnosis, usually by histopathological examinations, and bacterial culture can prevent unnecessary invasive interventions and additional costs.

Key words: Abdominal actinomycosis, Actinomycosis, Appendicitis, Corticosteroids

CASE REPORT

A 30-year-old female from Yazd province, referred to the emergency department, with right lower quadrant (RLQ) pain. According to initial assessments and consulting with the general surgeon, the patient was hospitalized with the diagnosis of acute appendicitis and taken to the operating room for an open appendectomy. The appendix was inflamed and edematous with a minimal amount of pus discharge. It was excised without complications. Furthermore, the ovaries and terminal ileum were explored up to 60 cm. Post-operatively, the patient had a good general condition and normal abdominal examination. She

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had gas passing and tolerated the diet without any abdominal pain or other complications, only had a mild nausea. The patient was discharged home on the second post-operative day with cefixime, metronidazole, domperidone, pantoprazole, and acetaminophen. Five days later, she presented with abdominal cramping, nausea, and vomiting. There was no radiating pain, alleviating, or aggravating factors. The patient denied having bowel movement and gas passing since 3 days ago. Pertinent medical history included taking nutritional supplements for gaining weight since 6 months ago, which contained steroids. Past social history (history of tobacco, alcohol, or drug use) were negative and all reviews of systems such as weight loss, weakness, and fever were also negative. She was generally ill; however, vital signs were normal. The abdomen was soft and mildly distended. There was generalized mild tenderness by negative rebound tenderness. Bowel sounds were absent. Besides, no palpable mass, enlarged lymph nodes, or ascites were detected. Abdominal ultrasound showed an evidence of bowel loop dilatation in the RLQ. Upright abdominal radiography revealed multiple air-fluid levels representing intestinal obstruction. Furthermore, a localized micro abscess with a diameter <2 cm in site of appendectomy was detected on computed tomography (CT) [Figures 1 and 2].

In laboratory examinations at this time, complete blood count test results were all normal. However, inflammatory markers were increased (C-reactive protein [CRP] 3+ and erythrocyte sedimentation rate (ESR) 37 mm/h) and serum potassium level was decreased (3.3 mEq/L, normal: 3.5–5.5). The pathology reported acute suppurative appendicitis and the serosa was covered by the purulent and fibrinous exudate, which was suggestive of Actinomyces in lumen [Figure 3]. When the diagnosis was confirmed by a pathologist, antibiotic regimen was changed to high-dose amoxicillin. Bowel movements were restored and distention was improved following medical therapy. The treatment continued 1 month and the patient was currently asymptomatic, with no evidence of recurrence after 1.5 months follow-up.

### DISCUSSION

Actinomycosis is a rare suppurative granulomatous infection caused by Actinomyces species. It is a filamentous Gram-positive and anaerobic microorganism, with a worldwide distribution. Actinomyces are saprophytic commensal inhabitants in the oral cavity, GI, and urogenital tracts. The incidence ratio in males is three-fold more common than females, and also, it affects middle-aged populations. Cervicofacial infections include around half of cases and abdominopelvic is in the second place by 20% involvement. Abdominal actinomycosis (AA) frequently involves ileocecal region, especially appendix (66%). Some of predisposing factors can be listed as: Diabetes, immunosuppression caused by steroid intake, HIV-infection, lung and renal transplant, local tissue damage caused by trauma, recent abdominal surgery (appendectomy and cholecystectomy), appendicitis and perforation, intrauterine device maintained over 10...
CONCLUSIONS

Although AA is rare, luckily, it is curable and has an excellent prognosis if diagnosed early and treated correctly. It should be considered in the differential diagnosis of appendicitis, especially in patients who referred after surgery by post-operative complications (such as manifestations of mechanical bowel obstruction, raised inflammatory markers besides observation of the pus collection, or unusual mass on abdominal CT). Similarly, having AA predisposing factors is considerable. As a result, immediate and accurate diagnosis, usually by following histopathological reports and bacterial culture, can prevent unnecessary invasive interventions and additional costs.

CONFLICTS OF INTEREST

None.

FUNDING

None.

ETHICAL APPROVAL

The written consent was obtained from the patient and none of the patient’s personal information will be published.

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REFERENCES
