

## Abdominal Actinomycosis Mimicking Chronic Appendicitis

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### Abstract

**Background:** Abdominal actinomycosis is a rare chronic infectious disease. There are only a few reports of the disease of chronic appendicitis pattern. We present a case of abdominal actinomycosis mimicking chronic appendicitis.

**Case:** A 29-year old male was admitted with symptoms of right low quadrant pain for a few weeks. An abdominal computed tomography scan revealed a solid mass without a clear border, near the cecum. On colonoscopy, normal colon and terminal ileum were seen, except for mild edema and a few tiny erosions around the appendiceal orifice. The patient received an antibiotic treatment. Three month later, abdominal ultrasound was performed and revealed the appendix enlarged to 9 mm, with thickened and hyperemic wall. Appendectomy was performed. On microscopic examination chronic active appendicitis containing Actinomycotic sulfur granules within inflammatory infiltrate was described. Treatment by Amoxicilline was recommended for 6 months.

### Introduction

Actinomycosis is an uncommon chronic infectious disease. Abdominal actinomycosis represents 20% of the cases. The ileo-cecal region with the vermiform appendix is most commonly involved. The clinical diagnosis is not easy.

The most common presentation of appendiceal actinomycosis is acute, mimicking acute appendicitis. There are case reports of the disease mimicking appendiceal tumor. There are only a few reports of the disease of chronic appendicitis pattern.

We hereby describe a case with such a rare presentation.

### Case Description

A 29-year old male was admitted with symptoms of Right Low Quadrant (RLQ) pain for a few weeks before admission. He denied high fever, vomiting or bowel movement disturbances. He did not have a history of any chronic disease.

On physical examination his body temperature was 36.8°C, his pulse was 87 beats/min, and he had tenderness and rebound pain in the RLQ of the abdomen.

The laboratory findings were normal, except for 13,840 leukocytes and C-reactive protein level of 14 mg/L.

An abdominal computed tomography scan was performed and revealed a solid mass without a clear border, near the cecum, with edema and inflammatory infiltration of local mesenteric fat, thickening of the walls of proximal cecum and distal part of terminal ileum, lymph nodes until 1.2 cm in size in the RLQ.

To complete the investigation a colonoscopy was performed. Normal colon and terminal ileum were seen, except for mild edema and a few tiny erosions of mucosa around the appendiceal orifice. Histologic examination showed signs of moderate acute and chronic colitis at the periappendicular orifice area; no pathologic findings were identified in mucosa of other sites of colon and in the terminal ileum.

The diagnosis of periappendicular abscess was defined. The patient received Ciprofloxacin and Metronidazole intravenously for 3 days, and then per os for 2 weeks. He felt better, but had some weak vague pain in RLQ.

Three month later, blood tests were normal. An abdominal ultrasound was performed and revealed a normal cecum and terminal

ileum, the appendix was enlarged to 9 mm, with thickened and hyperemic wall, no free abdominal liquid and no enlarged lymph nodes were identified.

The patient was admitted for an appendectomy, which was performed by laparoscopic access. On the pathologic examination the appendix was of 6 cm length and 1.5 cm in diameter, and on microscopic examination chronic active appendicitis containing Actinomycotic sulfur granules within inflammatory infiltrate was described (Figures 1a and 1b).

After receiving histological diagnosis, treatment by Amoxicilline was recommended for 6 months.

Currently, the patient is well and presents no symptoms.

### Discussion

Actinomycosis is a rare, chronic, progressive disease characterized by formation of abscesses, draining sinuses, granulation and tissue fibrosis.

The most commonly involved regions are cervicofacial, thoracic, abdominopelvic and cerebral, whereas the abdominal actinomycosis is common (approximately 20% of cases) and has a predilection for the terminal ileum, cecum and appendix [1-3].

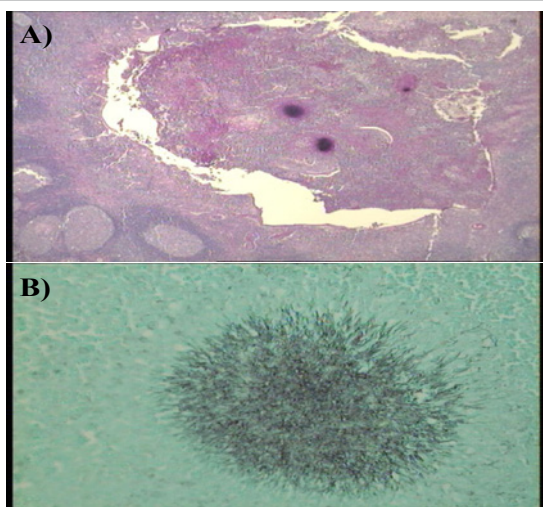
The disease is caused by non-spore-forming, anaerobic, Gram-positive bacterial species of Actinomyces, mostly *A. israelii*, which is a saprophytes and have usually a low pathogenicity. The disease is developed only in the setting of tissue injury like penetrating trauma, perforation of the intestine, or surgical manipulation. Actinomycosis usually occurs in immunocompetent persons [2].

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**Received** September 11, 2012; **Accepted** September 26, 2012; **Published** September 28, 2012

**Citation:** Paritsky M, Cherepnin L (2012) Abdominal Actinomycosis Mimicking Chronic Appendicitis. J Clin Case Rep 2:208. doi:10.4172/2165-7920.1000208

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**Figure 1:** A) Appendix with three sulfur granules in the center (PAS stain, x40), B) Sulfur granule within the appendix (Grocott's Silver stain, x400).

The histological hallmark is the presence of “sulfur-granules” that are commonly considered diagnostic of actinomyceal infection, but are present in only 50% of cases [3].

The most common presentation of abdominal actinomycosis is acute, and the differential diagnosis includes acute appendicitis, Crohn's disease, or colon tumor [3].

The diagnosis is challenging. In most of the cases the diagnosis is by histology and postoperative.

A combination of adequate surgery and long-term antibiotic therapy should be carried out to achieve the complete eradication of actinomycosis. Although the surgical treatment facilitates recovery, it is usually not curative. Antibiotic treatment should be given for prolonged periods of 2 to 12 months. Penicillin is appropriate for treatment of most patients, whereas for those with penicillin allergy tetracycline, erythromycin, clindamycin and cephalosporins are suitable alternatives.

Prolonged observation is necessary after the treatment to detect recurrences [2,4,5].

#### Acknowledgement

Dr. Ibrahim Shajrawi, Pathologic Unit, Baruch Padeh medical center, Poria, Tiberias, Israel

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