

# Abdominal actinomycosis mimicking acute appendicitis

Erdal Karagulle, MD;\* Hale Turan, MD;† Emin Turk, MD;\* Halil Kiyici, MD;‡ Erkan Yildirim, MD;§ Gokhan Moray, MD\*

The most common etiologic organism associated clinically with actinomycosis is *Actinomyces israelii*. *Actinomyces* species exist in the normal flora of the gastrointestinal system and female genitourinary tracts. Abdominal actinomycosis accounts for 20% of all cases, and its diagnosis is difficult.<sup>1</sup>

We report a case of abdominal actinomycosis that mimicked acute appendicitis.

## Case report

A 51-year-old woman with right lower quadrant abdominal pain, fever and vomiting that persisted for 3 days was admitted to our emergency service. On physical examination, her pulse rate was 96 beats/min, her body temperature was 37.4°C, and she had tenderness and rebound pain in the right lower quadrant of the abdomen. The patient had had an intrauterine contraceptive device in place for 10 years. The laboratory findings were within normal limits, except for a C-reactive protein level of 71 mg/L. A computed tomography (CT) scan of the abdomen showed a lesion 3 cm × 2 cm in size that retained minimal intravenous contrast material near the cecum (Fig. 1). Inflammation surrounding this lesion was noted, and a diagnosis of panniculitis was considered. The diameter of the appendix was 7 mm (Fig. 1D).

Because the patient's clinical signs suggested acute appendicitis, surgery was performed. Abscesses 4 cm × 3 cm and 2 cm × 1 cm in size were found on the greater omentum and in the periappen-

dicular region respectively. The abscesses and the appendix were excised. Pathological and light microscopic examination showed *Actinomyces* colonies between inflammatory cells (Fig. 2) and a normal appendix. Postoperatively, the patient received 50 mg/kg of ampicillin intravenously each day for 14 days, followed by 500 mg of amoxicillin orally 3 times a day for 3 months. In addition, the intrauterine contraceptive device was removed. Findings on air-contrast barium enema performed after discharge were within normal limits. Currently, the pa-

tient is well, has no signs or symptoms of omental actinomycosis and the CT scan is normal.

## Discussion

Abdominal actinomycosis is a rare and insidious clinical entity.<sup>1,2</sup> It should be considered in the diagnosis of a patient who presents with nonspecific symptoms and signs including fever, a palpable mass and leukocytosis.<sup>2</sup> Recognized causal associations include a history of appendicitis, diverticulitis, inflammatory bowel disease,

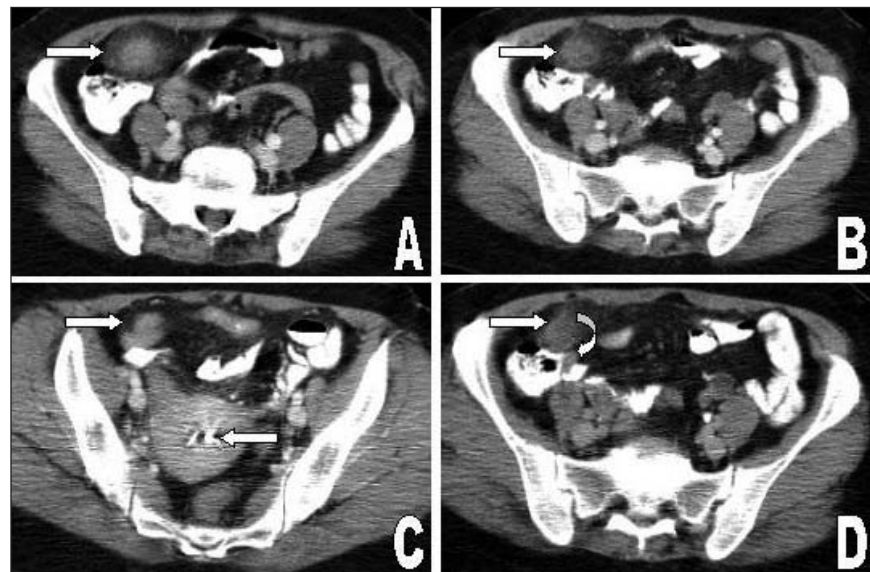


FIG. 1. Abdominal computed tomography images after the administration of oral and intravenous contrast show a 3 × 2-cm contrast-enhancing mass lesion near the cecum (A, B, C (right arrow), D). The intrauterine device is indicated by the arrow on the left. The thickened appendix is shown in panel D (curved arrow).

From the Departments of \*Surgery, †Infectious Diseases and Clinical Microbiology, ‡Pathology and §Radiology, Baskent University, Ankara, Turkey

Accepted for publication Mar. 25, 2008

**Correspondence to:** Dr. H. Turan, Baskent University Konya Medical and Research Center, Hocacihan mahalles, Saray caddesi No: 1, Selçuklu 42080 Konya, Turkey; fax 90 332 2570637; turanhale@yahoo.com

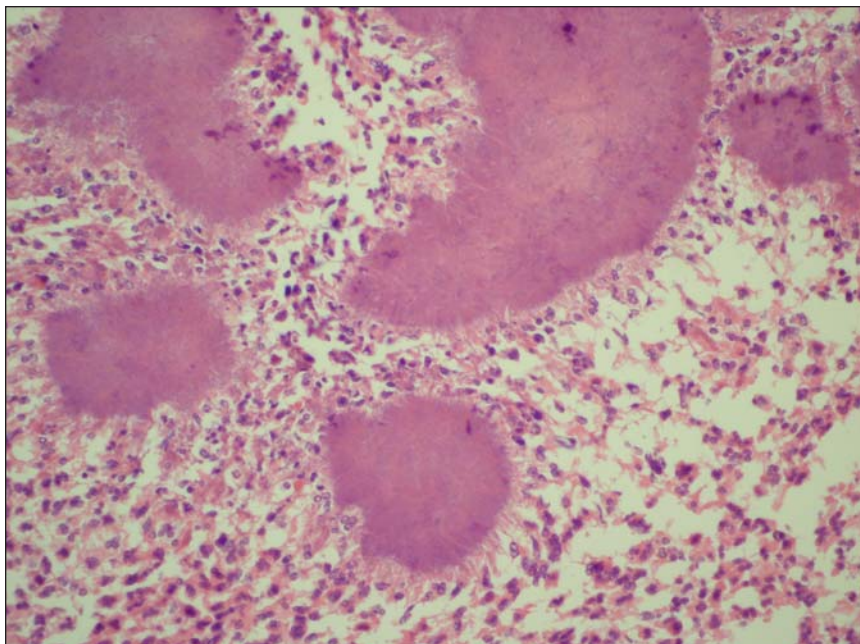


FIG. 2. On histologic examination, the abscesses show *Actinomyces* colonies between inflammatory cells (hematoxylin–eosin stain, original magnification  $\times 400$ ).

use of an intrauterine contraceptive device and open or laparoscopic surgery.<sup>3</sup> Abdominal actinomycosis should be differentiated from Crohn disease, ulcerative colitis, diverticulitis, neoplasms, intestinal tuberculosis and appendicitis.<sup>2,4</sup> We thought that the source of actinomycosis in our patient was the long-term use of an intrauterine contraceptive device.

Radiologic techniques are inadequate in the diagnosis of abdominal actinomycosis, except for CT, which shows the site and content of the lesions and their relation to adjacent tissues.<sup>2,3</sup> When actinomycosis is suspected, CT-guided aspira-

tion, with or without core biopsy of suspicious lesions, is a useful investigation.<sup>3</sup> Surgery is also valuable as a therapeutic adjunct because it enables the débridement of necrotic tissue, the removal of persistent sinuses and a definitive diagnosis.<sup>2</sup> The definitive diagnosis of actinomycosis requires microscopic proof of either the pathogen itself or the presence of specific “sulfur granules.”<sup>2,3</sup> A combination of long-term antibiotic therapy and adequate surgery is necessary to ensure the complete eradication of actinomycosis because of the large amount of reactive fibrosis formed by the infection.<sup>5</sup>

However, recent studies have shown that a combination of complete surgical resection followed by short-term antibiotic treatment is effective therapy.<sup>4</sup> Penicillin has been shown to be effective in treating abdominal actinomycosis. Other antibiotics used include tetracycline, erythromycin, doxycycline, clindamycin, imipenem, ceftriaxone and ciprofloxacin.<sup>1</sup>

As a result, abdominal actinomycosis should be considered in the differential diagnosis of patients who have predisposing factors for actinomycosis and symptoms such as fever, a palpable mass and leukocytosis. In addition, surgery can be performed to supply a definitive diagnosis.

Competing interests: None declared.

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