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CASE REPORT

Hepatosplenic actinomycosis in an immunocompetent patient

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Hepatosplenic abscess caused by *Actinomyces* is rare and often misdiagnosed as malignancy. Herein, we report a case of hepatosplenic actinomycosis in a 37-year-old immunocompetent man with a 2-month clinical history of intermittent fever and upper left abdominal pain. Physical examination revealed a mildly ill-appearing man with a low-grade fever (38°C) and upper left quadrant abdominal tenderness. Abdominal sonographic examination showed the presence of a 6.3 cm × 6.5 cm heterogeneous abscess with a hypoechoic center and honeycomb appearance in an enlarged spleen (8 cm × 5 cm). Computerized tomography of the abdomen revealed a multiloculated splenic lesion, and laparotomy showed multiple hepatic nodules and a splenic abscess. Histopathological examination of the biopsy revealed filamentous branching bacilli and sulfur granules in the hepatosplenic abscess. The patient successfully underwent splenectomy accompanied by intravenous and oral penicillin treatment. Proper and prompt diagnosis of hepatosplenic actinomycosis is important because the therapeutic plan and prognosis of this pathogen are quite different from other microorganisms and malignancies.

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Introduction

Actinomyces spp. are Gram-positive, microaerobic-to-anaerobic filamentous bacteria that cause actinomycosis and are opportunistic organisms that normally colonize the upper respiratory tract, the gastrointestinal tract, and female genital tract. *Actinomyces israelii* is the most commonly reported pathogenic species. Actinomycosis often masquerades as tumorigenesis, and formulating the proper diagnosis—tumor versus abscess—is often difficult.[1,2] Abdominal actinomycosis has been reported at various locations, including pelvic abscesses in association with intrauterine devices, the abdominal wall, liver, appendicitis, anus with spread to the scrotum, and the rectum.[1–5] Hepatic involvement has been reported in 15% of cases of abdominal actinomycosis and 5% of cases of actinomycosis.[6] Splenic actinomycosis is rare and usually associated with various immunocompromised conditions, such as leukemia, diabetes, autoimmune disease, and alcoholism.[7–10] Here, we report a novel case of hepatosplenic actinomycosis in an immunocompetent patient who recovered after splenectomy and prolonged administration of penicillin.

Case report

A 37-year-old man was admitted to En-Chu-Kong Hospital with a 2-month history of intermittent fever and upper left abdominal pain. He had not undergone prior oral, abdominal, or endoscopic procedures and had no history of surgery, abdominal trauma, foreign body ingestion or aspiration, or typhoid fever. Physical examination revealed a mildly ill-appearing man with a low-grade fever (38°C) and upper left quadrant abdominal tenderness, but no lymphadenopathy was noted in cervical, axillary, or inguinal areas. We did not observe the presence of oropharyngeal ulcers, but we did notice gingival swelling, a few caries, and severe calculi in foul-smelling oral cavities. The chest was clear to auscultation, and the patient's heartbeat was regular without murmurs, rubs, or gallops. Chest radiograph showed no cardiopulmonary disease, and an electrocardiogram (ECG) showed no abnormalities. Initial laboratory values included the following: leukocyte count, 13.2 $\times$ $10^3/\mu L$ (79% neutrophils, 14.4% lymphocytes, 7.1% monocytes, 0.2% eosinophils, 0.3% basophils); hemoglobin, 12.3 g/dL; platelet count, 297 $\times$ $10^3/\mu L$; aspartate aminotransferase (AST), 2 IU/L (normal: <38 IU/L); alanine aminotransferase (ALT), 40 IU/L (normal: <41 IU/L); alkaline phosphatase (ALP), 216 IU/L (normal: <128 IU/L); total bilirubin, 0.3 mg/dL (normal: <1.2 mg/dL); gamma-glutamyltransferase, 132 IU/L (normal: < 63 IU/L); C-reactive protein (CRP), 19.87 mg/dL (normal: <0.44 mg/dL); complement components C3, 109 mg/dL (normal: 90–180 mg/dL); and complement component C4, 22.7 (normal: 10–40 mg/dL). Antinuclear antibody (ANA) testing was negative. Serum protein electrophoresis revealed the following: albumin, 3.0 g/dL (normal: 3.2–5.0 g/dL); α-1

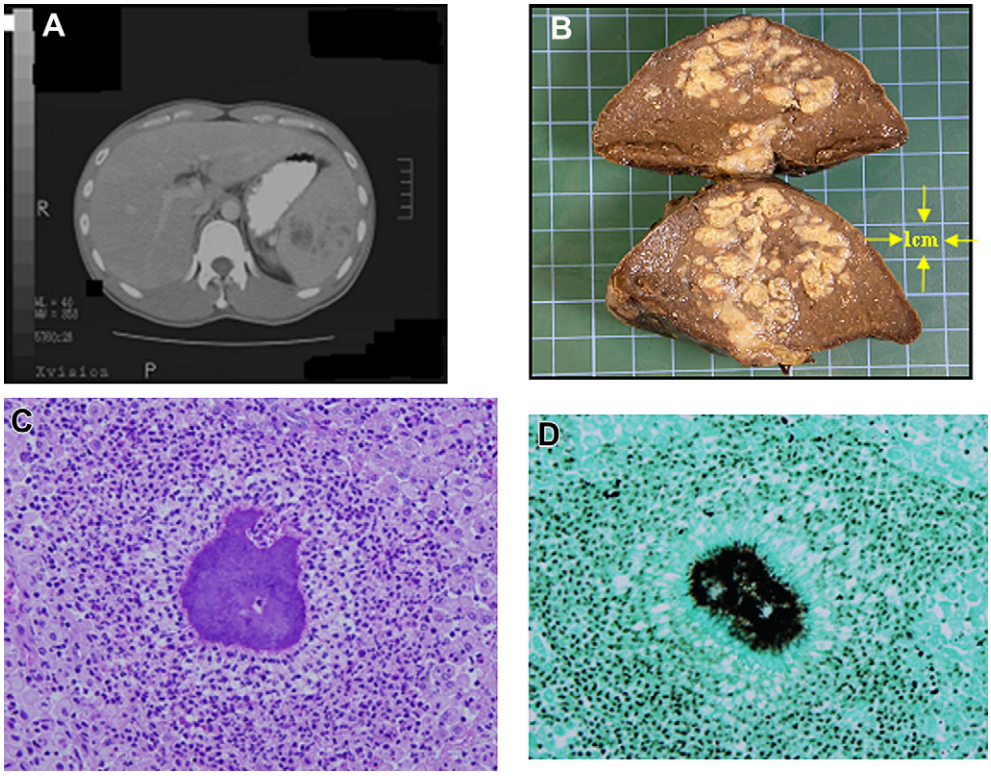

Figure 1 (A) CT radiograph showing ill-defined hypodense lesions with septum in the spleen. (B) Gross pathological specimen. On splenic resection, the spleen exhibited surface nodularity. Multiple pus-filled nodules were sectioned. (C) Filamentous bacteria in a sulfur granule surrounded by inflammatory cells (hematoxylin and eosin stain, 400×). (D) Characteristic filamentous bacteria radiating from the peripheral border (Grocott-Gomori methenamine-silver nitrate stain, 200×).