Case Report

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A Rare Case of Ileal Actinomycosis Mimicking Crohns Ileitis

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Abstract

Background: Actinomycosis is a rare chronic granulomatous inflammatory disease caused by an anaerobic bacterium, mainly residing in cervicofascial region, and rarel affects the intestines. Diagnosis is seldom made preoperatively due to the lack of specific clinical, laboratory and radiological features.

Case presentation: We present a case of ileal perforation secondary to actinomycosis infection which was mimicking crohns ileitis. Patient under went emergency laparotomy, followed by right hemicolectomy. Post operative histopathology revealed actinomycosis infection and was put on penicillins later.

Conclusion: Preoperative diagnosis of actinomycosis involving intestines is rare and difficult to conclude. Penicillin is the drug of choice for treatment.

Keywords: Actinomyces israelii; Ileum; Perforation, Crohns disease.

Introduction

Abdominal actinomycosis is a chronic suppurative disease due to an anaerobic, gram positive bacterium, actinomyces Israelii, which is part of the native microflora of the digestive system,female genital tract, and the bronchi in humans. It is usually presented as cervicofacial clinical form, comprising up to 60% of the cases, while the abdominal form represents 20% of the cases.[1,2,3] There are many types of actinomyces, with actinomyces israelii being most often the cause of actinomycosis in humans.

Actinomycosis can mimic other abdominal diseases as diverticulitis, abscess, inflammatory bowel disease and malignant tumors, presenting a diagnostic challenge and identified post-operatively in most of the cases.[3] The treatment of choice is antibiotic administration, whenever it is possible due to diagnostic administration, although in most cases surgical intervention is required. Diagnosis is confirmed only post operatively. We present a case of ileocaecal actinomycosis mimicking crohns disease.

Case report

A 25 year old malepatient presented to the emergency department with complains of severe right lower abdomen pain since 2 days associated with fever and vomiting. Patient had a past history of being diagnosed with ileal stricture and had undergone medical line of management for the same since 2 years (Fig. 2).

On initial evaluation, patient was febrile, tachypnoeic and tachycardia was present. There were signs of local peritonitis with a palpable mass in the right lower abdomen. The laboratory examination showed leucocytosis with rised CRP. Clinical diagnosis of appendicular mass or

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ileal inflammatory mass was made based on the abdomen findings. Computed tomography scan of the abdomen revealed terminal ileitis with adjacent conglomerated lymphadenopathy and hypodense collection in the right iliac fossa (Fig. 1).

In view of underlying sepsis, emergency laparotomy was done. On laparotomy, thickened, oedematous and clumping of the terminal ileal bowel loops due to perforation was noted. Right hemicolectomy with end to side ileo-colonic anastomosis was done. Thorough peritoneal lavage was given. Further exploration of the abdominal cavity revealed no other pathological findings.

Histopathological examination revealed sheets of mixed inflammatory infiltrate along with areas of ill defined granulomas, cluster of giant cells and epitheloid cells. Also noted an aggregrate of fine filamentous, bacillary structures surrounded by dense inflammatory infiltrate(Fig.3).

Post-operative period was uneventful. Patient was started on intravenous amoxycillin after receiving the pathology report for a duration of two weeks and discharged with oral penicillins for 6 months.

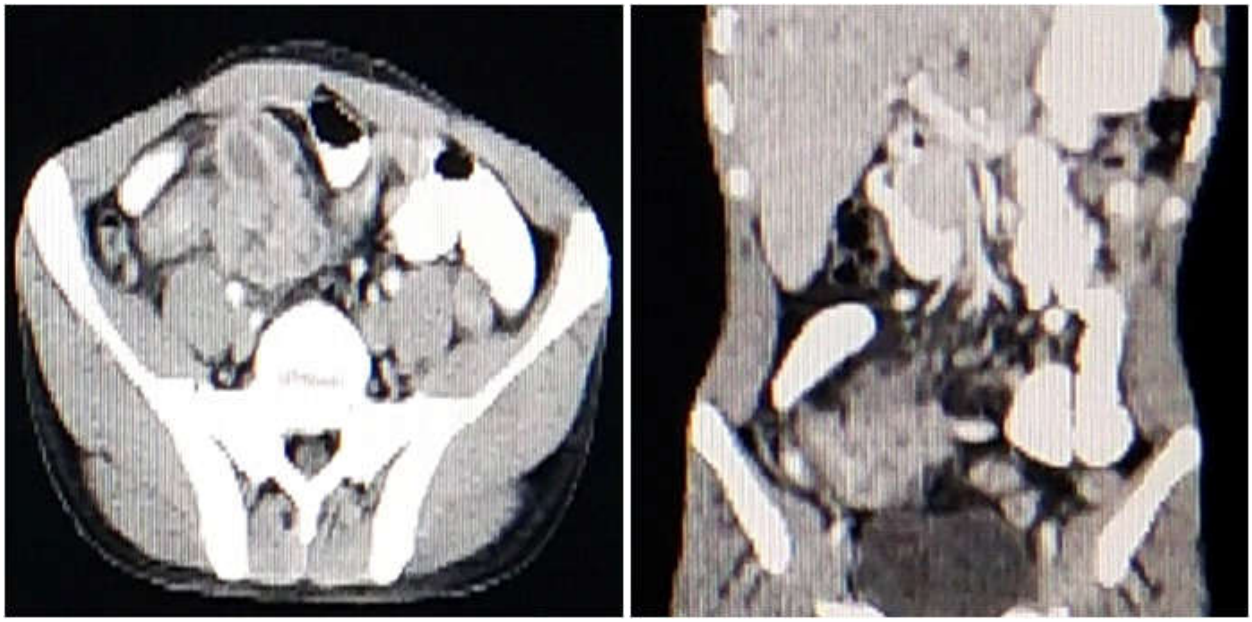

Fig. 1. Computed tomography abdomen showing edematous and thickened bowel loops in right iliac fossa suggestive of ileal inflammatory mass with collection

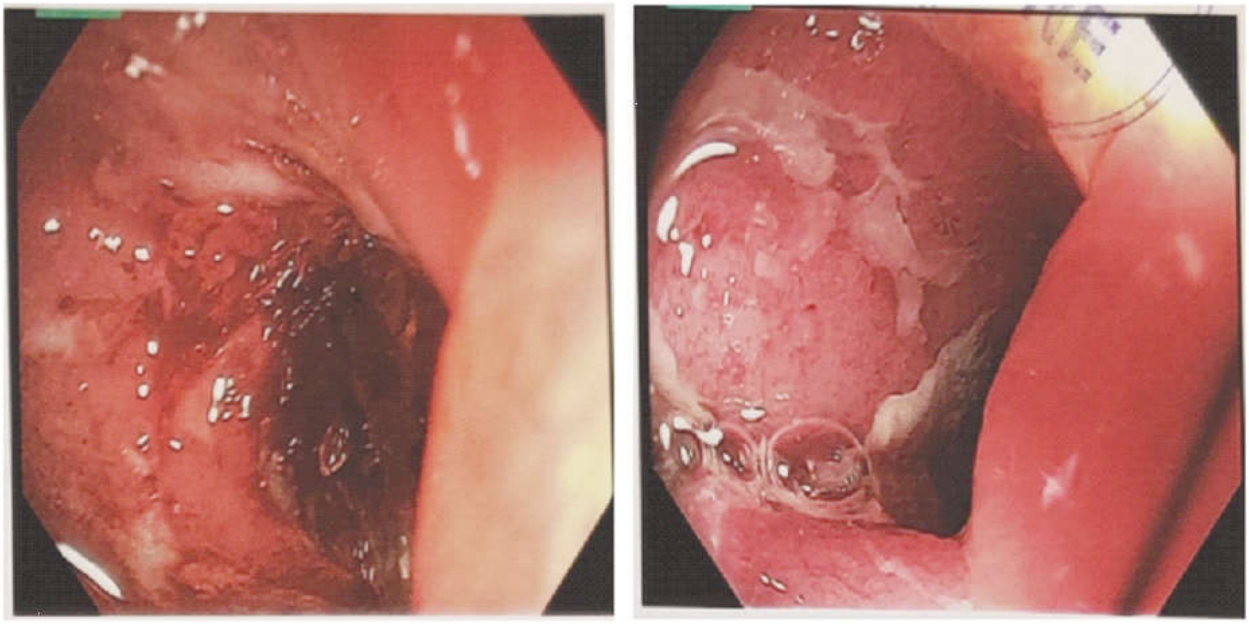

Fig. 2. Enteroscopic view of the terminal ileum showing inflammatory stricture

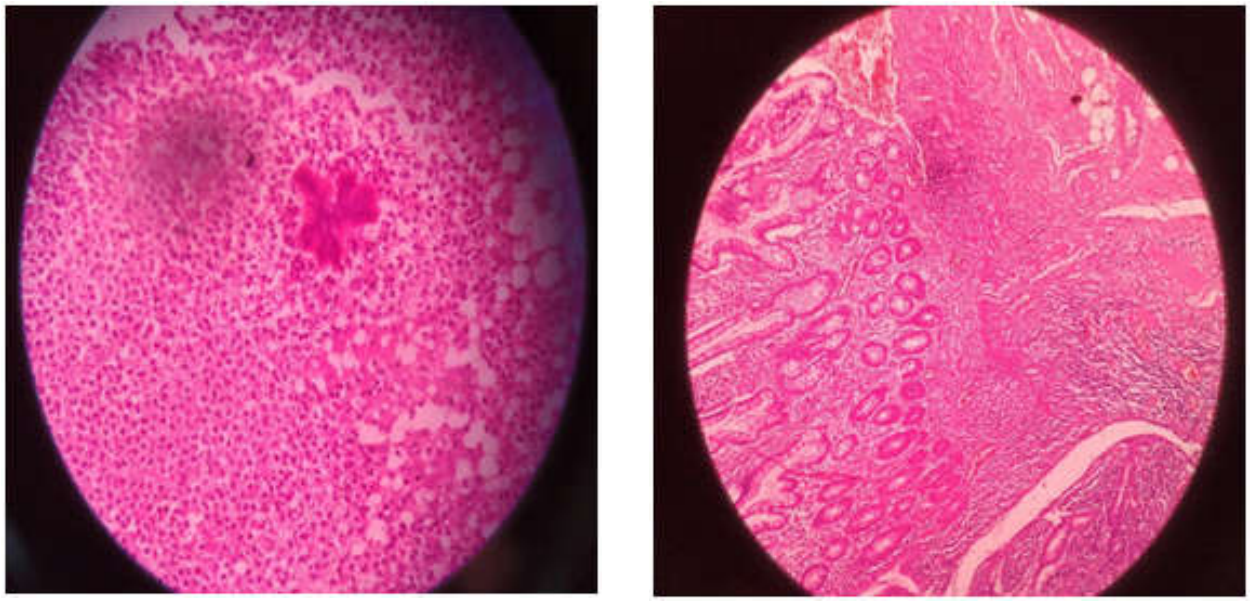

Fig. 3. Histopathological specimen with Gram positive staining of actinomyces israelli colony

Discussion

Actinomyces Israeli, a filamentous, gram-positive bacillus,is a constant part of the micro flora in the human oral cavity[4]. Actinomycosis presents a worldwide distribution and no sex predilection is obvious although most of the reportedcases refer to males. Abdominal involvement occurs inonly 20 percent of all cases of actinomycosis and canmimic malignancy, tuberculosis and inflammatory bowel disease [5]

Actinomyces is not always pathogenic, and normallyexists in stagnated cecum or sigmoid colon. Predisposingfactors include previous abdominal surgical operations,intestinal necrosis, foreign bodies, appendicitis and perforation. Some authors suggest thatinflammatory or neoplasticprocesses may contribute to actinomycosisdevelopment.[6,7] Bowel obstruction and perforation due to actinomycosiswithout predisposing factors is veryrare and only fewcases have been described in the literature. Under certain circumstancesthemucosal surface is breached and the infection spreads locallywith only a rare incidence of hematogenous or lymphaticspread.[8,9] Because ofits resemblance to other diseasessuch as appendicitis, coloncarcinoma, Crohn's disease and granulomatous disease suchastuberculosis, the diagnosis of abdominal actinomycosis isdifficult.

CT scan seems to be themost reliablediagnostic tool for suggesting the diagnosis and determining the anatomic allocation, as well as monitoring theeffectiveness of treatment.[10,11] The most important CT feature for the correct diagnosis is a largemass adjacent to the involved bowel, which isalso a very common finding in patients with colon actinomycosis. Inrectosigmoid, coloncystic masses are more common, whereas in transverse or ascending colon purely solidmasses are the predominant finding.[12,13] Goldwag et. al. suggest that CT guided fine needle aspiration can be both diagnostic and therapeutic. Microbiological analysis of material acquired by FNA may reveal sulfur granules, which are suggesting actinomy cosisandnocardiosis. In most of the cases the sample receive is difficult especially when intestinal and colon are involved. We believe that in cases where the CT findings are non specific, surgical exploration is necessary not only for diagnostic but also for the rapeuticreasons.[14] Because symptoms and signs are nonspecific, the diagnosis is usually delayed with only 10% of cases diagnosed preoperatively.[15,16]

A definitive diagnosis is based on histological identification of gram-positive filamentous organisms and sulfur granules. The latter are colonies of organisms that appear as round or oval basophilic masses with eosinophilic terminal "clubs" on staining with H&E. Special stains including Gram and Grocott methenamine silver stain demonstrated the gram-positive filamentous branching bacteria at the periphery of the grains.[17] Preoperative diagnosis is difficult although insome cases colonoscopy and histological examination of endoscopically acquired specimen can set the diagnosis. In our casethe ileal lumen was obstructed and biopsies were nonspecific. The cause for actinomycos is in this patient is uncertain,

and diagnosed only after histopathological examination. Combined treatment with antibiotics and surgical resectionis efficient in more than 90% of the actinomycosis, and most authors suggest that extensivelesions, such as the one described herein, need to be surgically treated, in association with antibiotics.[1,2] The treatment of choice foractinomycos is is high doses of crystalline penicillin G (18 to24 million U/day) for 2 to 4 weeks, followed by oral penicillin oramoxicillin for 6 to 12 months.[17]

Conclusion

Correct diagnosis is difficult and can be achieved preoperativelyin only 10% of thecases, but it is of great importance because the appropriate treatment includes primarily penicillin administration. Surgical interventionis indicated only in cases with obscure diagnosis and for necrotic debridement removal. Although diagnosis only with imaging techniques and laboratory tests is difficult, abdominal actinomycosis should always be included in the differential diagnosis in patients with abdominal masses. Immediate and accurate diagnosis, usually by FNA and cytology examination can prevent unnecessary surgical treatment.

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