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Case Report

A rare case of cecal actinomycosis presenting as cecal mass with appendicular perforation

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ABSTRACT

Actinomycosis of colon is an uncommon disease. It is a chronic granulomatous disease caused by *Actinomyces* species. The ileo-cecal region is most commonly affected, while the left side of the colon is more rarely involved. Presentation may vary from nonspecific symptoms and signs to an acute abdomen. It may mimic colonic malignancy, obstruction or perforated viscera. Preoperative diagnosis is rare and is established only in less than 10% of cases. We report a very rare case of cecal actinomycosis presenting as acute abdomen with a vague lump in right iliac fossa which was found to be appendicular perforation with cecal mass during emergency laparotomy. The final diagnosis was only found post-operatively on histopathology.

Keywords: Actinomycosis, Antibiotics, Appendicular perforation, Cecal mass, Pus culture sensitivity

INTRODUCTION

Actinomycosis is an uncommon inflammatory entity caused by the universally distributed anaerobic bacterium, *Actinomyces israeli*. This *Actinomyces* is a gram-positive, rather microaerophilic bacterium, which consists a component of the normal human flora. *Actinomyces* requires the presence of many other bacteria, which destroy the over-vascularised regions and convert aerobic microenvironment to an anaerobic one. Then it's easy for *Actinomyces* to migrate, infect and proliferate in already injured tissue. Primary bowel involvement is rare, although it has been increased in frequency over the last years. The most common sites of the disease are the cecum with the appendix and the transverse colon.[1,2]

Actinomycosis can mimic other abdominal diseases as diverticulitis, abscesses, inflammatory bowel disease, obstruction, perforated viscera 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 difficulties, although in most cases surgical intervention is performed. Diagnosis can be achieved with endoscopy and imaging techniques, as computed tomography (CT scan) and magnetic resonance imaging (MRI).

METHODS

A 65-year-old female patient presented with acute abdomen and a vague lump in right iliac fossa in the emergency department having signs of peritonitis with high grade fever, tachycardia and raised leukocyte count and polymorphs suggestive of early septicaemia. Radiological investigations were suggestive of suspected appendicular lump with appendicular perforation. Emergency laparotomy done Intra-operatively there was sloughed out appendix with cecal perforation with pus

collection of approximately 100cc with mass in cecum, right hemicolectomy was done considering cecal mass as cecal malignancy leading to obstructive appendicitis and its perforation. Rest of the abdomen was normal. Postoperative period was uneventful. Pus culture report showed no growth. Histopathological report revealed actinomycosis of cecum with sloughed out appendix. Systemic intravenous penicillin treatment was initiated. Therapy continued for 10 days and then followed by oral penicillin for 6 months. No postoperative complications were observed, and the patient was discharged on 14th day.

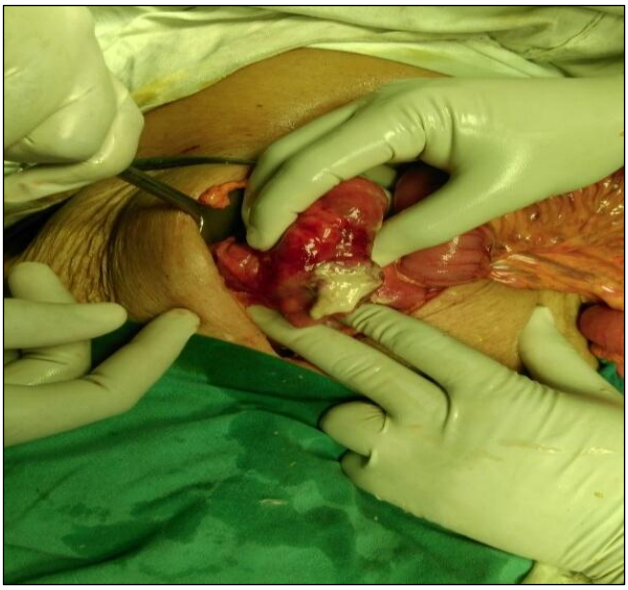

Figure 1: Sluffed out appendix with pus discharge.

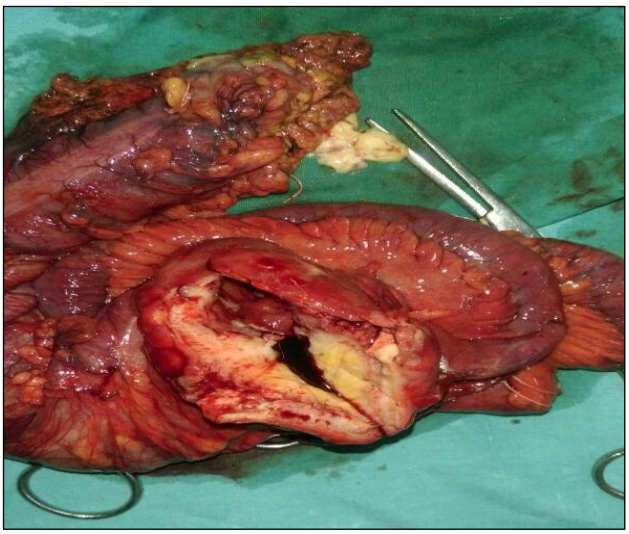

Figure 2: Cut surface of cecum with of mass.

DISCUSSION

Actinomyces israeli, a filamentous, gram-positive bacillus, is a constant part of the micro flora in the human oral cavity.[4]

Abdominal involvement occurs in only 20 percent of all cases of actinomycosis and can mimic malignancy, tuberculosis and inflammatory bowel disease.[5]

Actinomyces is not always pathogenic, and normally exists in stagnated cecum or sigmoid colon. Predisposing factors include previous abdominal surgical operations, intestinal necrosis, foreign bodies, appendicitis and perforation. Some authors suggest that inflammatory or neoplastic processes may contribute to actinomycosis development.[6,7]

Preoperative diagnosis is difficult although in some cases colonoscopy and histological examination of endoscopically acquired specimen can set the diagnosis. Some authors suggest that abdominal CT scan with contrast enhancement may reveal a solid mass (intraluminal or extraluminal) with focal areas of attenuation invading the adjacent tissues and suggesting the diagnosis.[8,9]

Most common findings in CT scan and/or barium study include mural invasion with stricture formation, mass effect with tapered narrowing of the lumen, and thickened mucosal folds. In many cases the radiologic findings are similar to those of Crohn's disease, intestinal tuberculosis, and excavated malignant tumors.[10,11] The most important CT feature for the correct diagnosis is a large mass adjacent to the involved bowel, which is also a very common finding in patients with colon actinomycosis. In rectosigmoid colon cystic masses are more common, whereas in transverse or ascending colon purely solid masses are the predominant finding. [12, 13] In our case the adjacent bowel or the retroperitoneum was not involved.

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 sulphur granules, which are suggesting actinomycosis and nocardiosis. Authors believe that in cases where the radiological findings are non-specific, surgical exploration is necessary not only for diagnostic but also for therapeutic reasons.[14]

High dose intravenous penicillin injection followed by orally administered penicillin for at least 6–12 months is the treatment of choice. Penicillin administration decreases morbidity and the patient may avoid an unnecessary operation.[15,16]

Correct diagnosis is difficult and can be achieved preoperatively in only 10% of the cases, but it is of great importance because the appropriate treatment includes primarily penicillin administration. Surgical intervention is 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.[1]

CONCLUSION

The diagnosis of abdominal actinomycosis is tricky and difficult. Radiological findings are not very reliable. However, a high degree of suspicion should be maintained for its pre-operative diagnosis. FNAC can help to avoid surgery. Nonetheless many cases will still require surgical exploration due to associated bowel perforation and other acute presentations. The differential diagnosis of abdominal actinomycosis should always be kept in mind for cases of abdominal masses and inflammatory conditions.

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