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Case Report

Caecal Actinomycosis Mimicking Malignancy with a Long-Standing Intrauterine Device: A Rare Case Report

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Abstract

Background: Actinomycosis is an uncommon, chronic, granulomatous disease that can be mistaken for a malignant tumor. Abdominopelvic actinomycosis constitutes about 20% of all actinomycosis cases and may mimic malignancy, tuberculosis, or other abdominopelvic inflammatory diseases. This condition is more prevalent in women who use an intrauterine device. We report the case of a 38 year old female, known case of type 2 diabetes mellitus with a down 3 year history of right sided abdominal pain and discomfort, weight loss with a previous history of intrauterine device for 5 years she has undergone evaluation for her complaints at multiple times in a peripheral health care centers with colonoscopy and mucosal biopsies and treated for inflammatory bowel disease. CECT Enterogram showed wall thickening involving the IC junction and medial wall of caecum and she undergone laprotomy and right hemicolectomy. Histopathologic evaluation of surgical specimens showed actinomycosis in the caecal wall. The findings were immediately informed to the clinician and advised for a prompt further evaluation and management.

Keywords: Abdominopelvic actinomycosis, Intrauterine device, Right hemicolectomy.

INTRODUCTION

Actinomyces species are gram-positive, nonmotile, unencapsulated, non spore-forming, anaerobic bacteria that colonize the normal flora of the oral cavity, gastrointestinal system, and female genital tract.

Actinomycosis is a chronic progressive suppurative disease characterized by the formation of multiple abscesses, draining sinuses, abundant granulation tissue, and dense fibrous tissue. Any disease or process that causes a breach in the protective mucosa, such as perforation of a viscus, surgery, trauma, or use of an intrauterine device (IUD), can be complicated by the proliferation of Actinomyces.

Pelvic actinomycosis has recently become more prevalent and is associated almost exclusively with women who use IUDs. Diagnosing abdominopelvic actinomycosis preoperatively presents a challenge to the clinician because of the rarity and clinical variety of this condition.

Abdominopelvic actinomycosis may mimic a neoplasm because of similar physical findings, clinical course, and radiographic changes. A colon carcinoma often is the provisional diagnosis before the identification of Actinomyces.

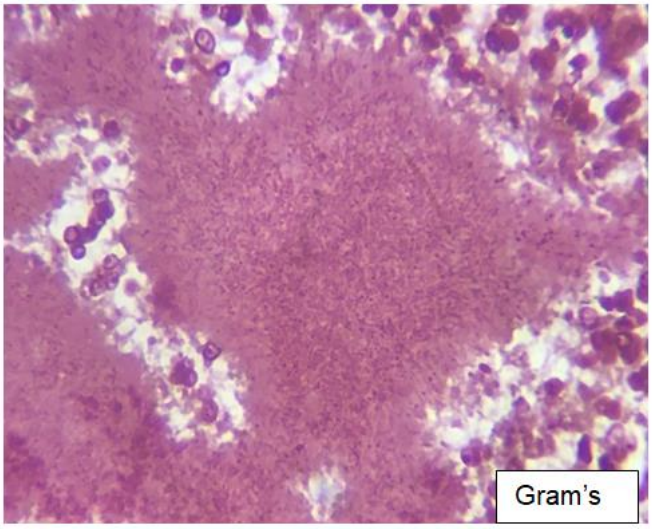
CLINICAL HISTORY:

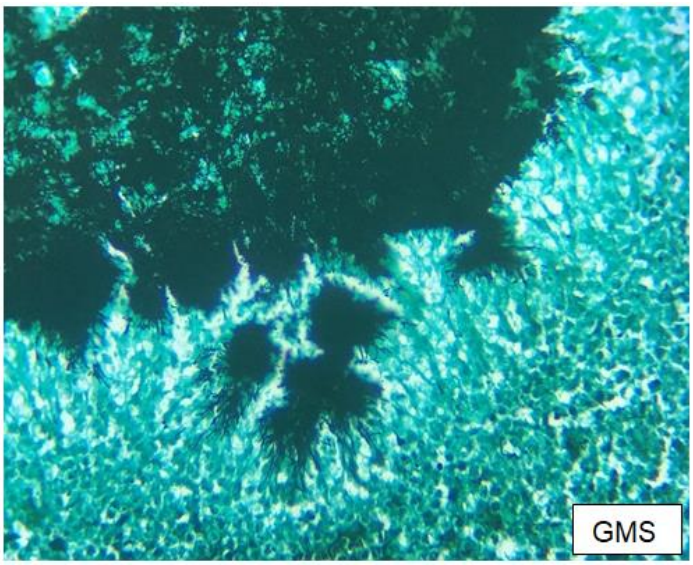
We report the case of a 38 yr old female, known case of type 2 diabetes mellitus with a down 3 year history of right sided abdominal pain and discomfort, weight loss with a previous history of intrauterine device for 5 years she has undergone evaluation for her complaints at multiple times in a peripheral health care centers with colonoscopy and mucosal biopsies and treated for inflammatory bowel disease. CECT Enterogram showed wall thickening involving the IC junction and medial wall of caecum and she undergone laprotomy and right hemicolectomy.

MACROSCOPY: Received right hemicolectomy specimen measuring 16 cm in length with caecal wall showing yellowish to whitish thickened area near the IC valve and the opening of appendix measuring 4 cm in greatest dimension.

GROSS IMAGE:

MICROSCOPY: Sections from the caecal wall shows extensive areas of suppurative and granulomatous inflammation with a focus showing actinomycotic colony with Splendore- Hoeppli Phenomenon and marked areas with lymphoid hyperplasia. Special stains-GMS, Gram's, PAS, AFB done to confirm the diagnosis.

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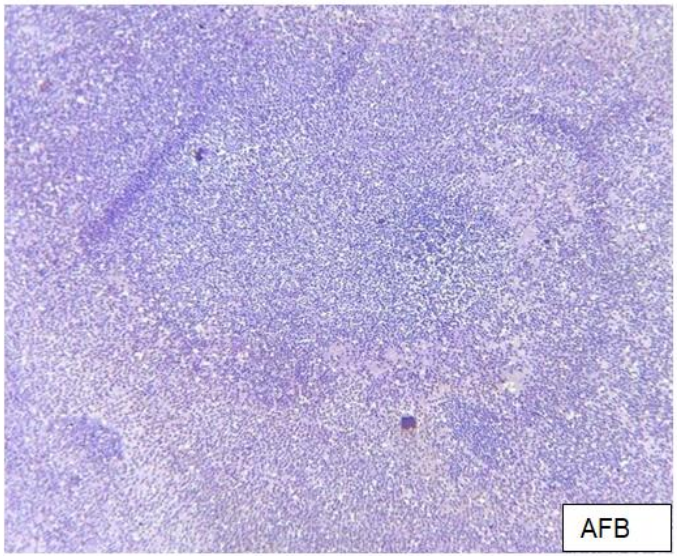
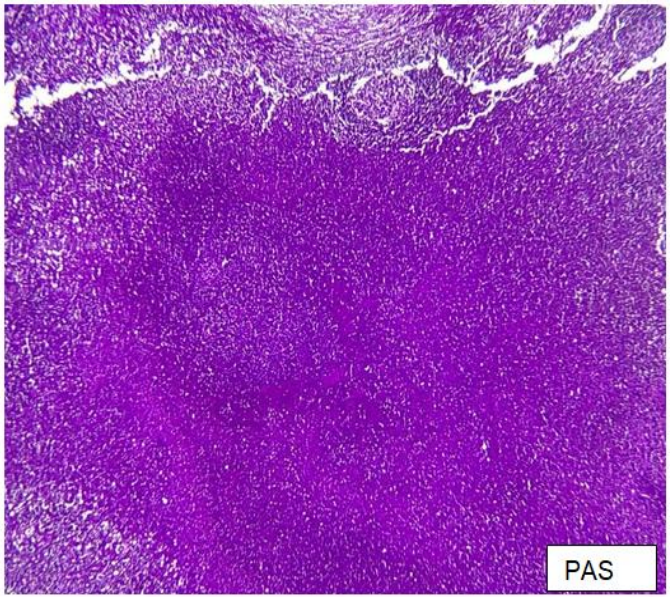

AFB


PAS

DISCUSSION

Actinomycosis, first described by Ponfick in 1879, is a chronic suppurative disease caused by anaerobic, filamentous, gram-positive bacteria. Actinomyces israelii is part of the microflora of the human oral cavity, gastrointestinal tract, and genital tract. The organism cannot cross normal mucosal barriers. Therefore, opportunistic infections can occur only in the context of underlying local disease such as trauma, surgery, or a foreign body that penetrates the mucosal barrier.

There are 3 main clinicopathologic presentations described, with varied incidence, including cervicofacial, thoracic, and abdominopelvic. Cervicofacial involvement is the most common, and abdominopelvic involvement is second or third in frequency after thoracic disease.4 Other sites of involvement also have been reported, including the liver, bone, and perianal region.

The pathogenesis of abdominal actinomycosis is poorly understood. Intra-abdominal organ involvement may occur as a blood-borne infection or by swallowing. Actinomyces bacteria normally inhabit the colon, predominating in areas of stagnation such as the cecum and appendix. Actinomyces organisms require injury to the normal mucosa to penetrate and cause disease. Predisposing factors may include appendicitis, diverticulitis, gastrointestinal perforation, previous surgery, foreign body, or neoplasia. Therefore, abdominal actinomycosis is included in the differential diagnosis with other inflammatory diseases such as ulcerative colitis, Crohn disease, tuberculosis, diverticulitis, and pelvic inflammatory disease.

Pelvic actinomycosis recently has become more prevalent. The pathogenesis of pelvic actinomycosis may occur as either an ascending infection from the lower genital tract or spread from an intestinal lesion. Recent reports have documented an increased incidence of pelvic actinomycosis in women using IUDs. The association between IUDs and pelvic actinomycosis was first described in 1970 and has been well documented. Actinomyces can be identified on routine vaginal examination in 10% asymptomatic IUD users, and 25% IUD users have associated symptoms. Although IUD use is strongly correlated with abdominopelvic actinomycosis, the duration of IUD implantation that increases the risk of developing actinomycosis infection has not been established.

There are no specific signs or symptoms of abdominopelvic actinomycosis. Although the most common physical examination findings include a palpable mass, visible sinus tract, or fistula, the most common clinical presentation includes abdominopelvic pain, nausea, vomiting, fever, weight loss, and defecation disturbances, as in our patient. Most initial signs and symptoms become evident weeks or years after the primary lesion is evident.

Establishing a diagnosis of abdominopelvic actinomycosis preoperatively is difficult because of the nonspecific nature of clinical, laboratory, and radiographic findings. A preoperative diagnosis is made in <10% cases.9 In most cases, the diagnosis is made during the operation and confirmed by pathologic examination. The use of radiographic studies to establish a diagnosis of abdominopelvic actinomycosis has been extensively reported, but there are few specific radiographic signs. A CT scan may be helpful to establish the extent of the abdominal or pelvic organs involved and show features of the wall of the mass.

A definitive diagnosis can be made based on histopathologic identification of actinomycotic structures. It is necessary to demonstrate microscopically either the pathogen itself or the specific yellow sulfur granule microcolonies formed by the actinomycotic filaments on tissue slides or smears from the fistula tract. Microbiologic cultures with a fresh sample rarely are positive because Actinomyces organisms require specific anaerobic conditions and require 1 week to exhibit growth. These cultures are negative in 76% cases. Some serologic assays have been developed, but the sensitivity and specificity of these assays are insufficient for use in clinical practice.

Treatment of abdominal actinomycosis is dependent on both the extent of the disease and the condition of the patient. Most investigators have agreed that extensive lesions must be treated surgically with resection or drainage, supplemented with long-term antibiotic therapy. Penicillin G is the first-choice antibiotic therapy for actinomycosis. Initial treatment with parenteral penicillin G (10–24 million units daily) for 4 to 6 weeks can be followed by phenoxypenicillin, amoxicillin, or ampicillin for a minimum 6 to 12 months. Tetracyclines, doxycycline, erythromycin, clindamycin, or cephalosporins are suitable alternatives in patients who are allergic to penicillin. A few previous studies have suggested that antimicrobial therapy should be continued until all signs of inflammation disappear, which can take from several months to 1 year because of the reactive fibrosis caused by the organism. We share the same opinion about the duration of medical treatment. Combined medical and surgical treatment provides good results in >90% of patients, and mortality is rare.

CONCLUSION

In conclusion, abdominopelvic actinomycosis is part of the differential diagnosis of abdominal malignancy, inflammatory conditions, and infectious disease. Women who have used IUDs are particularly at risk. A preoperative diagnosis is very rare because of nonspecific clinical, laboratory, and imaging findings.

The difficulty of preoperative diagnosis may result in inappropriately extensive resections. However, optimal treatment includes abscess drainage and long-term high-dose penicillin to prevent recurrence.

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