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# A RARE CASE OF ILEO-COLIC JUNCTION PRIMARY ACTINOMYCOSIS

General Surgery

**Dr. Hari S. Mahobia*** Resident Department of General Surgery, Aditya Birla Memorial Hospital, Pune, Maharashtra, India *Corresponding author

**Dr. Gajanan Wagholikar** Senior consultant Department of Gastro-intestinal Surgery, Aditya Birla Memorial Hospital, Pune, Maharashtra, India

**Dr. Manish Shrivastava** Senior consultant Department of General Surgery, Aditya Birla Memorial Hospital, Pune, Maharashtra, India

**Dr. Abhishek Bansal** Resident Department of General Surgery, Aditya Birla Memorial Hospital, Pune, Maharashtra, India

**Dr. Aniruddha Garud** Consultant Department of Pathology, Aditya Birla Memorial Hospital, Pune, Maharashtra, India

## ABSTRACT

Actinomycosis is a rare chronic inflammatory disease caused by an anaerobic actinomyces species that can rarely affect the intestine. The infection has tendency to infiltrate adjacent tissue and rarely confined to a single organ. We report the rare case of ilio-colic junction actinomycosis in a 74 year old man mimicking clinically a malignant tumor of right colon. The patient presented with complaints of abdominal pain and lump in right iliac fossa for 1 month duration. Patient had no history of previous surgery CT abdomen suggestive of IC junction tumor. Patient underwent laparoscopic assisted right hemicolectomy. Histopathological examination revealed IC junction actinomycosis Preoperative diagnosis in colon actinomycosis is difficult to achieve..

## KEYWORDS

Abdominal pain and lump, Primary actinomycosis, Ileo-colic junction tumor, Antibiotic

## INTRODUCTION

Actinomyces infection is a chronic suppurative disease characterized by the formation of multiple abscesses, abundant granulation, dense fibrous tissue and draining sinuses characteristics sulfur granules composed of a matrix of calcium phosphate, colonies of actinomycetes, cellular debris and associated organism.

The Actinomyces species is a gram positive non spore forming anaerobic bacteria *Actinomyces israelii* is the most common species in humans. In the case of disease, over 50% of cases are orofacial or cervicofacial, with presentation in the abdomen being very rare (20% of all cases).

This organism is considered as opportunistic pathogen, as they are normally present in healthy individuals and requires the presence of many other bacteria, which destroy the over vascularized 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. There are no radiographic data, laboratory tests or specific endoscopic imaging of the disease and the isolation of the organism is also fairly difficult, meaning that final diagnosis is often based on postoperative histopathological examination

### Case Presentation

A 74 year old male visited to OPD with complaints of abdominal pain and lump in right iliac fossa, progressive anorexia and generalized weakness of 1 month duration. He had no history of previous surgery There was no history of major illness. On examination per abdomen mild distension and palpable mass presented in right iliac fossa. The lab tests are normal. A plain abdominal X-ray did not showed any significant changes He was evaluated by CT abdomen which showed thickening of base of cecum and ascending colon adherent to anterior abdominal wall and mild thickening of terminal ileum suggestive of neoplastic tumor. Mild collection noted in right iliac fossa with fat stranding (figure1). Colonoscopic examination not showed mucosal abnormalities

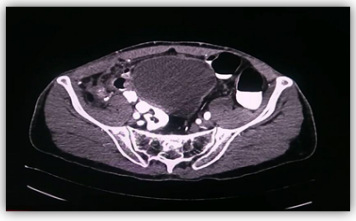
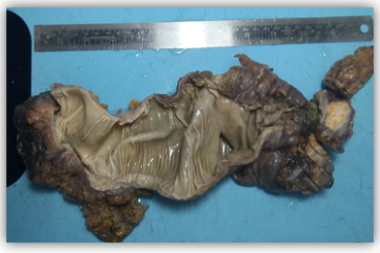


**Figure 1 CT scan showed tumor like mass, The characteristic of mass do not indicate actinomycosis**

Patient underwent laparoscopic assisted right hemicolectomy, There is large, firm, gritty ileo-caecal mass adherent to anterior abdominal wall. The macroscopic aspect of lesion strongly suggestive of neoplasm. Thus it was decided to perform an hemicolectomy with primary anastomosis.

Patient had uneventful post operative period The histopathological gross examination 4 x 4 x 3 cm size of mass seen in serosal aspect of IC junction(figure2), the cut surface was firm and gray white and shows yellowish area (Figure3). On microscopic examination showed dense chronic inflammatory infiltrate with multiple neutrophilic microabscesses and colonies of actinomyces are seen(Figure4). IV Ampicillin was given for 1 month and later on oral antibiotics for 6 month



This microscopic finding was confirmed by special stain like PAS

**Figure 2 Surgical specimen: IC junction mass (4x 4 x 3 cm)**

**Figure 3 Surgical specimen: The cut surface firm and gray white and showing yellowish area (sulfur granules)**

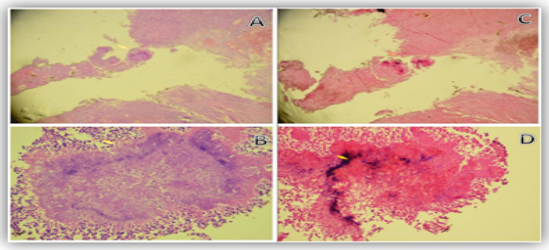



**Figure 4 Histology: Colony of actinomycosis (A) H & E scanner view (B) H&E 40X (C) Gram positive scanner view (D) Gram Positive 40X**

## Discussion

Actinomycosis is an indolent, progressive suppurative infection disease caused by Actinomyces species. Actinomyces are Gram-positive non-sporing, filamentous, anaerobic or microaerophilic bacteria. In human several Actinomyces (A.) species could be pathogenic: A. naeslundii, A. odontomlyticus, A. viscosus, A. meyeri, A. gerencseriae, A. bovis, but the most common one is A. israelii[1,2]. These bacteria normally colonize the oral cavity, upper gastrointestinal tract, and female urogenital tract. The incidence of the infection is 1:300000. These organisms are considered as opportunistic pathogens, and is more frequent in males, in midlife, in tropical world area[3,4]. Actinomycosis occurs most frequently in the cervical-facial (50-60%), thoracic (15-30%), abdominal (20%) regions, and central nervous system (2-3%)[2,5] The intra-abdominal actinomycosis presents often as abdominopelvic form.

This form usually occurs after the disruption of the intestinal integrity (commonly appendectomy, perforated bowel, diverticulitis, surgery to the gastrointestinal tract, endoscopic procedures, or trauma), but sometimes no cause is identified[2,6]. In light of the low-growing and the indolent nature of the infection, the diagnosis can occur after months, or years. The spread is typically around the connective and fascial tissues[2]. The mucosal invasion is rarely present and endoscopic procedures do not identify any alteration[1,3,5]. Usually lymph nodes are not involved in actinomycosis, and it does not spread into the peritoneal cavity[4]. The main issue related to actinomycosis is to the difficult diagnosis (only in the 17% of cases the diagnosis is preoperative)[2,7,8]. Clinical features and imaging reports often mimic malignant lesions, inflammatory diseases, tuberculosis, fungal infection, [1,2,5,7,9].

The most frequent presenting features, as in our case, are abdominal pain, abdominal lump and anorexia, The bacterium is usually unable to cross the mucosal barrier, except that in late stages, associated with tissue injury and disrupted mucosa[1,2,5]. Usually no tumor markers are positive, and only mild leukocytosis and fever can be present[5]. Frequently, the apparent aggressive nature showed by the CT scan may lead to suspect malignant pathology Commonly CT shows a solid mass with focal low-attenuation areas, and less frequently cystic mass with thickened wall [1]. About the histopathological point of view, the pathogens produce a characteristic granulomatous inflammatory response, with pus production and abscess formation, followed by necrosis and extensive, reactive fibrosis. When the diagnosis is suspected, confirmation can be obtained with FNA or core biopsy, performed with radiological guide or during surgical exploration[10].. In the literature was reported as common finding of actinomycosis the "*sulfur granules*", stain Gram-positive with a mycelium-like structure, can help a definitive diagnosis (positive at PAS and Grocott colorations). These granules however can be present also in case of nocardiosis, streptomycosis, chronomycosis, eumycetomam botrymycosis[1,2,5,9].

Actinomycosis treatment is based on high doses of antibiotics, such as penicillin for 6-12 months[12]. Actually the approach changes with the site of infection, the severity of disease and the patient's response to treatment. In any case, patients must be monitored to evaluate clinical and radiological progress until the resolution of the infection. Standard treatment is based on intravenous penicillin over 2-6 weeks, followed by oral penicillin for 6-12 months[12,13]. However literature show an increased rate of recurrence after antibiotic therapy without simultaneous surgical resection of the infected areas[1]. The role of surgery in actinomycosis is secondary to the antibiotics treatment. Indications for surgical treatment are: extensive necrotic tissue, large abscesses or empyema that cannot be drain, in case of compressive masses, to exclude a malignant pathology, or in patients that don't respond to medical treatment.

## Conclusions

Although actinomycosis is an infrequent entity, it should be included in the differential diagnosis of abdominal disease with inflammatory characteristic tumours, . Early diagnosis is important to avoid the morbidity associated with an extensive surgical resection. A high index of suspicion is to be entertained and image guided biopsy help in achieving a diagnosis. In majority of cases although diagnosed postoperatively on histopathological examination

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