

Curious Case of Actinomycotic Abdominal Wall Abscess

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ABSTRACT

Actinomycosis is a subacute-to-chronic bacterial infection caused by Actinomyces bacilli which is filamentous, gram-positive, non-acid-fast, anaerobic-to-microaerophilic bacteria. Abdominal actinomycosis can mimic intra-abdominal malignancies with presenting clinical features like chronic lower abdominal pain, weight loss, and palpable mass. Preoperative diagnosis based on radiological tests is challenging. This report discusses a case of 64 year old male, who presented to OPD with complaints of swelling over the right lower abdomen associated with pain since 1 month and fever since 3 days along with deranged blood sugars. Patient underwent incision and drainage of the abscess, but the wound of incision drainage continued to show pus discharge and was non-healing. CT scan suggestive of large diffuse ill-defined lobulated heterogeneously enhancing soft tissue in the supraumbilical anterior abdominal wall. Biopsy was taken which suggested Chronic pyogenic abscess with actinomycotic granules. The patient was started on Doxycycline and improved symptomatically. To conclude, abdominal actinomycosis is a rare condition but should be considered as a differential diagnosis when an unusual abdominal mass or abscess presents on abdominal CT. Debridement of necrotic tissue with surgical drainage of abscess and long-term antibiotic treatment provide a good prognosis in patients with abdominal actinomycosis.

Keywords: Abdominal Actinomycosis; Unusual Abdominal Mass

Introduction

Actinomycosis is a subacute-to-chronic bacterial infection. It is caused by filamentous, gram-positive, non-acid-fast, anaerobic-to-microaerophilic bacteria. It is characterized by contiguous spread, suppurative and granulomatous inflammation, and formation of multiple abscesses and sinus tracts that may discharge sulfur granules. The most common clinical forms of actinomycosis are cervicofacial (ie, lumpy jaw), thoracic, and abdominal. It presents with weight loss, malaise, change in bowel habits, anorexia, abdominal pain and palpable abdominal mass, which might lead altogether to a misdiagnosis of neoplasia [1]. Its mimicking features of tumors make it challenging to come up with a preoperative diagnosis based on radiological tests. Thus, microbiological culture is a gold standard diagnostic test. However, positive results are quite rare, this leads to a greater challenge in coming up with an accurate diagnosis [2].

Histopathological examination of biopsy remains applicable in clinical practice whenever it is needed to differentiate between neoplasm and actinomycosis, even in cases of negative results obtained by microbiological culture. Pathological features include classical sulfur granule arrangement with extensive fibrosis and granulomatous tissue formation [3]. Actinomyces extends directly across the tissue, leading to formation of multiple abscesses, abundant granulation tissue, and sinuses [4].

Case Report

A 64-year-old male, known case of Diabetes mellitus and hypertension, presented to OPD with complaints of swelling over the right lower abdomen and pain since 1 month; fever since 3 days and deranged blood sugars. The swelling was insidious onset and started as a small lesion which progressed in size slowly. The swelling is associated with redness and pain. Patient started having fever, which

was intermittent low-grade fever, not associated with shivering since 3 days. Patient has no history of any trauma or any abdominal surgery. Clinically, a swelling measuring 9 cm x 7 cm was noted in the abdominal wall (swelling gets more prominent on leg raise) firm in consistency with fluctuation positive. Signs of inflammation were present. Incision and drainage of the abscess was done. Pus was sent for culture and sensitivity. Patient was on daily dressing and oral antibiotics. The wound of incision drainage continued to show pus discharge and was non-healing (Figure 1). A CT scan abdomen was done to find out the cause of continued pus discharge. CT scan was suggestive of large diffuse ill-defined lobulated heterogeneously enhancing soft tissue in the supraumbilical anterior abdominal

wall around the midline on right side measuring 10cm x 6.8 cm x 7.6cm involving the rectus abdominis muscle flushed with overlying skin with surrounding subcutaneous fat stranding. The soft tissue shows intrabdominal extension, no communication with any bowel identified (Figure 2). The patient was then posted for biopsy to know the cause of such swelling with debridement. HPE of the biopsy was suggestive of Chronic pyogenic abscess with actinomycotic granules. The patient was given IV Monocef 1gm BD for 1 month as per the culture sensitivity report followed by long term antibiotic treatment with Doxycycline for 5 months. The pus discharge started to decrease and wound started healing up (Figure 3).



Figure: 1.

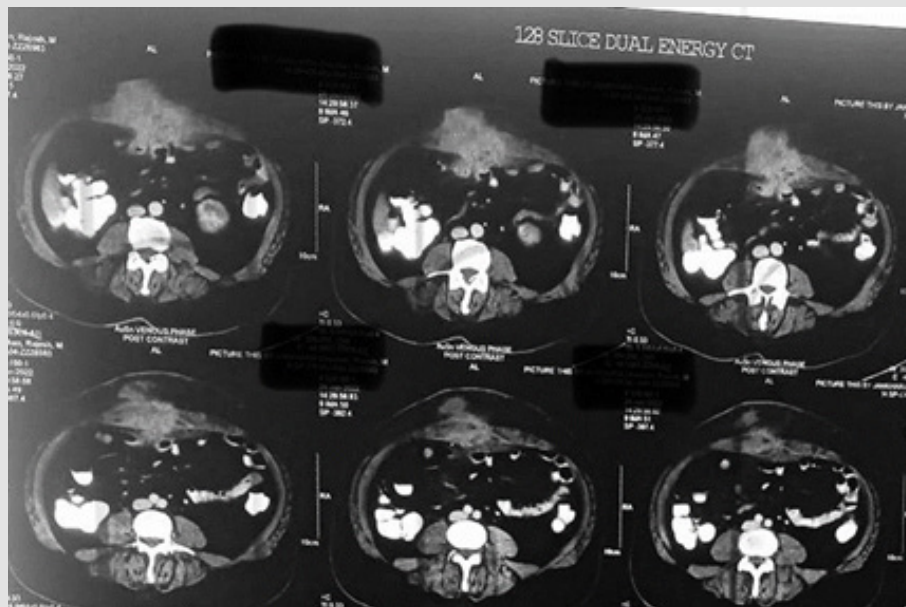


Figure: 2.

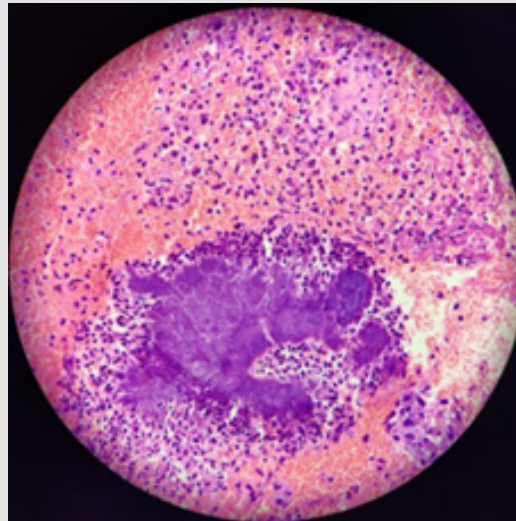


Figure: 3.

Discussion

The most common etiologic organism of actinomycosis *Actinomyces israelii*. The incidence of *Actinomyces* is 1:300000. [13] It exists in the normal flora of the oral cavity, throughout the gastrointestinal tract and the female genital tract [5]. Also, it is commonly cultured from carious teeth and tonsillar crypts [6,7]. This infection usually spreads locally in an indolent manner, and it may take months to years before any symptoms manifest [8]. The organism is unable to cross normal mucosal barriers and, therefore, opportunistic infections can occur only in the context of underlying local disease. The destruction of the mucosal barrier by trauma, operations, immunosuppression, a foreign body that penetrates the barrier, or a history of perforated viscera are recognized as predisposing factors. Acute perforated appendicitis is usually one of the most common predisposing events [9]. Other predisposing factors may include diverticulitis and gastrointestinal perforations [10]. But in certain cases the cause remains unknown like in this case. Overall incidence of actinomycosis has been decreasing; though pelvic and abdominal actinomycosis has recently become more prevalent and is associated almost exclusively with women who use an IUD, as it increases the risk of infection through injury to the normal uterine mucosa [7,11]. Abdominal actinomycosis accounts for 20% of actinomycosis infection [12,13].

In this case we suspected it to be tubercular abscess or Enterocutaneous fistula for which CT was done after 2 weeks of incision and drainage as the wound was non healing with continuous seropurulent discharge. Radiological techniques are inadequate for the diagnosis of abdominal actinomycosis, except for CT, which shows the site and content of the lesions and also their relation to adjacent

tissues [14,15]. CT can be used as a visualizing method, but it cannot be used as a conclusive diagnostic tool for abdominal actinomycosis. CT appearance of actinomycosis more frequently resembles the solid mass with focal low-attenuation areas rather than the cystic form [16]. Hence one of the important challenges with actinomycosis infection is delayed diagnosis like it was in this case. The definitive diagnosis of actinomycosis requires microscopic proof which we got in this case. The presence of sulfur granules, as well as multiple Gram-positive branching hyphae, during pathological examination is important in diagnosing this infection [14,15]. Surgery is valuable as a definitive diagnosis and also as a therapeutic adjunct because it enables the removal of necrotic tissue and persistent sinuses [15] Assertive removal of necrotic tissue with surgical drainage is enough to potentiate the antibiotic effect, thereby shortening the duration of antibiotic use.

Conclusion

To conclude, abdominal actinomycosis is a rare condition but should be considered as a differential diagnosis when an unusual abdominal mass or abscess presents on abdominal CT. Debridement of necrotic tissue with surgical drainage of abscess and long-term antibiotic treatment provide a good prognosis in patients with abdominal actinomycosis.

Lessons Learnt

This case highlights the importance of prompt recognition and subsequent management of *Actinomyces* of the abdominal which has an etiology of malignancy-like symptoms. High index of suspicion is needed to avoid delay in diagnosis of this condition.

Conflicts of Interest

None.

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