Omental Actinomycosis with Abdominal Wall Invasion Mimicking a Desmoid Tumour - A Case Report from a Tertiary Care Centre

Kumar A, Simkhada G, Gupta RK, Agrawal CS

Department of Surgery, BPKIHS, Dharan, Nepal

Abstract

Actinomycosis is a chronic, suppurative and fibrosing infectious disease caused by Actinomycetes species, most common being Actinomyces israelii. Being commensal, these organisms cause diseases rarely and only when there is disruption of mucosa. Three clinical types of involvement by the disease have been recognized including cervicofacial, thoracic and abdominal actinomycosis.

We herein report a rare case of primary omental actinomycosis with abdominal wall invasion in a 52 year-diabetic female in whom desmoid tumour was suspected before surgery. The patient presented to us with a slowly progressing lump in right lower abdominal wall for 2 months, occasionally associated with mild dull aching pain. She had undergone appendectomy 7 years back. Examination revealed a globular parietal wall lump of size 5cm x 4cm with variable consistency-firm to cystic with smooth surface. Abdominal computed tomography (CT-scan) showed a homogenous tumour like growth in right lower abdominal wall and was reported likely to be desmoid tumor.

Wide local excision was planned under spinal anaesthesia. Intraoperatively the tumour was found to be arising from greater omentum with infiltration to whole of adjacent abdominal wall. Around 50% of the greater omentum along with involved parietal wall was excised and defect was closed with suture. However, Actinomycosis was the final pathological diagnosis. The patient was prescribed a penicillin-series oral antibiotic to prevent recurrence of the actinomycosis. The patient has no recurrence of actinomycosis till date after discharge.

Omental actinomycosis with abdominal wall invasion can be considered as a differential diagnosis of soft tissue tumour of abdominal wall and this case report is an example.

Keywords

Actinomycosis; Greater Omentum; Desmoid Tumor

Introduction

Abdominal actinomycosis is very rare, chronic suppurative infectious disease that is caused by Actinomycetes organisms, which are gram-positive, anaerobic bacteria [1]. The most common type causing disease in humans is Actinomyces israelii. This organism is a commensal of the human mouth and has low virulence. It causes disease only when the mucosal barrier has been breached2.

When it does cause disease, however, three main clinical types of involvement are recognized including cervico-facial, thoracic and abdominal actinomycosis. Because the clinical presentation is so variable, an accurate diagnosis is not often established pre-operatively in a significant number of cases [2].

We report a case of omental actinomycosis presenting as an inflammatory abdominal mass with involvement of the abdominal wall mimicking as desmoid tumour of the abdominal wall.

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*Corresponding author: Kumar A, Department of Surgery, BPKIHS, Dharan, Nepal. E-mail: abhijeetkr639@gmail.com; Tel: +977-9842586920/9819320919

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Case Description

A 52 year diabetic female visited to us on 18th December 2017 with a slowly progressing lump in right lower abdominal wall for 2 months. She had occasionally mild dull aching pain over the lump. She had undergone appendectomy 7 years back. There was no history of constitutional symptoms or of a change in bowel habit. General physical examination revealed that he was afebrile with normal vital signs. Abdominal examination revealed a globular, slightly tender, infraumbilical parietal wall lump of size 5cm x 4cm and variable consistency (predominantly firm) in right lower abdomen. Digital rectal examination was normal.

Abdominal contrast enhanced computed tomography (CT-scan) showed a homogenous tumour like growth in right lower abdominal wall and was reported likely to be desmoid tumor (Figure 1). An abdominal ultrasound also identified the abdominal wall mass.

Figure 1: CT Scan, Axial Image. A Circumscribed Predominantly Homogenous Mass (Arrow) Arising from Abdominal Wall Musculature

Wide local excision with adequate margin was planned under spinal anaesthesia. Elliptical incision was made and was deepened all around. The lump was found to infiltrate whole of the abdominal wall and parietal peritoneum of front of the abdominal wall. So, peritoneal cavity was entered and abdominal exploration was done. This revealed a firm mass arising from part of the greater omentum with infiltration to whole of adjacent abdominal wall (Figure 2).

Around 50% of the greater omentum along with involved parietal wall was excised. The cut surface of the removed specimen was grey-white to gray-brown with patchy areas of microabscess formation. So the defect was closed with suture (PDS) in layers.

Histological examination revealed fibrocollagenous, fibroadipose and muscular tissue with areas of neutrophil aggregates forming abscess, scattered foreign body type giant cells, multiple foci of loculated cotton ball like basophilic bodies with eosinophilic clubs at the periphery (Figure 3). Actinomycosis was the final pathological diagnosis.

Figure 3: Histological Section Showing Areas of Microabscess with Scattered Foreign Body Type Giant Cells, Multiple Foci of Loculated Cotton Ball like Basophilic Bodies with Eosinophilic Clubs at the Periphery

The post-operative recovery was uneventful and was given injectable penicillin for 2 weeks. The patient was prescribed a penicillin-series oral antibiotic for 2 months at the time of discharge to prevent recurrence of the actinomycosis. The patient has no recurrence of actinomycosis till date after discharge.

Review of Literature

Actinomycosis is a rare, chronic, suppurative and infectious disease caused by the gram-positive...
microaerophilic and anaerobic Actinomyces species, Actinomyces israelii being the commonest one. The organism was originally classified as a fungus because of its filamentous appearance and indolent growth that mimicked mycotic disease. However, the absence of a nuclear membrane or chitin in the cell membrane and reproduction by fission are among the characteristics that led to its reclassification as a bacterium and not a fungus [3].

Actinomyces israelii is a normal commensal among the gut flora of caecum, thus abdominal actinomycosis can occur following the removal of the appendix [4]. Disease occurs following a disruption in the mucosal barrier. In 1846, Bradshaw published the first description of a patient with abdominal actinomycosis. Abdominal actinomycosis tends to be a disease of insidious onset and vague symptoms. Recognized causal associations include a history of appendicitis, diverticulitis, inflammatory bowel disease, intrauterine contraceptive device use and previous bowel surgery [5].

The diagnosis is seldom made preoperatively due to its relative infrequency and the lack of reliable or consistent clinical manifestation. The diagnosis is usually made during exploratory laparotomy by staining and culture of the organism or by histological findings in the resected specimen [6]. When actinomycosis is suspected, computed tomography guided aspiration with or without core biopsy of the suspicious lesion is useful [7].

Treatment consists of surgical resection of the infected lesion and long term antibiotic therapy. Typical treatment includes intravenous administration of 18-244 million units of penicillin for 2 to 6 weeks, followed by oral therapy with penicillin or amoxicillin for 6 to 12 months. Where penicillin allergy exists, treatment with tetracycline, clindamycin, or doxycycline has been reported [8].

Conclusion

A middle aged female with past history of lower abdominal surgery with a slowly progressing infraumbilical abdominal wall lump with radiological features suggestive of desmoid tumour turned out to have omental actinomycosis with adjacent abdominal wall invasion histologically. So omental actinomycosis with abdominal wall invasion can masquerade as a soft tissue tumour of abdominal wall. In the majority of cases, the diagnosis is not suspected preoperatively as was the case in this particular patient.

Ethical Approval

Patient’s information has been de-identified to the best of our ability to protect his privacy.

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