

Case Report

Interesting case discussion of a lesion over the right abdominal wall

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Received: 05 January 2019

Accepted: 23 January 2019

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ABSTRACT

A diagnosis of hepatic actinomycosis is challenging and often overlooked because of its indiscernible nature and slow rate of progression. This is further complicated with absence of any specific clinical and radiologic manifestations. In this case, a 49 years old male, farmer, with no co-morbidities or significant past medical or surgical history, reported to the department of surgery, with complains of non-healing ulcer over right upper abdomen since five months. Examination of the ulcer led to a clinical suspicion of a malignant lesion. Sonogram of abdomen and pelvic region, which revealed heterogenous lesion with central necrosis in the right lumbar region of the abdominal wall with extension into the skin surface, a heterogenous lesion noted on the liver, and right pleural effusion with the suggestion to consider the possibility of primary skin/abdominal wall tumor with hepatic metastasis with right pleural effusion. Further investigation was performed using contrast enhanced CT scan which also favoured the diagnosis of a malignancy. However, biopsy of the skin lesion was negative for malignancy and it confirmed the diagnosis of Actinomycosis. This diagnosis was further confirmed with an ultrasound guided biopsy of the liver lesion. The patient was then started on appropriate treatment for the same and he recovered well.

Keywords: Actinomycosis, Diagnosis, Liver, Therapeutics

INTRODUCTION

Actinomyces are slow growing, non-spore forming, gram-positive, branching bacilli that thrive in anaerobic and microaerophilic conditions. It is normal flora of the oropharynx, gastrointestinal tract, and female genital tract which when inoculated due to mucosal disruption leads to formation of mycetoma. Mycetoma is a chronic suppurative and granulomatous disease usually caused by *Actinomyces israelii* and is termed as Actinomycosis.¹

Most commonly manifesting as the cervicofacial abscess, actinomycotic abscesses have been reported in thoracic, pelvic, CNS and abdominal regions also. Hepatic actinomycosis specifically, is found usually secondary to other intraabdominal infections, and primary hepatic actinomycosis only accounts for 5% of all actinomycosis cases.²

A diagnosis of hepatic actinomycosis is challenging and often overlooked because of its indiscernible nature and slow rate of progression. This is further complicated with absence of any specific clinical and radiologic manifestations.³

In this case report, a case of hepatic actinomycosis (HA) occurring in a 49-year-old male with no predisposing factors. Authors here report this case along with a review of relevant literature and diagnostic paradigm that was observed.

CASE REPORT

A 49 years old male patient, farmer by occupation reported to the department of surgery, with complains of non-healing ulcer over right upper abdomen for five months. Patient was apparently normal 5 months back

following which he developed a mild bleb over right upper abdomen, which burst open over a period of time and developed an ulcer, which gradually progressed to attain the present size. He also has a history of serous discharge around 2 to 3ml per day, not foul smelling and no associated bleeding. Associated history of on and off fever with no chills and rigors for which symptomatic relief was achieved using locally prescribed ayurvedic treatment. Similar complain of irregular but periodic pain and tenderness associated with the ulcer site has been reported, which reduces with medication.

However, no history of trauma, itching and burning sensation, jaundice, cough, hemoptysis, breathlessness, loss of weight, loss of appetite, rash or any other lesion anywhere in the body. Patient reported a normal bowel and bladder habit.

Patient has no significant past medical history with no reported serious illness or history of hospital admission or previous surgeries. He reports the use of ayurvedic medicinal therapy for the presenting illness in past four to five months. Physical examination revealed a middle aged male who did not appear to be in any acute distress. Vital signs: temperature 99.6°F, pulse 70/bpm, respirations 22/min, blood pressure 130/80 mm/Hg. On local abdominal exam, inspection revealed 4*4cm lesion over the right lumbar region posterior to the anterior axillary line 8cm above from right iliac crest. The lesion was irregular in shape with well-defined margin, floor covered with slough and discharge, with everted edges and white color pus discharge was present and the surrounding skin was hyperpigmented (Figure 1).

On palpation, ulcerated lesion showed marked tenderness, with indurated base and fixed to underlying structure. There was bleeding on palpation and foul smelling purulent discharge present. Tenderness present over right hypochondrium in mid clavicular and anterior axillary line and right lumbar region was observed. No palpable organomegaly, guarding or rebound with normoactive bowel sounds. The rest of the exam was unremarkable. Laboratory studies demonstrated a total WBC count 18000 and ESR of 56 with normal liver function test (LFT).



Figure 1: Clinical appearance of lesion over the right anterior abdominal wall.

Investigation and diagnostic process

Based on history and clinical examination, differential diagnosis of tuberculosis, squamous cell carcinoma, malignant melanoma was shortlisted and investigation via sonogram was advised for abdomen and pelvic region, which revealed heterogenous lesion with central necrosis in the right lumbar region of the abdominal wall with extension into the skin surface, a heterogenous lesion noted on the liver, and right pleural effusion with the suggestion to consider the possibility of primary skin/abdominal wall tumor with hepatic metastasis with right pleural effusion. Further investigations in the form of edge biopsy for histopathological analysis was obtained and a simultaneous CECT imaging for abdomen and pelvic region was conducted.

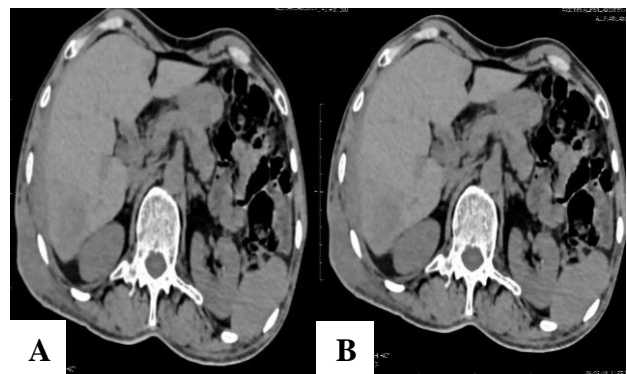


Figure 2 (A) and (B): CT scan images showing the lesion and nodules in the liver.

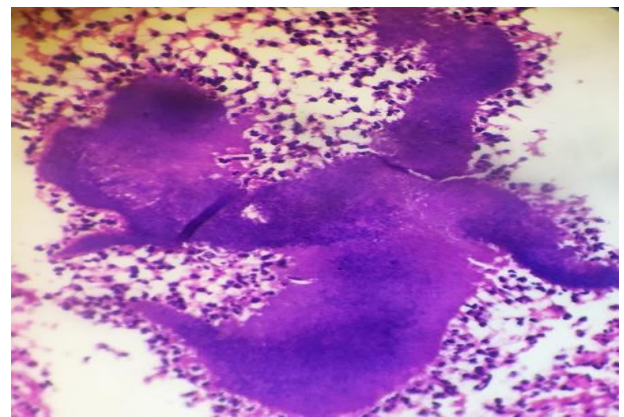


Figure 3: Histopathological picture of skin biopsy specimen showing Splendore-Hoeppli phenomenon, suggestive of actinomycosis.

The results of the scan revealed a non-homogenously enhancing nodular lesion arising from the skin, extending to subcutaneous plane of the anterior abdominal wall on right side infiltrating into the abdominal muscles and the right lobe of liver. A similar enhancing nodular lesion in diaphragm with intrathoracic and intraabdominal extension infiltrating the segment VIII of right lobe of liver, suggestive of the possibility of melanoma with metastasis (Figure 2(A) and 2(B)).

However, the skin histopathology report stood in contradiction to the imaging, reporting actinomyces colonies surrounded by neutrophilic abscess in a Splendore-Hoeppli phenomenon (Figure 3).^{4,5}

This was suggestive of mycetoma with no sign of malignant changes.

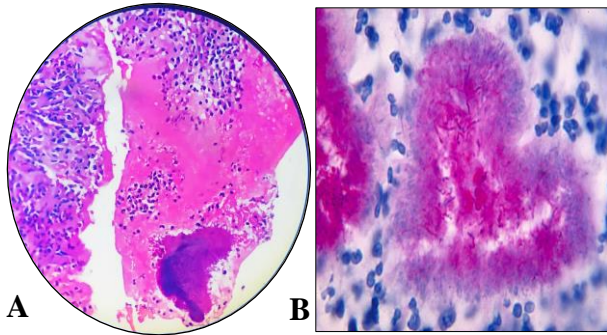


Figure 4: Histopathological picture of the USG guided liver biopsy, (A): 40x (left), (B): 100X (right), confirming hepatic actinomycosis (HA).

Therefore, for definitive diagnosis, a USG guided biopsy done from deeper component of liver lesion obtaining a gross specimen of 10 linear cores grey white to grey brown ranging in size from 0.2 -2cm.

The histopathology report from the deeper section showed active inflammatory tissue changes, with bacterial colony surrounded by fibrinopurulent exudate and gram positive bacteria. The final impression was Hepatic Actinomycosis (HA) (Figure 4).

Treatment:

Mainstay treatment of actinomycosis is medical line of treatment. Modified two step regimen-that consist of gentamycin 80mg iv 12th hourly and cotrimoxazole 320/1600mg bd for 4 weeks followed by a maintenance phase of co-trimoxazole and doxycycline 100mg bd to be continued for 6 months with proper follow up. The patient recovered well and is on follow up (Figure 5).



Figure 5: Clinical picture of the abdominal wall lesion, one week after starting treatment.

DISCUSSION

Actinomyces is a rare cause of intra-abdominal infections. The etiology in the majority of cases involving the liver, are thought to arise directly or hematogenically from an intra-abdominal focus. There are 13 different species of actinomycosis; 6 of which are associated with human disease (*Israelii*, *naeslundii*, *Bovis*, *Odontolyticus*, *viscosus* and *Arachnia propionica*). By far the most common human pathogen encountered is *Actinomyces Israelii*, giving rise to chronic suppurative infections.^{2,3}

Risk factors include previous abdominal/pelvic surgery, abdominal wall trauma, gastrointestinal foreign body, gastrointestinal tract lesions and immunosuppression.⁶ Although the cause in most cases is unknown, the abscess can appear after any disruption in mucosal integrity.⁶ Due to the cryptogenic nature of the disease, it takes several weeks to months of symptoms to make the diagnosis with a range of 4 days to 18 months until presentation.⁷ The most common symptoms are nonspecific, including fever abdominal pain and weight loss.⁸ Laboratory examination often demonstrates a leukocytosis as seen in our patient.^{6,9}

Because imaging studies frequently reveal single or multiple lesions, actinomycosis is often misdiagnosed as a primary or metastatic tumor. The most frequent radiographical finding is a single hypodense mass/abscess (68.4%).¹⁰ CT often demonstrates multiloculated spaces occupying hypoattenuated lesions making a differential diagnosis of, amoebiasis, multiple pyogenic abscess and cystic neoplasm.¹¹ Similar to the presenting case where both imaging modalities gave impression of underlying neoplastic changes.

Hence the definitive diagnosis is based on histochemical, macroscopic, and microscopic examination of surgical tissue specimens, which reveal yellow sulfur granules and basophilic filament aggregates respectively.⁶ Cultures can be positive and would prove to be ideal, but take up to 2 weeks to grow, secondary to low concentration and the propensity to grow slowly. Complicating culture interpretation is that specimens are commonly mixed with other organisms.⁶ Both the edge biopsy and the USG guided biopsy of deep liver tissue gave similar presentation of the lesion with gram positive bacteria confirming the final diagnosis as HA.

The treatment modalities are both medical antimicrobial management and surgical excision, however, literature review suggests more than 60 percent of the cases managed well with medication. However, the dosage and the duration varies as per the severity of illness.

The recalcitrant or recurrent lesions if found are addressed by surgical intervention, also emphasizing the need for follow up examinations with imaging studies such as ultrasound or CT to aid with duration of therapy.

CONCLUSION

HA is a rare and often overlooked etiology for a liver mass due to its nonspecific presentation and nondescript symptomatology. A clinician should be aware of this differential and the potential pitfalls in diagnosis and management.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: Not required

REFERENCES

1. Wong JJ, Kinney TB, Miller FJ, Rivera-Sanfeliz G. Hepatic actinomycotic abscesses: diagnosis and management. *Am J Roentgenol.* 2006 Jan;186(1):174-6.
2. Shah HR, Williamson MR, Boyd CM, Balachandran S, Angtuaco TL, McConnell JR. CT findings in abdominal actinomycosis. *J Computer Assisted Tomography.* 1987;11(3):466-9.
3. Ha YJ, An JH, Shim JH, Yu ES, Kim JJ, Ha TY, et al. A case of primary hepatic actinomycosis: an enigmatic inflammatory lesion of the liver. *Clin Molecular Hepatol.* 2015 Mar;21(1):80.
4. Gopinath D. Splendore–Hoeppli phenomenon. *J Oral Maxillofacial Pathol.* 2018 May;22(2):161.
5. Hussein MR. Mucocutaneous Splendore-Hoeppli phenomenon. *J Cutaneous Pathol.* 2008 Nov;35(11):979-88
6. Christodoulou N, Papadakis I, Velegrakis M: Actinomycotic liver abscess. Case report and review of the literature. *Chir Ital.* 2004;56(1):141-6.
7. Lai AT, Lam CM, Ng KK, Yeung C, Ho WL, Poon LT, et al. Hepatic actinomycosis presenting as a liver tumour: case report and literature review. *Asian J Surg.* 2004 Oct 1;27(4):345-7.
8. Islam T, Athar MN, Athar MK, Usman MH, Misbah B. Hepatic actinomycosis with infiltration of the diaphragm and right lung: a case report. *Canadian Resp J.* 2005;12(6):336-7.
9. Sharma M, Briski LE, Khatib R. Hepatic actinomycosis: an overview of salient features and outcome of therapy. *Scand J Infectious Dis.* 2002 Jan 1;34(5):386-91.
10. Felekouras E, Menenakos C, Griniatsos J, Deladetsima I, Kalaxanis N, Nikiteas N, et al. Liver resection in cases of isolated hepatic actinomycosis: case report and review of the literature. *Scand J Infectious Dis.* 2004 Jul 1;36(6-7):535-8.
11. Chen LW, Chang LC, Shie SS, Chien RN. Solitary actinomycotic abscesses of liver: report of two cases. *Int J Clin Pract.* 2006 Jan;60(1):104-7.

Cite this article as: Peter AI, Patra S, Jaffar S. Interesting case discussion of a lesion over the right abdominal wall. *Int Surg J* 2019;6:636-9.