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Case Report

An Unusual site of Cold Abscess; the Sternum: a Rare Case Report

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Abstract: Primary mycobacterial infection of the sternum is extremely uncommon. We present a case of cold abscess of sternum successfully treated with four drug antituberculous therapy. Tuberculous sternal osteomyelitis is rare entity and one should suspect tuberculosis in a case of chronic abscess over the sternum.
Keywords: Sternum; Tuberculosis; cold abscess

INTRODUCTION

Sternal cold abscess is exceedingly rare conditions. Fewer than 35 cases of sternal tuberculosis were found in the world English literature. We report a case of sternal tuberculosis with cold abscess.

CASE REPORT

A 42-year-old man presented with two months history of pain and swelling over the sternum. The pain started insidiously, and gradually increased with time. The pain was dull and aching. The pain was non-radiating and patient reported no pain elsewhere, the pain was relieved by anti inflammatory medications and was aggravated by physical activity. The patient noticed a progressively increasing swelling at the site of pain over the sternum (Fig. 1). There was associated history of fever, weight loss, loss of appetite, night sweats, malaise and fatigue. There was no history of trauma. The patient had no history of previous illness, injuries or surgery. He gave history of moderate alcoholism for last 10 years. There was no history of cough or dyspnoea. The patients belonged to poor socio-economic family. On physical examination, the patient was ill. There was a swelling 6.0x4.0cms over the sternum with over lying skin normal (Fig. 2). The swelling was tender and fluctuation was positive.

However there was no tenderness over spine and para spinal muscles in the thoracic region. The range of motion of spine was within normal limits. There was no lymphadenopathy. The abdomen was soft and non tender with no organomegaly. Other systems were normal. Laboratory findings revealed elevated erythrocyte sedimentation rate (ESR) of 50 mm (Westergren method) after one hour. A mantoux tuberculin skin test was positive with 25 mm of induration observed 48 hours after administration. A plain chest radiograph posterior-anterior and lateral views, showed no lung infiltration, pleural effusion, enlargement of hilar lymph nodes and any bone involvement. A fine needle aspiration (Fig. 3) showed caseous necrotic pus. On cytology of pus showed epithelioid cells and Langhan's giant cells. Further investigation like CT scan and MRI could not be done due to financial constrains.

The patient received two months of anti-tubercular drugs, consisting of four drugs (isoniazid [INH], pyrazinamide, ethambutol, and rifampicin). He was given two drugs (INH and rifampicin) for 12 months. The swelling subsided (Fig. 4) after two months of treatment and he is asymptomatic for last one year after completion of treatment.

Fig. 1: Showing pre-sternal cold abscess

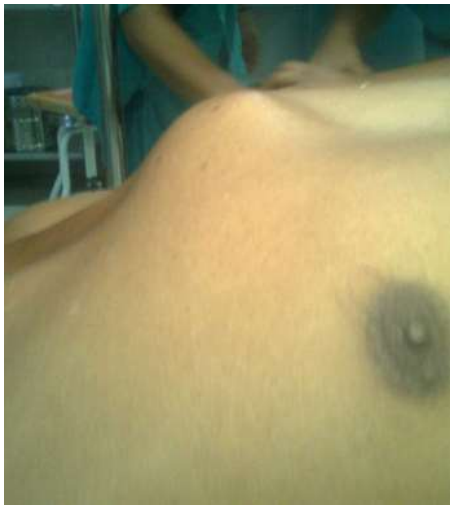

Fig. 2: Close-up view of pre-sternal cold abscess

Fig. 3: Aspiration of cold abscess

Fig. 4 Showing healed cold abscess

DISCUSSION

The sternum as the site of infection is infrequently encountered and tuberculous sternal osteomyelitis is even rarer. Kelly and Chetty reviewed the world literature till 1985 and found only 6 cases of sternal tuberculosis [1]. Tuberculosis of bones and joints accounts for 1–3% of patients with tuberculosis and isolated sternum tuberculosis representing less than 1% tubercular osteomyelites [2, 3]. Less than thirty five cases have been reported so far in the world literature [4-10]. In a large series from india, by Tuli and Sinha, out of 980 cases of osteoarticular tuberculosis, 14 (1.5%) were found to be due to tuberculosis of the sternum [11]. In a review of 417 tuberculosis (TB) patients, Davies et al reported only two cases of sternal tuberculosis [12]. Since 1985, sternal TB has been reported in association with spontaneous fracture of sternum, disseminated tuberculosis, diabetes mellitus and post coronary by pass surgery. Atypical mycobacteria are known to cause post operative infection [13, 14]. Sternal osteomyelitis of tuberculous origin is generally caused by reactivation of latent foci of primary tuberculosis formed during hematogenous or lymphatic dissemination, in contrast to pyogenic osteomyelitis. Direct extension from contiguous mediastinal lymph nodes has also been described [2]. The known risk factors for tuberculosis are underlying debilitating disorders, corticosteroid therapy, malnutrition, low socio-economic status, and ethanol abuse, history of exposure to tuberculosis, HIV infection and immunocompromised states [11]. Similarly our patient also belonged to low socio-economic class with history of alcoholisn. Sternal TB presents insidiously predominantly with pain and swelling. Concomitant extrasternal tuberculosis has been reported in 8 out of 20 cases reviewed by Mclellan *et al.* [15]. Sternal TB has been predominantly described in adult patients as in our case however there are few paediatric cases in record. Sternal tuberculosis has also been reported after BCG vaccination in paediatric age group. Kato et al and corrales et al reported sternal TB in 9 month and 13 month old child respectively [16, 17]. Imaging technique plays an important role in diagnosis and follows up. According to Tuli and Sinha]11], radiological signs occur much later than the presenting clinical features, and abscesses or sinuses are present much before the focus is detected radiologically, similarly in the index patient chest radiograph did not reveal any lesion. The Computed tomography (CT) scan is more sensitive for anatomical localization and in detecting osseous destruction and soft tissue abnormalities. Khalil *et al.* reviewed the utility of CT scan findings for the diagnosis of chest wall TB and described characteristic ring enhancing hypodense soft tissue lesion [18]. Atasoy *et al.* [19] suggested the role of magnetic resonance imaging (MRI) for detecting early marrow and soft tissue involvement due to high contrast resolution of MRI [19]. However early diagnosis is established with microbiologic and histopathologic examination. In the present case, biopsy was useful to confirm the presence of TB or exclude other conditions such as pyogenic infections and malignancy. Possible complications of

sternal tuberculous osteomyelitis include secondary infection, fistula formation, spontaneous fractures of the sternum, compression or erosion of the large blood vessels, compression of the trachea and migration of tuberculous abscess into the mediastinum, pleural cavity or subcutaneous tissues [20], but our patient presented with cold abscess over the sternum. Treatment is based on long duration antituberculous multidrug therapy, however some authors believe that surgical treatment is necessary to prevent recurrence. Sarlak *et al.* [21] treated a case of primary sternal TB with resection and rotational flap. Hajjar *et al.* [22] did resection and reconstruction of primary sternal TB in an 81 year old man. Recently Ford *et al.* [23] described successful management of tuberculous osteomylitis of sternum with debridment and vacuum assisted closure. In our case we treated the patient successfully with aspiration of abscess and multidrug therapy. Patient is doing well after one year post antituberculous therapy.

REFERENCES

1. Kelly CA, Chetty MN; Primary sternal osteomyelitis. Thorax 1985;40(11):872-873.
2. Sharma S, Juneja M, Garg A. Primary tubercular osteomyelitis of the sternum. Indian J Pediatr 2005;72(8):709-710.
3. Boh JA, Janner D; Mycobacterium tuberculosis sternal osteomyelitis presenting as anterior chest wall mass. Pediatr infect Dis J 1999;18:1028-1029.
4. Watts HG, Angrles L, Lifesto RM.Current concepts review: tuberculosis of bones and joints. J Bone Joint Surg Am 1996; 78:288–298.
5. Wang TK, Wong CF, Au WK, Cheng VC, Wong SS. Mycobacterium tuberculosis sternal wound infection after open heart surgery: a case report and review of the literature. Diagn Microbiol Infect Dis 2007:12; [Epub ahead of print]
6. Gopal K, Raj A, Rajesh MR, Prabhu SK, Geothe J. Sternal tuberculosis after sternotomy for coronary artery bypass surgery: a case report and review of the literature. J Thorac Cardiovasc Surg 2007;133(5):1365-1366.
7. Ekingen G, Guvenc BH, Kahraman H.Multifocal tuberculosis of the chest wall without pulmonary involvement. Acta Chir Belg 2006;106(1):124-126.
8. Zhao X, Chen S, Deanda A Jr, Kiev J.A rare presentation of tuberculosis. Am Surg 2006;72(1):96-97.
9. Bandyopadhyay SK, Moulick A, Ghosal J, Dutta A. Pre sternal cold abscess. J Assoc Physicians India 2005;53:866.
10. Rivas P, Gorgolas M, Gimena B, Sousa J, Fernandez-Guerrero ML. Sternal tuberculosis after open heart surgery. Scand J Infect Dis 2005;37(5):373-374.
11. Tuli SM, Sinha GP. Skeletal tuberculosis "Unusual" lesions. Indian Journal of Orthopaedics, 1969; 3:5-18.
12. Davies PD, Humphries MJ, Byfield SP, Nunn AJ, Darbyshire JH, Citron KM et al. Bone and joint tuberculosis. A survey of notifications in England and Wales. J Bone Joint Surg Br 1984 66-B: 326-330.
13. Samuels LE, Sharma S, Morris RJ, Solomon MP, Granick MS, WoodCA et al. Mycobacterium fortuitum infection of the sternum-Review of the literature and case illustration. Arch Surg 1996;131:1344-1346.
14. Karnak I, Akcoren Z, Gogus S, Caglar M, Tanyel FC. Granulomatous osteomyelitis of the sternum presenting with a parasternal mass: a possible relation to the bacillus Calmette-Guerin vaccine. J Pediatr Surg 1999;34(10):1534-1536.
15. McLellan DG, Philips KB, Corbett CE, Bronze MS. Sternal osteomyelitis caused by mycobacterium tuberculosis: case report and review of the literature. Am J Med Sci 2000; 319(4):250-254.
16. Kato Y, Horikawa Y, Nishimura Y, Shimoda H, Shigeto E, Ueda K. Sternal tuberculosis in a 9-month-old infant after BCG vaccination. Acta Paediatr 2000;89(12):1495-1497.
17. Corrales IF, Cortes JA, Mesa ML, Zamora G. Sternal osteomyelitis and scrofuloderma due to BCG vaccination. Biomedic 2003;23(2):202-207.
18. Khalil A, Le Breton C, Tassart M, Korzec J, Bigot J, Carette M; Utility of CT scan for the diagnosis of chest wall tuberculosis. Eur Radiol 1999;9(8):1638-1642.
19. Atasoy C, Oztekin PS, Ozdemir N, Sak SD, Erden I, Akyar S; CT and MRI in tuberculous sternal osteomyelitis: a case report. Clin Imaging, 2002;26(2):112-115.
20. Shah J, Patkar D, Parikh B, Parmar H, Varma R, Patankar T, Prasad S; Tuberculosis of the sternum and clavicle: imaging findings in 15 patients.Skeletal Radiol, 2000;29(8):447-453
21. Sarlak AY, Gundes H, Gundes S, Alp M. Primary sternal tuberculosis: a rare unhealed case treated by resection and local rotational flap. Thorac Cardiovasc Surg 2001;49(1):58-9.
22. Hajjar W, Logan AM, Belcher PR. Primary sternal tuberculosis treated by resection and reconstruction Thorac Cardiovasc Surg, 1996;44(6):317-318.
23. Ford SJ, Rathinam S, King JE, Vaughan R.Tuberculous osteomyelitis of the sternum: successful management with debridement and vacuum assisted closure. Eur J Cardiothorac Surg, 2005;28(4):645-647.