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Case Report

Sternoclavicular joint tuberculosis masquerading as neck abscess

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ABSTRACT

Tuberculosis of the sternoclavicular joint is uncommon and management of tuberculosis can be challenging in the background of systemic illness like chronic liver disease as some of the first line drugs are hepatotoxic. Here we reported a case of 47 year old man who presented with a neck swelling noticed following a blunt trauma and record the clinical presentation, laboratory investigations, imaging findings. With the imaging studies and fine needle aspiration of the swelling detecting acid fast bacilli using TB PCR test, the diagnosis was arrived at. This case report illustrates the unusual presentation of extra pulmonary TB and selection of the anti-TB drugs in chronic liver disease.

Keywords: Tuberculosis, Sternoclavicular joint, Chronic liver disease, Antitubercular therapy

INTRODUCTION

Tuberculosis (TB) is a disease considered to be prevalent among immunocompromised and low socioeconomic strata. It continues to be a concern due to its varied clinical manifestations and atypical presentations and increasing prevalence among immunocompetent individuals. TB of the sternoclavicular joint accounts for 1-2% of peripheral tuberculous arthritis.[1] Due to the high prevalence of hepatitis B and tuberculosis in Asian countries co-infection is frequently seen and involves several extrapulmonary sites.[1,2] Patients on dialysis, healthcare workers, injection drug abusers and those with HIV infection have increased risk for co-infection.[2] Due to its diverse presentations, there can be a delay in the diagnosis and initiation of treatment. We reported on a 47 year old male with hepatitis B infection who developed a swelling in the left side of neck and was diagnosed to have tuberculosis of sternoclavicular joint.

CASE REPORT

A 47 year old male noticed a painful swelling in the left side of neck following a blunt neck trauma which gradually progressed in size 5 days after the injury. There was no associated fever, breathing difficulty, cough, difficulty in swallowing or loss of weight and appetite. He had hepatitis B induced chronic liver disease and was also on Insulin for his diabetes.

He was found to have a 9×5 cm erythematous swelling extending from the level of thyroid cartilage to clavicle going medial to the left sternocleidomastoid. This was warm non tender but indurated, immobile but also did not move on protrusion of the tongue or deglutition.

Routine laboratory investigations were normal except for elevated erythrocyte sedimentation rate (83 mm/hr) and C reactive protein (19.3 mg/l). Serological test for hepatitis B was positive (including E antigen) and negative for HIV and hepatitis C. Direct hyperbilirubinemia, hypoalbuminemia, elevated alkaline phosphatase and liver enzymes (Child-Pugh score 9, grade B) indicated decompensated chronic liver disease. The chest X-ray did not show any significant pulmonary lesion.

Contrast enhanced computerised (CECT) of the neck showed a well-defined hypodense lesion with an enhancing rim, measuring 37×39×73 mm in the left strap muscles (Figure 1), extending to the left sternoclavicular joint inferiorly with lysis of the medial end of the left clavicle

(Figure 2 A and B). Posterior-superiorly the left lobe of thyroid was compressed. Postero-inferiorly, there was extension into the anterior mediastinum in close contact with the left brachiocephalic vein. The left internal mammary artery was seen lateral to this collection.

On ultrasound guided fine needle aspiration of the abscess showed thick purulent fluid was obtained (Figure 3). The TB PCR test (XPERT TB) of the aspirate detected *M. tuberculosis* susceptible to rifampicin. Mycobacterial growth indicator tube (MGIT) also indicated the presence of *M. tuberculosis* sensitive to the first line of ATD. However keeping in mind the presence of chronic liver disease, a 4 drug antitubercular treatment (ATT) of rifampicin, ethambutol, levofloxacin with injection amikacin (intensive phase) was initiated and he was on regular follow up.

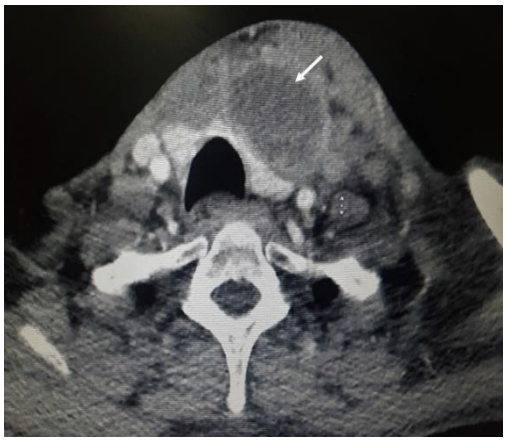

Figure 1: CECT neck (axial image) showing well defined hypodense lesion with a ring enhancement (white arrow) in the strap muscle.

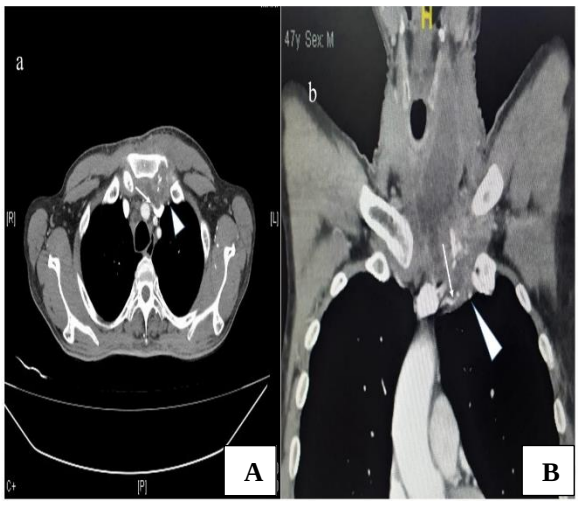

Figure 2: CECT neck showing lysis of the left sternoclavicular joint with extension of the abscess into the anterior mediastinum showing its relation to the left brachiocephalic vein (white arrow) and left internal mammary artery (white arrow head) (A) axial; and (B) coronal image.

Figure 3: Purulent fluid aspirated from the abscess.

DISCUSSION

TB is one of the major causes of morbidity and mortality throughout the world. Pulmonary TB constitutes 90% of the cases while 10% is extra pulmonary. TB cervical lymphadenitis is the commonest form of extrapulmonary tuberculosis and tuberculosis of sternoclavicular joint comprises 1-2% of peripheral tubercular arthritis.[3]

TB presenting as neck abscess is rare and reported scarcely.[4] Sternoclavicular arthritis associated with the neck abscess is even more infrequent. The course of sternoclavicular joint tuberculosis can be aggressive with constitutional symptoms and a painful joint or a gradually progressive painless disease with minimal joint destruction.[5]

Various theories have been postulated regarding the pathogenesis and spread of disease in sternoclavicular tuberculosis. One theory suggests infection originating from a reactivated or a new lung focus and spreading haematologically, another is that there is a contiguous spread from pulmonary tubercular focus to the sternoclavicular joint or the focus could also be the medial end of the clavicle.[6]

The diagnostic dilemma in this case was that the patient presented with a neck swelling which was noticed after a blunt trauma to the neck. The clinical findings of an abscess, the destroyed sternoclavicular joint on the CECT of the neck along with blood reports (ESR, CRP) were suggestive of an infective aetiology and raised the suspicion of tuberculosis. Though there was no evidence of pulmonary TB on the chest X-ray, the detection of AFB in the aspirate clinched the diagnosis. According to Dhillon et al the confirmatory diagnosis of sternoclavicular tuberculosis is made with microbiological or histological evidence of tuberculosis on biopsy or fine needle aspiration.[5] TB PCR helps in early diagnosis as it has a specificity ranging from 92 to 98%.[7]

Expeditious diagnosis of sternoclavicular tuberculosis is critical as it influences the outcomes of the disease. Early initiation of the treatment prevents complications including erosion of closely related large blood vessels and involvement of mediastinum.[1,8] Most of the individuals with sternoclavicular joint tuberculosis are treated conservatively with antitubercular therapy for 12 months and thereafter response is assessed. Surgical debridement is seldom required.[9]

Treatment of tuberculous infections even the drug sensitive ones, is challenging in patients with liver disease as the first line medications (isoniazid, rifampicin, pyrazinamide, except ethambutol) are all hepatotoxic.[10,11] Addressing tuberculous arthritis is even more challenging and requires multidrug therapy and a 4 drug regime is followed in the initial intensive therapy phase. Hepatitis B infection is a significant risk factor compounding ATT induced hepatotoxicity. The immune response to the HBV replications in the liver is augmented by the hepatotoxicity of the ATT drugs and the liver dysfunction accelerates further.[12] According to Dhiman et al for a patient with Child Pugh score between 8-10, ATT should include only a single hepatotoxic drug (rifampicin or isoniazid). Rifampicin is mostly used in treatment of tuberculosis in liver disease as it has higher efficacy and lower incidence of hepatotoxicity as compared to isoniazid.[13] Second line drugs are advocated if there is multidrug resistance, hepatotoxicity on the first line drugs or when there is pre-existing liver dysfunction. These are aminoglycosides (streptomycin, kanamycin, amikacin), capreomycin, cycloserine and fluoroquinolones (levofloxacin, moxifloxacin, ofloxacin and gatifloxacin).[14] The later-generation fluroquinolones (levofloxacin and moxifloxacin) improve treatment outcomes compared to the early-generation fluroquinolones. Only one drug from each class is used and amikacin and levofloxacin was administered along with rifampicin to our patient as they are well tolerated and have better in vitro activity against *M. tuberculosis*.[15,16]

CONCLUSION

A high index of suspicion for tuberculosis should be borne in mind especially in individuals with atypical presentation of neck abscesses for an early diagnosis and successful treatment. In the presence of co-infections and chronic liver disease, the first line drugs are hepatotoxic, the antitubercular drugs from the second line will also need to be added.

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