

Conservative Management of Sternal Tuberculosis, Case Report and Review of the Literature

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Abstract. To present a rare case of a sternal mass mimicking sarcoma, diagnosed as primary sternal tuberculosis; based on a high index of suspicion and managed conservatively. The patient responded completely on a four-drug anti tuberculosis therapy without any surgical intervention.

Keywords: Sternum, Tuberculosis, Osteomyelitis.

Introduction

Tuberculosis is a rare disease in developed countries, although it is endemic in the developing countries especially in Africa and Asia, yet the incidence of musculoskeletal tuberculosis is uncommon; especially the involvement of the sternum as a primary focus, as it is in this case.

Case Report

A 28-year-old male was referred to the surgical clinic with a three months history of a sternal mass (Fig. 1). He is an immunocompetent, newly married with no significant medical or surgical history. This mass increased gradually in size and associated with local pain, fever, night sweats and anorexia. The patient lost around ten kilograms of his body weight. He had a positive family history with a close contact to Pulmonary TB. Clinically, the mass was around 5×5 cm hard; fixed to the sternum and tender. The chest exam was normal and no associated

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Fig. 1. Shows the sterna mass post true cut biopsy.

lymphadenopathy. The blood work showed normal values apart from high (erythrocyte sedimentation rate ESR) and C reactive protein (CRP). Plain chest (Posteroanterior view) and sternal views X-rays showed no pathology. CT scan of the chest revealed a mass destroying the manubrium, and neither lung pathology nor mediastinal lymphadenopathy was found (Fig. 2). Our provisional diagnosis of primary sternal TB was based on clinical and radiological backgrounds which were confirmed later, microscopically. Our differential diagnosis includes sarcoma of the sternum. True Cut Biopsy was performed and revealed white cheesy discharge. This was sent for Ziehl-Neelsen stain, Lowenstine-Jenhsen medium cultures, Polymerase Chain Reaction (PCR) and cytology. PCR came positive for Mycobacterium TB, and after two weeks, Mycobacterium bacilli were grown in Lowenstine-Jenhsen medium cultures. The patient was started on a four-drug anti TB therapy (Isoniazid, Pyrazinamide, Pyridoxine and Rifampin). The patient was followed up in one to four months; eventually the mass disappeared completely.

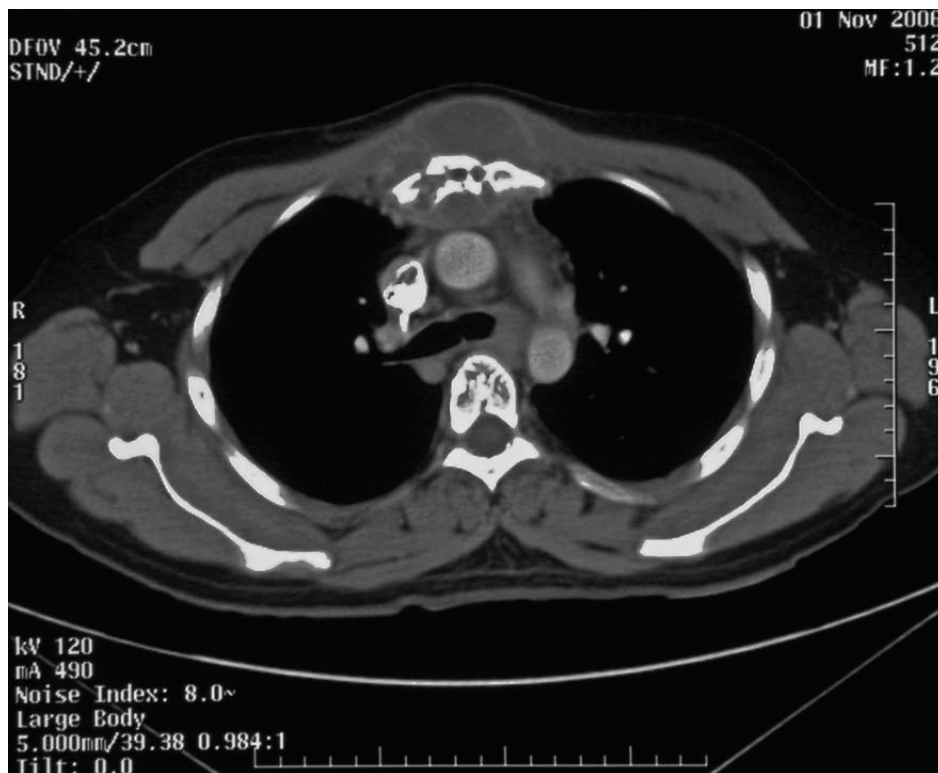


Fig. 2. Shows CT scan chest showing the mass destroying the manubrium sterni.

Discussion

In reviewing the literature, there were few cases reported about sternal TB⁽¹⁻²⁷⁾. Most of these cases were managed aggressively by surgical interventions and reconstructions^(1,8,10,13-15,19,25), while others succeeded with anti-TB agents^(3,4,28-30.)

In this case report, physician managed to use the conservative way and avoiding unnecessary surgery. Statistically, sternal TB occurs only in 1-5 per cent of all bones and joints^[1]. Primary sternal tuberculosis is even more uncommon, such as in this case. Generally, they are young patients, free of underlying disease, and living in a country in which tuberculosis is an endemic.

Sternal TB can be presented as a painful mass at the sternal level with general symptoms of fever, weight loss, and anorexia, thus diagnosing is necessary for a high index of suspicion and to rule out a malignancy^(1,2). However, when there is a high index of clinical suspicion, histologic examination of affected tissues and mycobacterium cultures are necessary^(2,3).

Zhao *et al.*⁽³¹⁾ managed a young immunocompetent woman having a primary sternal TB with extensive debridement and partial sternectomy; followed by musculocutaneous flap closure and long term postoperative antituberculous therapy. Ford *et al.*⁽³²⁾ had successful management of tuberculous osteomyelitis of the sternum with debridement and vacuum assisted closure. Choi *et al.*⁽⁸⁾ managed a case with extensive sternal and chondral resection followed by bilateral pectoralis major muscle flap positioning. Hsu *et al.* suggested that primary chest wall tuberculosis should initially be treated with a combination regimen of antitubercular chemotherapy⁽¹⁹⁾. The successful use of conservative management of primary sternal TB, supports the more conventional way of managing such cases.

In conclusion, primary sternal tuberculosis is a rare disorder worldwide^(1,33) and needs a high index of suspicion for diagnosis; based on clinical, radiological and microscopical backgrounds^(3,5,34). Physicians should always put sternal TB in the list of differential diagnoses of sternal masses mimicking sarcoma. Until now there is no standard treatment. However, it's believed that the conservative management with antituberculous agents should be the first line of treatment; if failure of this treatment, surgical intervention can be considered.

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العلاج التحفظي لدرن عظمة القص ، تسجيل حالة ومراجعة الحالات

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المستخلص. نقدم حالة نادرة لكتلة في عظمة القص تحاكي الورم السرطاني، شخّصت فيما بعد بدرن عظمة القص. كان التشخيص مبني على الاشتباه الاكلينيكي، وتمت معالجة الحالة تحفظيا بالأدوية المعالجة للدرن، وتمائل المريض للشفاء الكامل بدون أي تدخل جراحي.