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Case Report -2

A Case of Primary Sternal Tuberculosis

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Abstract :

Tuberculosis (TB) is a rare disease in developed countries although it is endemic in developing countries, especially in Africa and Asia. Involvement of the sternum by microbacterium tuberculosis is rare. Thus diagnosis of sterna TB is not often considered particularly in developed countries. Here we report a case who present with swelling of the sternum in UK but ultimately diagnosed as a case of primary sterna TB in Bangladesh

Case Report :

A-20-years old boy presented with severe generalized weakness for about seven days and swelling over the chest for six months. He use to reside in UK for last 2.5 years and returned to Bangladesh 6 days back. For chest swelling he consulted with the general physician at UK and was diagnosed as a case of non specific musculoskeletal swelling and treated by local NSAID gel. Gradually swelling was increasing in size and it become mildly tender. In reconsultation a week before returning to Bangladesh he was treated by oral ecosprin 300mg daily in UK. Here in Bangladesh, he was newly evaluated and he gave no history of low grade fever or weight loss or any systemic complain other than local swelling over the chest for last six months. On query he gave history of melaena after ecosprin intake for last seven days. Examination revealed he was severely anemic, got a 3 cm diameter cystic swelling over sternum (Fig. 1). Urgent investigation report showed his HB was 5.4gm/dl, ESR 105mm in first hour, WBC $4.1X10^9$/L, differential count was normal, platelet-$210x10^9$/L, PBF suggestive of microcytic hypo chromic anemia, blood group A+. RBS, serum electrolyte, HBsAg, Anti HCV, Serum creatinine, SGPT, Urine RME were normal. His stool OBT was positive. Urgently he was transfused with 3 units of whole blood. In further evaluation upper GI endoscopy showed erosive gastritis. Chest X-ray P/A view was normal. CT scan (Fig. 2) of the chest showed high density fluid filled lesion at anterior of sternum with mild erosion of underlying manubrium; possibly abscess. CT guided FNAC showed chronic granulomatous inflammatory lesion favoring tuberculosis (TB).

Figure 1: Swelling over the sternum.

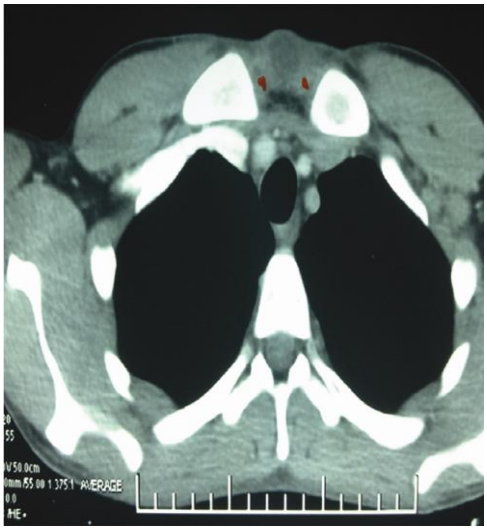

Figure 2: City Scan of the chest showing bony lesion in the sternum.

After proper counseling antiTB was started with 4FDC (rifampicin, isoniazid, pyrazinamide, ethambutol) on follow up after forty five days his pain was slightly decreased but swelling was persistent and size was same. Patient was referred to surgeon and the swelling was drained, drain tube was kept in situ for 7 days. At that time patient was on intensive phase of category 1 antiTB. Then he was prescribed maintenance phase of category one antiTB treatment with rifampicin, isoniazid for further 7 months and responded completely.

Discussion :

Approximately 60-80% of skeletal TB cases involve the spine or weight bearing joints while the sternum is involved in approximately 1% of the cases (1,2,3). Primary tuberculous sternal osteomyelitis is even more uncommon. Thus diagnosis of the sternal TB is not considered particularly in developed countries that was the reason for delayed diagnosis of our patient. Sternal TB osteomyelitis present with clinical manifestations similar to other form of the osteo articular TB disease, including soft tissue swelling, which is the most common symptom seen in 81% of the patient with sternal TB; Bone pain and swelling erythema, warmth and tenderness; enlarge regional lymphnodes, bone deformity or fractures or a draining abscess or sinus. Constitutional symptoms are less commonly seen but include malaise, fever, night sweat or weight loss. In our patient there was no symptom of systemic manifestation other than a local swelling and tenderness. He has got severe anemia due to drug induced GI bleeding. There appears to be a male predominance and with mean age of 36 years (11-59 years). Inflammatory markers such as erythrocyte sedimentation rate, C-reactive protein lactate dehydrogenase and white blood cell count are almost universally elevated(4,5).

Although biopsy and culture of the microbacterium is considered as the gold standard, it has been demonstrated that fine needle aspiration cytology is the most commonly used technique for establishing a diagnosis (6). It is easy, inexpensive, and can provide early clues to establish a diagnosis. Sternal radiographs are nonspecific and do not provide additional clues to diagnosis. Even a technetium bone scan is non-specific and cannot provide a clue about the etiology. CT has traditionally been used for evaluation of tuberculous sternal involvement as it also picks pluro pulmonary pathology (7).

Four drug antiTB (ATT) therapy with rifampicin, isoniazid, pyrazinamide and ethambutol form the backbone of the treatment. Although there is no consensus guideline to the precise regiment and duration for sternal TB, extra pulmonary TB is generally treated with a six to nine month regiment (two months of isoniazid, rifampicin, pyrazinamide, ethambutol, followed by four to seven months of isoniazid and rifampicin), unless the organisms are known or highly suspected to be resistant to this first line drug (8). Extended therapy may be required for osteoarticular TB disease, delayed treatment response or drug resistance. Directly observed therapy is strongly recommended to better ensure medication compliance (9,10). Many authors report surgical debridement to be essential to drug response, prevent recurrence or formation of draining sinus (11, 12, 13). They believe early drainage and complete debridement of the necrotic material which may include sternotomy, concomitant with ATT should the mainstay of the treatment. Initially our patient did not respond with ATT but after surgical debridement along with ATT he was cured completely.

Conclusion :

Primary sternal tuberculosis is rare disorder worldwide and needs a high index of suspicion for diagnosis based on clinical, radiological and microscopical backgrounds. Physicians should always put sternal TB in the differential diagnosis of sterna masses mimicking sarcoma. Until now there is no standard treatment. However, it is believed that the conservative management with the anituberculour agent should be the first line of treatment. If treatment fails, surgical intervention can be considered.

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