

# Tubercular costochondritis a rare case from a primary care center in Bangladesh

## Abstract

Tuberculosis (TB) is the second leading cause of death after COVID-19 from a single infectious agent.<sup>1</sup> It can virtually affect almost any part of the body. But, tuberculosis of cartilage is least heard and very rarely described. Here we report a 17 years old lady who presented with insidious swelling and pain with accompanying colour change over costochondral junction and after 2 long years of hardship, she was diagnosed and treated successfully.

**Keywords:** tuberculosis, costochondritis

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## Introduction

As per the World Health Organization, globally 5.8 million people have been newly diagnosed with Tuberculosis and 1.5 million people have expired in 2020.<sup>1</sup> Musculoskeletal tuberculosis comprises about 10- 15% cases of all extra pulmonary TB in TB prevalent countries<sup>2,5</sup> and as per the order of frequency of involvement, cartilage comes to the bottom of the list. Due to its unusual, insidious disease course it sometimes becomes very challenging to diagnose. The diagnosis is usually made by typical radiological findings and histological evidence of tuberculosis. This case report will delineate the sufferings of a tubercular costochondritis patient and her journey.

## Case report

Miss X, a 16 years old lady had presented to us with swelling over the chest wall, more precisely over the left 2<sup>nd</sup> costochondral junction. The swelling was gradually increasing, very slowly and was associated overlying hyperpigmentation. Total duration of illness was about 2 years. She consulted different physicians multiple times, but unfortunately every time was treated with symptomatic treatment, was reassured that it may be a bony prominence and treated conservatively. Patient's normal chest radiograph may also have been contributed to this. When she came to us, she mentioned that swelling has suddenly increasing fast, become painful and overlying skin is gradually darkening. She had no constitutional symptoms, no contact or, prior history of tuberculosis. On examination, there was a tender, hard swelling over the left 2<sup>nd</sup> costochondral junction with overlying hyperpigmentation. Other clinical examinations were unremarkable. Her chest X ray and related images have been attached below Figure 1, 2.

After starting Anti TB drugs initially though the symptoms improved, but after 3 weeks swelling again started to increase accompanying with increasing hyperpigmentation. So, a CT thoracic cage with 3D reconstruction was advised. But, in CT chest there was no obvious bony lesion. FNAC was repeated and result was consistent with previous one. Thoracic surgery consultancy was also taken, but they also planned to continue conservative management. So, oral prednisolone was added on and gradually tapered over 6 weeks. After 2 months, patient gradually improved, swelling decreases, pain subsided and overlying skin colour changes Figure 3. The patient was also screened for pulmonary TB but there was no evidence. She was treated with standard anti TB chemotherapy for 12 months. After 1

year, she was completely cured and thus 3 years of her agonizing journey came to an end.

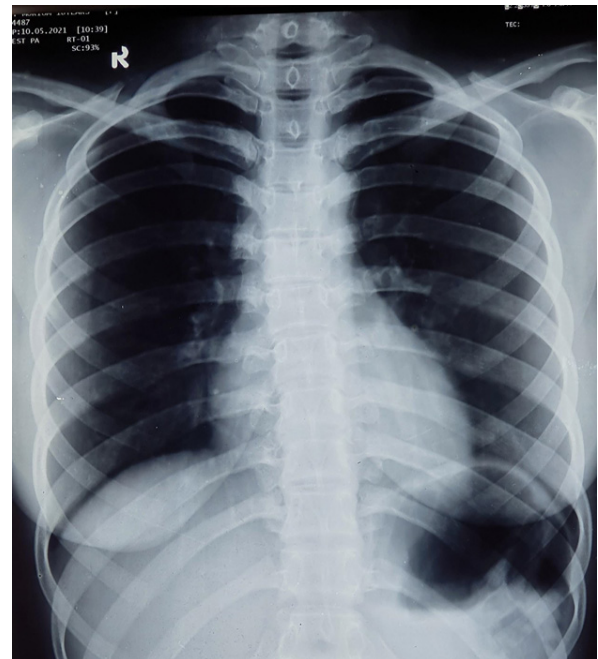
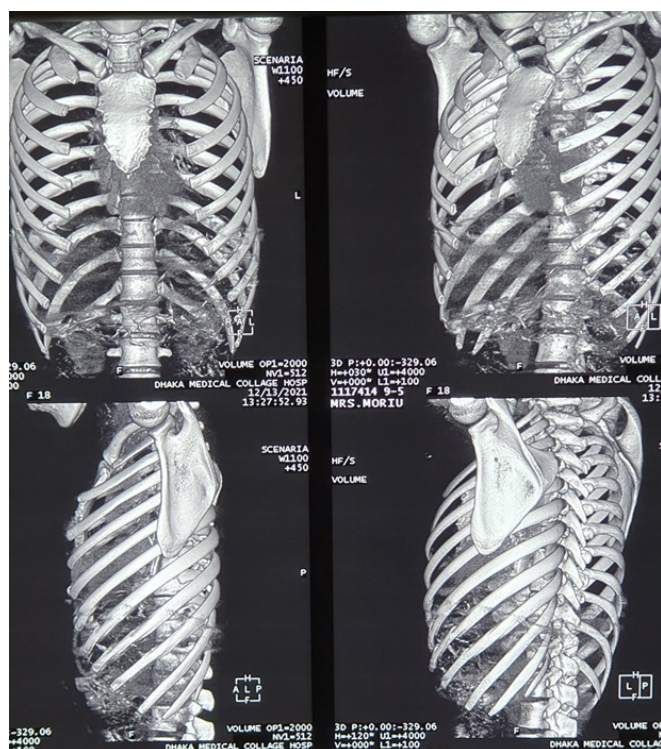


Figure 1 Chest X ray: normal findings.



Figure 2 Overlying skin showing hyperpigmentation over the affected area.



**Figure 3** CT scan thoracic cage 3D reconstruction.

## Discussion

Tuberculosis is an infectious, communicable disease caused by bacilli *Mycobacterium tuberculosis*. About a quarter of world's population has been infected with Tuberculosis. Musculoskeletal Tuberculosis is the commonest form of extra pulmonary tuberculosis and account for 1-2% of all tuberculosis patients and 10-15% of all extra pulmonary tuberculosis in endemic region.<sup>2,3,5</sup> Most of the patients are children and young adult, and diagnosis is often delayed due several weeks, even months. Rib tuberculosis is extremely rare, commonest inflammatory disorder involving ribs and account for <5% of all skeletal tuberculosis.<sup>5</sup> The commonest site involving the ribs are shaft(61%), followed by costovertebral joint(31%) and costochondral region(13%).<sup>6</sup> In our case, costochondral junction was involved. Multi focal involvement of ribs are also found, but usually seen in immunocompromised patients. Proposed mechanisms for rib tuberculosis are haematogenous or, lymphatic dissemination following activation of a dormant tuberculosis focus(commonest), direct extension from mediastinal lymph nodes or, direct extension from lungs.<sup>8,10</sup> The commonest presentation of rib tuberculosis is tender or, non-tender chest wall mass and chest pain. Mass can be cystic or doughy. There may be accompanying sinus, but usually a late presentation. Progressive enlargement of surrounding tissue and destruction of ribs are characteristic of rib tuberculosis.<sup>7,9</sup> Radiological, microbiological and histological evidence all help in diagnosis. Chest X ray shows osteolytic and destructive bony lesion. USG may show hypo-echoic lesion in chest wall. As it is a paucibacillary lesion, microbiological confirmation is difficult. Fine needle aspiration cytology is an easy and convenient way to make a diagnosis. Blood parameters are usually normal. Tuberculin skin test is usually positive.<sup>4,7,9</sup> If there is diagnostic uncertainty, CT scan

of thorax can help in making a diagnosis, as well to rule out other possibilities and complications. As, we have mentioned earlier it takes time to make a diagnosis of rib tuberculosis as, its onset and progression is very insidious with minimal systemic symptoms. Moreover, it is the rarest of all musculoskeletal TB. It cost 2 years of our patient to make a diagnosis. Interesting Chest radiographs were always normal, and hard- bony consistency confused primary physicians. She was treated with calcium supplements, analgesics and anxiolytics for long 2 years. Recent increase in size and overlying colour change aided in suspicion. Pyogenic osteomyelitis and bone tumors were our differential diagnosis. Her sputum for AFB and Gene Xpert was negative, but she had positive tuberculin test. Paradoxical increase in size of swelling following treatment also confused us and patient was in fear that, she might have a tumor. Then, CT scan and repeat FNAC was performed and was consistent with our diagnosis. She was treated with standard anti TB chemotherapy for 1 year and declared cure. Isolated tuberculosis of rib is extremely rare and should be kept in the differentials in chest wall swelling. We should remember, in a high TB prevalent country like us, tuberculosis will not always come to us in typical manner, unusual presentations should be kept in mind and searched thoroughly.

## Authors contribution

CSP was involved in diagnosis and patient's management. NC did the literature review and manuscript writing.

## Conflicts of interest

Nothing to declare.

## Consent

Taken from the patient for the publication.

## References

1. World Health Organization *Global tuberculosis control- epidemiology, strategy, financing: WHO Report*. 2021.
2. Garcia S, Combalia A, Serra A, et al. Unusual location of osteoarticular tuberculosis. *Arch Orthop Trauma Surg*. 1997;116(6-7):321-323.
3. Chang DS, Rafii M, McGuinness G, et al. Primary multifocal tuberculous osteomyelitis with involvement of the ribs. *Skeletal Radiol*. 1998;27(11):641-645.
4. Shah BA, Splain S. Multifocal osteoarticular tuberculosis. *Orthopaedics*. 2005;28(3):329-332.
5. Sing SK, Gupta V, Ahmad Z, et al. Tubercular osteomyelitis of rib- case report. *Respiratory medicine CME*. 2009;2(3):128-129.
6. Tatelman M, Drouillard EJP. Tuberculosis of the ribs. *Am J Roentgenol*. 1953;70(6):923-935.
7. Asnis DS, Niegowska A. Tuberculosis of the Rib. *Clin Infect Dis*. 1997;24(5):1018-1019.
8. Gaude GS, Reyes AK. Tuberculosis of the chest wall without pulmonary involvement. *Lung India*. 2008;25(3):135-137.
9. Nita RS, Devanand C, Sabri MA, et al. Tubercular Osteomyelitis of rib: An unusual form of skeletal tuberculosis. *International Journal of Medical Science and Clinical Interventions*. 2017;4(3):2781-2783.
10. Wiebe ER, Elwood RK. Tuberculosis of the ribs – a report of three cases. *Respir Med*. 1991;85(3):251-253.