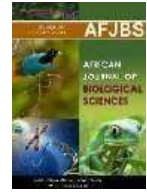




## African Journal of Biological Sciences



### Tuberculosis or malignancy: A Masquerade

Varuna Jethani<sup>1\*</sup>, Aarti Kotwal<sup>2</sup>, Anuradha Kusum<sup>3</sup>, Sushant Khanduri<sup>4</sup>

<sup>1,4</sup>Respiratory medicine department, Swami Rama Himalayan University, Dehradun, India

<sup>2</sup>Microbiology department, Swami Rama Himalayan University, Dehradun, India

<sup>3</sup>Pathology department, Swami Rama Himalayan University, Dehradun, India

**\*Corresponding author:** Dr Varuna Jethani

\*Associate professor, Respiratory medicine department, Swami Rama Himalayan University, Jollygrant, Doiwala, Dehradun, India 248140, Kjethani14@gmail.com

#### Article History

Volume 6, Issue 3, March 2024

Received: 22 Apr 2024

Accepted: 15 May 2024

Doi: 10.33472/AFJBS.6.10.2024.617-620

#### Abstract

Tuberculosis can present in any form and can resemble malignancy however to confirm the diagnosis of tuberculosis is a great task moreover when there is unusual presentation, unusual site involvement and difficult to approach to the site involved.

We present three cases where there were unusual site of involvement of tuberculosis and all features in favour of malignancy, one case with mass lesion at the head of pancreas, another a soft tissue density in lung and last lesion at the sternum.

**Keywords:** sternal tuberculosis, malignancy, anti-tubercular treatment, lung opacity, pancreas tuberculosis

ORCID iD:

1. Dr Varuna Jethani- corresponding author: 0000-0003-4434-7850
2. Dr Aarti Kotwal-0000-0001-9459-6922
3. Dr Anuradha Kusum- 0000-0003-4439-6038
4. Dr Sushant Khnaduri- 0000-0002-4877-860X

#### Introduction:

Tuberculosis (TB) is a major public health issue and if untreated adequately it is associated with high morbidity and mortality with estimate 13% of global case fatality rate especially in less developed countries like India (1). 21.4 Lakh TB cases notified in India in 2021, 18% higher than 2020. Extrapulmonary TB accounts for 15-20% with musculoskeletal involvement being seen in 1-3% of these cases only (2).

We report three cases with unusual site of involvement and unusual presentation mimicking malignancy, two patient diagnosed as TB from extrapulmonary site and one from lung soft tissue mass like presentation.

#### Case Series:

First case- 57 year female, principal in a government college, presented with low backache since 2 months with no history of fever, weight loss, decreased appetite, trauma, lower limb pain, numbness

or any other site pain, her routine blood investigation were within normal limit, on general and physical examination there was no gross finding. She underwent magnetic resonance imaging (MRI) lumbosacral spine (LS) and ultrasound (USG) whole abdomen. MRI was suggestive of focal lesion at L3 and L5 vertebral bodies, could be secondary to metastatic deposits (figure 1), and USG suggestive of lobulated cystic mass in region of uncinate process of pancreas, further she underwent computed tomography (CT) of whole abdomen suggesting large cystic mass lesion in uncinate process and proximal body of pancreas and with local peripancreatic necrotic lymph nodes probably neoplastic (figure 2). In view of these findings malignancy was thought first, she was further evaluated, her chest X-ray and mammography of breast was normal, her bone scan was suggesting of abnormally increased osteoblastic activity in L3 and L5 vertebra and left acetabulum, so pancreas being primary with metastasis to spine, USG guided needle aspiration was done from pancreas suggestive of tuberculosis and biopsy from L5 vertebra was also suggestive of tuberculosis and later biopsy sample send for line probe assay was found to be sensitive for rifampicin and isoniazid. Patient was started on anti tubercular treatment and she recovered well with USG whole abdomen within normal limit.

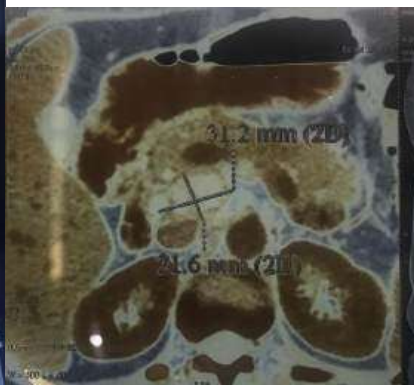
Second case- 39 year old female, housewife presented with pain in bilateral lower limb, generalised body weakness since 8-9 months. On routine blood investigation she had mild anaemia with liver and kidney function test within normal limit. On examination sternal swelling, hard, non tender, of around 6cm x 6 cm in size was seen. In view of this she underwent MRI LS spine suggestive of altered signal intensity in dorsal and lumbar vertebrae involving pedicle and sacrum- likely metastatic (figure 3), USG bilateral breast- BIRADS I, heterogenous mass in anterior chest wall overlying sternum, she underwent needle aspiration from sternum suggestive of atypical cell then planned further for Positron Emission Tomography (PET) scan and biopsy from sternum. PET was suggestive of bilateral pleural deposit with right pleural effusion suggesting of primary malignancy, metastatic bilateral cervical, axillary, internal mammary, mediastinal, pelvic lymphadenopathy, metastatic bony lesion (figure 4). Diagnostic pleural tap from right side was exudative with high adenosine deaminase level

However, biopsy from sternum was suggestive of Tuberculosis, so she was started on first line anti tubercular drugs and she is doing well, completed 1 year of treatment with resolution of pleural fluid, sternal lesion and improvement in bony lesions.

Third case: 38 year old female, housewife, presented with history of blood tinged sputum on and off since 1 month, with no history of fever, decreased appetite, weight loss, trauma, bleeding from any other site, chest pain. On general and physical examination no abnormality was seen, her routine blood investigation was suggestive of anaemia and rest parameters were normal, sputum examination for true nat testing was negative, chest X-ray was suggestive of haziness in right lower zone (figure 5), further CT thorax was done suggestive of soft tissue lesion in right lung with paratracheal lymph node (figure 6). CT guided needle aspiration of lesion was done which was negative for malignancy, patient further refused for any other investigation and started on anti tubercular drugs, patient showed improvement and repeat CT after 6 months had resolution of lesion (figure 7).



**Figure 1**  
MRI-Lesion at L3 and L5 vertebral body



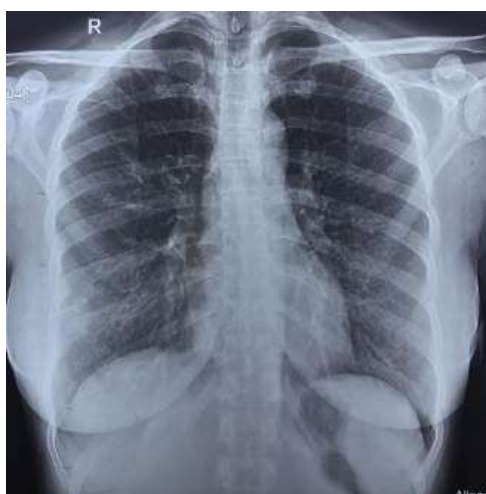
**Figure 2**  
CT S/O-cystic mass at pancreas



**Figure 3**  
MRI- lesion in dorso lumbar spine



**Figure 4**  
PET scan- uptake at various site(metastasis)



**Figure 5** Chest Xray - heterogenous opacity In right lower zone



**Figure 6** CT chest- soft density mass -Right side



Figure 7

CT chest – post treatment completion

Conflict of Interest- "The authors have no conflict of interests to declare.

Funding- None

Ethical approval- taken from ethics committee

#### Author Contribution:

**Dr Varuna Jethani**- Conceptualization, Software, Writing – Original Draft. **Dr Aarti Kotwal**- Investigation, Resources, Data curation. **Dr Anuradha Kusum**-Investigation, Supervision, Resources. **Dr Sushant Khanduri**- Validation, Investigation, Project administration

#### Discussion

TB if detected late can lead to early morbidity and mortality, in our 3 cases there were unusual site of presentation with first differential in each case being malignancy and massive work up was done and approached to a diagnosis of tuberculosis.

Pancreatic TB seen mostly in young adults and is often associated with immunosuppression or miliary TB(3,4) however it was not seen in our case and none of our patient was immunocompromised. In pancreatic TB most common symptom is abdominal pain in 66% of cases, followed by fever(52%) weight loss(46%), weakness(28%), back pain(20%), jaundice(15%) (5) and our patient had main symptom of back pain only.

TB of sternum is very rare occurrence amongst extrapulmonary TB, symptoms usually include soft tissue swelling over sternum being most common and mostly associated with dull aching pain, bone deformity may present in advanced stage, constitutional symptoms such as malaise, fever, weight loss are less common(2). In sternal TB cartilage is first destroyed peripherally with preservation of joint space for a long period of time. Sternal osteomyelitis mainly occur as part of hematogenous or lymphatic dissemination of disease from other site or reactivation of latent foci.

In our both the cases there was spine involvement too, with lesion seen in dorso lumbar spine mimicking secondary metastasis.

Vertebral body biopsy for spinal lesion of unclear origin is effective and safe diagnostic procedure. TB of cervical and upper thoracic is more disabling than lower thoracic and lumbar spine which being more common sites of involvement in TB (6). Back pain is typically common presenting symptoms in TB spine and other constitutional symptoms contribute to about less than 40%

Patients with lung opacity should always be worked up for malignancy and infective aetiology like TB especially in endemic countries.

Main stay of treatment remains anti tubercular drugs, Directly observed therapy is strongly recommended to better ensure medication compliance and work up for resistance of first line anti tubercular drugs should always be done

### **Conclusion**

TB is well known as a diagnostic chameleon and can resemble malignancy, vigorous efforts should be made to obtain preoperative microbiological or/and histological diagnosis to avoid the patient unnecessary surgical procedures. Antitubercular therapy is the mainstay of treatment and surgical drainage and resection is rarely required. A proper follow-up is necessary to monitor the response to treatment, any drug resistance, and to monitor any complications

### **References:**

1. Jain A, Chawla S, Kumar M. Sternal tuberculous osteomyelitis: A series of four cases. *Int J Community Med Public Health* 2017;2:288–92.
2. Adan Asif, Lokesh Dabral. Sternal Tuberculosis: Case Series of two cases. *Journal of Orthopaedic case report*.2021;Nov(11):59–63
3. S. Chatterjee, M.L. Schmid, K. Anderson, K.W. Oppong, Tuberculosis and the pancreas: a diagnostic challenge solved by endoscopic ultrasound. A case series, *J Gastrointestin Liver Dis* 2012;21 (1): 105–107
4. S. Shahrokh, M. Mohammad Bagher, S. Mohammad Taghi, A. Amir Houshang Mohammad, Pancreatic tuberculosis: an overview, *JOP*2015; 16 (3): 232–38.
5. C.Q. Yan, J.C. Guo, Y.P. Zhao, Diagnosis and management of isolated pancreatic tuberculosis; experience of 13 cases, *Chin. Med. Sci. J.* 2007;22: 152–55.
6. Park DW, Sohn JW, Kim EH, Cho DI, Lee JH, Kim KT, Ha KY, Jeon CH, Shim DM, Lee JS, Lee JB, Chun BC, Kim MJ: Outcome and management of spinal tuberculosis according to the severity of disease: a retrospective study of 137 adult patients at Korean teaching hospitals. *Spine* 2007; 32:E130–135