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Case Report

A case report on Pott's spine masquerading as a midline neck swelling

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ABSTRACT

Spinal tuberculosis (spinal TB) is one of the common forms of extra pulmonary TB in both developed and developing countries. A cold abscess without any acute inflammatory symptoms is characteristic of spinal TB and is seen on magnetic resonance imaging (MRI) in almost 70% of the patients. 37-year-old female patient presented to the ENT OPD with complaints of midline neck swelling for 03 months duration. The patient also gave history of fever on and off for the past 03 months. The swelling was not progressive in size for 03 months. Ultrasonography of the swelling revealed a cystic collection at the level of the thyroid gland. Contrast enhanced computed tomography (CECT) revealed an abscess extending from C2 to DV5 with a prevertebral, paravertebral and an epidural component. To conclude spinal TB could present in multiple ways. In all cases of extra pulmonary tuberculosis (EPTB) the mainstay treatment is antitubercular therapy (ATT) unless there is neurological deficit. Surgery is indicated only in cases with deformity or instability of the spine.

Keywords: Extra pulmonary tuberculosis, Antitubercular therapy, Spinal tuberculosis

INTRODUCTION

Cervical spine tuberculosis (TB) is uncommon and can present atypically as retropharyngeal abscess or as an anterior neck swelling often mimicking primary head and neck pathologies, leading to delayed diagnosis.[1] TB continues to be a major global public health concern, with extrapulmonary tuberculosis (EPTB) constituting a substantial proportion of overall disease burden.[2]

EPTB is extremely common and is probably under-recognized and treated especially in a developing country like India.[3] The index-TB guidelines for EPTB states that the overall burden of EPTB is around 15–20% of all TB cases in HIV-negative patients and 40–50% of all TB cases in HIV-positive patients. Around 10% of all EPTB contributes to bone and joint TB. The burden of spinal TB cases worldwide is around 1-2%.[3] The cases presenting with neck swelling to the ENT clinic are very rarely reported as a case of EPTB.[4]

Although neck swelling is common presenting complaint in ENT practice, cervical spine tuberculosis presenting primarily as anterior neck swelling is exceedingly rare. Awareness of this unusual presentation is essential, particularly in TB-endemic countries like India. We hereby report a rare case of cervical spinal TB presenting as painless midline neck swelling, highlighting the diagnostic challenges, radiological findings and successful management of this uncommon manifestation.

CASE REPORT

37-year-old female, resident of Dehradun with no known comorbidities presented to the ENT OPD with complaints of a painless midline neck swelling for 03 months. The swelling was non-progressive in size and there were no pressure symptoms. On examination, there was a single diffuse midline neck swelling of about 5×4.5 cm in size, soft in consistency, non-tender, mobile in all directions and the skin over the swelling was normal. The swelling was

extending superiorly till the cricoid cartilage and inferiorly just above the sternal notch. The lateral extent of the swelling was upto the anterior border of the sternocleidomastoid on both sides.

On ultrasonography of neck there was thick-walled cystic collection of size 8.2×3.3 cm was seen at the level of postero-inferior to both lobe of the thyroid gland extending and crossing the midline showing low level echogenic content and thick internal septations. Ultrasonography (USG) guided fine needle aspiration cytology (FNAC) was done and 20 ml pus was drained.

Cytology revealed an ill-defined histiocytic aggregate in a background of predominant neutrophils admixed with lymphocytes suggestive of cold abcess (tubercular). Gene Xpert for *Mycobacterium tuberculosis* was positive.

Cervical magnetic resonance imaging (CEMRI) neck was done and was found to have a prevertebral, paravertebral and an epidural component. The prevertebral component extending from C2 to DV5 vertebral body level of 03×6.5×12.5 cm (Figure 1a), the paravertebral component at the level of DV1 to DV4 level with a maximum thickness of 12 mm on the right side and 16 mm on the left side (Figure 1b), the epidural component tracing just posterior to DV4 vertebral body for a craniocaudal length of 21 mm with a thickness of 6 mm causing mild displacement of dorsal cord posteriorly (Figure 1c).

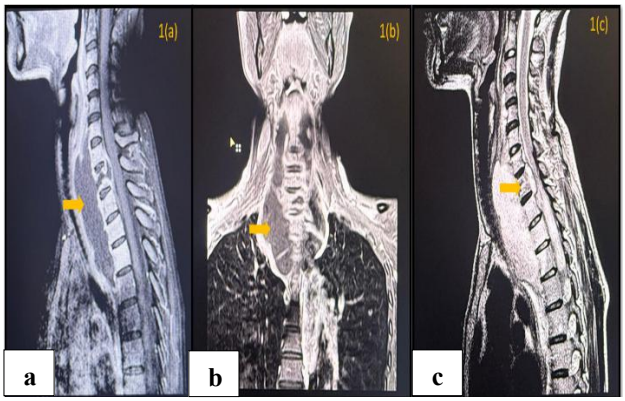

Figure 1: (a) Sagittal CEMRI neck post contrast T1WI shows enhancement of C6 to D4 vertebral body with intervertebral abscess at DV1, (b) coronal CEMRI neck post contrast T1WI shows large bilateral paravertebral abscess, and (c) sagittal CEMRI neck post T2WI shows epidural component indenting on the cervicodorsal cord.

The individual was managed with antitubercular chemotherapy with an intensive phase of 02 months and maintenance phase of 06-08 months as per the RNTCP guidelines for spinal TB.

Presently the patient is resolved of the symptoms and is on regular follow-up (Figure 2 a-c).

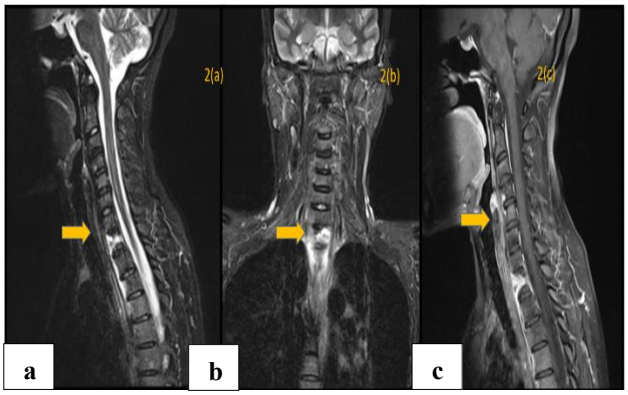

Figure 2: (a) Sagittal CEMRI neck STIR sequence showing revolving abscess at C6 to D4 vertebral body and DV1 intervertebral body, (b) coronal CEMRI neck STIR sequence shows resolving paravertebral abscess, and (c) sagittal CEMRI neck post gadolinium contrast shows the resolving epidural component post treatment.

DISCUSSION

Neck masses are one of the common issues that is encountered in the ENT clinics. The differential diagnosis for a case of neck mass is extensive, ranging from infective to inflammatory, congenital to acquired, benign to malignant involving any of the neck structures. TB is a treatable and preventable infectious disease yet a major contributor for morbidity and mortality in the developing countries.[5]

As per the global TB report released by WHO in 2024, the global rise in the TB (incident cases) that was during the COVID-19 pandemic has slowed down and started to stabilize.[6] Eleven million individuals are contracting tuberculosis and every year there are around 150,000 new cases of spinal TB.[7] TB spine is generally caused by *Mycobacterium tuberculosis* (Mtb) and has a hematogenous spread. It initially erodes the anterior part of the vertebral body causing loss of bone density leading to a kyphotic deformity.[8]

The true incidence of spinal tuberculosis is approximately 1.7%. The thoracolumbar region is the most common site and approximately only 10% contributes to the cervical involvement.[5] Our case is a rarity in itself since the patient presented with midline neck swelling for 03 months, without any constitutional symptoms and no other clinical features or history that were leading to the diagnosis of Potts spine. The dorsal spine is affected the most and tuberculosis of the cervical spine is uncommon. The CEMRI neck of the patient revealed an abscess extending from C2 to DV5 with a prevertebral, paravertebral and an epidural component that were consistent with Potts spine. Early diagnosis and immediate treatment is important in a case of spinal TB before the neurological sequale sets in. The patients diagnosed with spinal TB should be considered for a multidisciplinary approach.[10]

As per the World Health Organization (WHO) index TB guidelines on EPTB the mainstay of treatment for spinal tuberculosis is an extended course of ATT with a 2-month intensive phase consisting of four drugs (isoniazid, rifampicin, pyrazinamide and ethambutol), followed by a continuation phase lasting 10–16 months, depending on the site of disease and the patient's clinical course. Surgical intervention is indicated only in those cases with spinal deformity, instability and neurological deficit.[3]

CONCLUSION

When any patient of neck mass is reporting to ENT OPD, a high index of suspicion for TB should be borne in mind by all otolaryngologist. It is important to diagnose TB spine because if not treated timely can lead to serious sequelae. The mainstay of treatment for TB spine is medical management followed by surgical intervention unless indicated. TB spine manifesting with deformity, instability, and neurologic deficit may necessitate surgical intervention. To conclude in the last 30 years, it is understood that uncomplicated TB is a medical disease and is treated with antitubercular chemotherapy.

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