

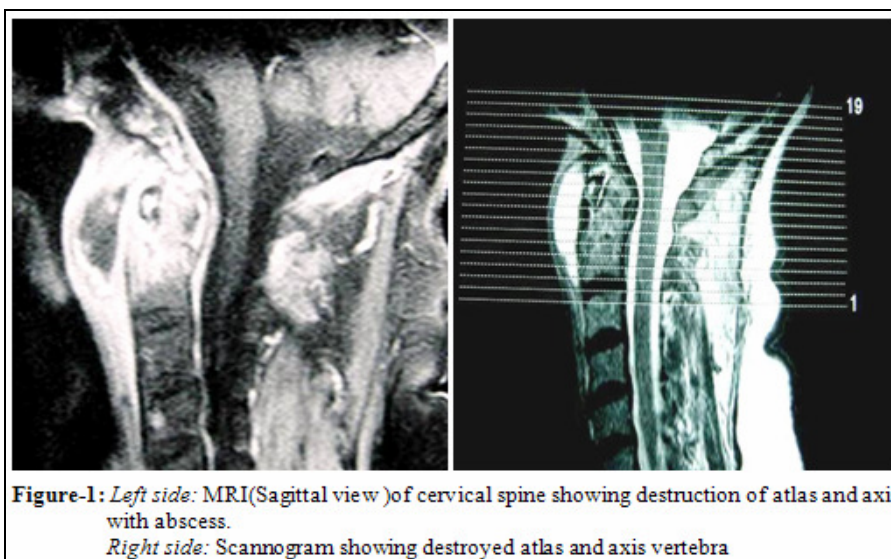
Chronic headache and neck pain - A case of cervical spine tuberculosis

Dear Editor:

Cervical spine tuberculosis is a rare form of spinal tuberculosis associated with high complication rate [1]. It is relatively uncommon even in tuberculosis endemic nations like the Indian subcontinent. Cervical Spinal tuberculosis has been categorized as stage 1 (minimal bone & ligamentous destruction, stage 2 (ligamentous destruction, minimal bone loss, anterior displacement), stage 3 (marked ligamentous & bony destruction with cervical spine displacement) [2]. A 61 year old female presented to the outdoor with persistent neck pain, tingling and occipital headache, low grade fever and difficulty in swallowing for last 3 months. The neck pain was of mild intensity not specifically related to posture, diurnal variation, and nausea and vomiting. The neck pain, tingling and the headache was localized mostly in the occipital region of head and aggravated by neck movement and heavy weight lifting.

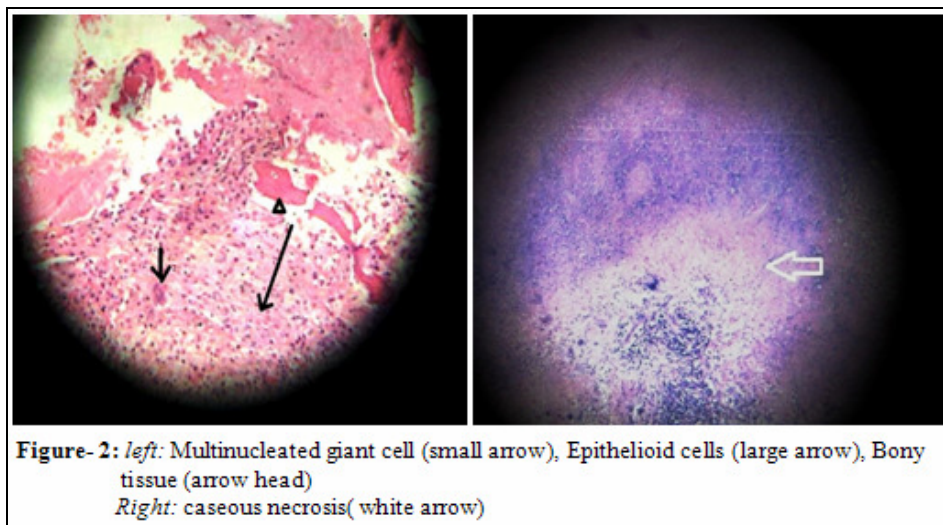
The onset of fever was gradual, persistent, low grade and has no specific aggravating or relieving factor, diurnal variation chill rigor or convulsion or altered sensorium but is associated with loss of appetite, myalgia and loss of almost 3 kgs of body

weight over the last 3 months. The swallowing difficulty was of gradual onset, both to solid and liquid food with no specific aggravating or relieving factors. The swallowing difficulty is non progressive, not associated with vomiting or regurgitation of old undigested food. On examination there was tenderness over the occipital and upper cervical region of the neck with no obvious scar, sinus or swelling over the neck area. Her neurological examinations including cerebellar functions and cranial nerves were within normal limits. Her investigations revealed Hb-8.3gm%, Total count $9.7 \times 10^9/l$ with differential count neutrophil 79%, lymphocyte 17%, Monocyte 3%, Eosinophil 1%, ESR 110 mm/hr, normal electrolytes. HIV 1&2, VDRL were non reactive but Mantoux test was moderately positive. Imaging of cervical spine showed destroyed (First cervical) C1 and (second cervical) C2 and occipital bony cortex with prevertebral abscess, grossly diminished disc space between C1 and C2 but no features of cord compression (Figure-1).



She underwent anterior cervical discectomy with drainage of the abscess and fixation and plating of the C2-C3 vertebra. Her chest x ray PA view and USG whole abdomen revealed no abnormalities. Blood culture revealed no growth. The pus showed presence of Acid fast Bacilli. Histopathological lesion obtained from the

granulation tissue/bones shows the presence of the multinucleated giant cells with caseous necrosis suggestive of skeletal tuberculosis [3-4] (Figure 2). She was started standard antitubercular regimen containing Isoniazid, Rifampicin, Pyrazinamide, and Ethambutol in addition to Pyridoxine.



After lung and the lymph nodes bone and joint is the next common site of tuberculosis in the body [5-6]. It constitutes about 1-4% of the total number of cases of tuberculosis. The spine is the commonest site of bone and joint tuberculosis comprising of about 50% of the total number of cases (Pott's spine) [6]. The dorso-lumbar spine is the commonest region of the spine to be affected [6-7]. Paradiscal tuberculosis of the spine is the commonest type of spinal tuberculosis (as in this case) [6]. Other types of vertebral tuberculosis are central, anterior and posterior variety. The tubercular granuloma result in the erosion of the vertebral margins. It also leads to the degeneration of the discs, weakness of the trabeculae of the vertebral body. This results in collapse of the vertebrae. There is collection of pus and debris from the diseased vertebrae, the pus collection was not associated usual signs of abscess [6]. In this patient the pus tracked elsewhere and led to the development of prevertebral abscess [6-8]. Typically the spinal tuberculosis patients present with the back or neck pain, kyphotic deformity or with features of paraplegia but sometimes atypical features of the spinal tuberculosis creates diagnostic dilemma. Radiologically, one entity 'Ivory vertebrae' where secondary pyogenic infections through the draining sinuses or

superficial abscess may lead to mixed lytic or blastic or a purely sclerotic lesion has been described [7]. Sometimes tubercular lesion may affect two or more contiguous vertebrae or different levels of vertebrae in different regions of the spine [7]. In addition to the usual features cervical tuberculosis may cause hoarseness of voice (due to recurrent laryngeal nerve palsy), dysphagia and stridor (Millar Asthma). Dysphagia or hoarseness may also occur due to anterior abscess formation in the neck. Sudden death has been reported after erosion into great vessels [8]. Cervical spine tuberculosis is very much susceptible to paraplegia. Hsu & Leong reported 42.5% cord compression rate in a series of 40 patients of cervical tuberculosis [1, 8]. Pott's paraplegia has been divided into 2 groups A and B. Group A is active form while group B is the paraplegia of healed disease [8]. Both groups have got subtypes 1 & 2. While paraplegia of less than 6 months recovers in more than 70% cases the prognosis of the one with more than 6 months old is grim. Other adverse prognostic factors for recovery are paraplegia caused by vascular embarrassment, dural penetration by infection or cord transaction by bony ridge [8].

Though treatment with multiple antitubercular drugs over long periods has proven effective in treating spinal tuberculosis surgery for spinal tuberculosis combined with antitubercular drugs is indicated when there is considerable bone destruction or deformity, neurological compromise due to compression of the cord, large abscess requiring drainage or when medical therapy alone fails to eradicate the infection. Lifeso et al recommended various treatment modalities depending upon the staging of C1-C2 tuberculosis. Stage 1 needs transoral biopsy, decompression and immobilization. Stage 2 needs transoral biopsy, decompression, reduction with halo traction and C1-C2 posterior fusion. Stage 3 as in this case needs occiput to C3 posterior fusion in addition to above steps [2, 8]. Differential diagnoses are pyogenic & fungal infections, primary bone tumors (osteosarcoma, chondrosarcoma, and myeloma), Sarcoidosis & giant cell tumors of bone [8]. A close differential diagnosis is the secondaries of the spine but in that case the disc spaces are well preserved [6]. Moreover diseases like secondary metastasis and multiple myeloma more commonly involve the

dorsolumbar spines. Cervical spine involvement is also seen in rheumatoid arthritis but other criteria should also be fulfilled.

Usually pyogenic infection is more serious in adults and centers on the disc. Though any bacterium can cause the spinal column infection but the most common bacterium is *Staphylococcus aureus* [3, 6]. Blood culture of the patient may help to detect the specific bacterium. MRI of cervical spine is an effective tool to help reach the diagnosis of spinal tuberculosis but Gupta et al noted that abscess formation and the presence of bone fragments were only MRI findings that helped distinguishing spinal Tuberculosis from Neoplasia [8-9]. Histopathological finding of caseating granuloma and multinucleated giant cells in the bone, synovium or granuloma or the demonstration of AFB bacilli in the smear or culture is confirmatory of tuberculosis [4]. Francis et al studied 29 spinal tuberculosis cases and found epithelioid granuloma in 89% cases, AFB positivity in 52% cases on smear and 83% cases on culture [8].

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