Spinal tuberculoma in a patient with spinal myxopapillary ependymoma

ABSTRACT
Intramedullary spinal tuberculosis is a clinical curiosity. A 19-year-old female was diagnosed and treated for lumbosacral myxopapillary ependymoma (MPE). Three years later, she presented with back pain and hypoesthesia of the left upper limb. Besides revealing local recurrence, the MRI demonstrated a fresh lesion in the cervicomedullary area. The latter was operated and the histopathology revealed a tuberculoma.

KEY WORDS: Myxopapillary ependymoma, spinal tuberculoma

INTRODUCTION
Tuberculosis remains an important pathological entity in developing countries. Spinal tuberculosis can have varied manifestations. Intramedullary spinal tuberculosis is a rare form of central nervous system tuberculosis and can be a great mimic. Although it is a potentially curable entity, a delay in the diagnosis or initiation of treatment can lead to significant morbidity. This report deals with a young female who was diagnosed and treated for lumbosacral myxopapillary ependymoma (MPE). After 3 years, she presented with back pain and hypoesthesia of the left upper limb. MRI was suggestive of a fresh lesion in the cervicomedullary area. Surgical pathology revealed a tuberculoma. We are presenting this case with a discussion on the radiological and pathological findings.

CASE REPORT
A 19-year-old female was diagnosed and treated for lumbosacral MPE 3 years back. She was advised postoperative radiotherapy but defaulted. After 3 years, she presented again with pain in the back and some tingling sensation in the left upper limb. On examination, her sensory and motor examination was normal except for slight hyposthesia in the left upper limb. MRI revealed residual disease in the form of multiple small, solid enhancing nodules in the dorsal aspect of the lumbar region. Also, a fresh lesion was observed in the cervicomedullary junction in the left posterolateral aspect of the cord with both intra- and extramedullary components [Figures 1 and 2]. In view of the critical location of the cervicomedullary mass and the sensory symptoms in upper limbs, it was decided to operate the patient. Peroperatively, the lesion was seen below the cerebellum on the left side and looked like a plastered tissue involving the cervicomedullary region. It was incised and there was egress of 2-3 cc of thick, creamish white nonfoul-smelling pus. The parietal membrane was thick and biopsied. The pus examination revealed a few trapped glial cells with no demonstrable acid-fast bacilli (AFB). The total leukocyte count (TLC) was 6 cells/cc with a few lymphocytes and occasional polymorphs. Cervicomedullary lesion biopsy revealed fibrous tissue with xanthomatous macrophages and inflammatory cells. Cerebrospinal fluid (CSF) was acellular and CSF biochemistry (sugar, proteins, chlorides, and LDH) was within normal limits. The Mountoux test was positive (24 mm induration at 48 h). A subsequent thorough clinical examination revealed a small left axillary lymph node of 1 cm size. Histopathological examination of the biopsied node revealed multiple granulomata involving the lymph node [Figure 3]. Therefore, the final diagnosis was spinal tuberculoma. The patient was started on antitubercular treatment (ATT) and kept on close observation for the lumbosacral lesion. At 1 year on follow-up, she is doing well clinically with a complete resolution of the sensory symptoms.

DISCUSSION
Tuberculomas involving the central nervous system are not uncommon in developing countries. Most of these lesions are intracranial, with the ratio of cranial and spinal lesions averaging 30:1. Most intramedullary tuberculomas are thoracic and
cervical tuberculomas are clinical curiosities. Spinal tuberculosis can present in various forms which include Pott's spine (64%), arachnoiditis (20%), intramedullary involvement (8%), and other rarer forms such as subdural and extramedullary involvement (8%).

The various types of intramedullary tuberculous lesions include tuberculoma, spinal cord edema, and cavitation. Intramedullary spinal tuberculoma is a rare form of central nervous system tuberculosis and an uncommon cause of spinal cord compression. Clinically, patients with intramedullary tuberculomas present with signs and symptoms depending on the location of tuberculosis in the spinal cord.

Most of the reported cases of intramedullary tuberculomas are associated with foci of tuberculosis elsewhere in the body. The traditional investigative modality of myelography has been replaced by the more accurate modality of MRI. Intramedullary tuberculomas are characterized by ring enhancement, with or without accompanying central hyperintensity on T2-weighted MR images. In our case, a lesion was observed in the cervicomedullary junction in the left posterolateral aspect of the cord with both intra- and extramedullary components. Our case too had a peripheral ring enhancement. The early lesions of spinal tuberculosis often show homogenous enhancement and this is replaced by a ring lesion with central hypointensity in later stages. Central caseation as was observed in our case appears bright and is characteristically called the target sign. In cases of spinal arachnoiditis, the lesions may appear as a clumping of roots in the lumbar region, the obliteration of normal subarachnoid space, irregularity of cord surface, and CSF loculation. Radiologically, the lesions that stand in the differential diagnosis of intramedullary tuberculomas include neoplastic (astrocytoma, ependymoma, hemangioblastoma, metastasis, lymphoma), inflammatory, demyelinating (multiple sclerosis), vascular (malformations, infarctions), and granulomatous lesions (syphilis, pyogenic, mycotic, parasitic). Intramedullary tuberculoma produces a mass effect that can cause compression of the spinal cord. Patients with uncertain diagnosis, poor response to medical management, progressive deterioration of the neurologic status during ATT and impending or early compressive features need surgical intervention. After adequate surgery, the lesion area is replaced by an area of gliosis, which probably is seen as an area of hypointensity on MRI. Surgery should be followed by an extended course of ATT. Thus managed, this pathology has a reasonably good outcome with recovery.

MPE is a slow-growing tumor of children and young adults that almost exclusively occurs in the conus-cauda-filum terminale region of the spinal cord. In our case, based on the clinical picture and imaging, it was reasonable to believe that the cervicomedullary lesion was a metastasis. Also, isolated reports support the argument that younger patients with MPE can pursue a more aggressive course compared to adults. In our literature review, we could trace only one reported case of anaplastic ependymoma in which CSF spread masqueraded like an infective process. In that case, antifungal therapy was initiated based on clinicoradiological findings. However, her neurological condition continued to deteriorate gradually.
and repeat imaging and subsequent open biopsy were confirmatory for intracranial and spinal seeding of anaplastic ependymoma.

Our case amply demonstrated the need for keeping a high index of suspicion while interpreting the clinicoradiological findings in CNS tumors with a risk for spinal metastasis. In our case, timely surgery and pathological findings saved her from having further neurodeficits or from being treated presumptively for metastatic disease. Oncologists need to be well on guard while facing similar situations.

REFERENCES