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Spine

Intramedullary spinal tuberculoma: report of three cases

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Abstract

Background: Intramedullary spinal tuberculoma is a rare form of central nervous system tuberculosis. This article describes the successful management of intramedullary spinal tuberculoma in 3 patients who received treatment between 2000 and 2003.

Case Description: The character of 3 cases was analyzed retrospectively, including clinical manifestation and magnetic resonance imaging findings. All masses were excised totally under microscope. Histopathologic examination revealed tuberculoma. Postoperatively, all patients received a 6 to 9 month course of ATT. The outcome was favorable.

Conclusions: The intramedullary spinal tuberculoma must be considered in the differential diagnosis of the spinal cord compression in patients with a history of tuberculosis. When confronted with a progressing neurologic deficit and poor response to ATT, surgical intervention should be considered. The optimal treatment is a combination of microsurgical resection and ATT.

Keywords: Intramedullary lesions; Surgical treatment; Tuberculoma; Antituberculosis treatment

1. Introduction

Tuberculosis remains an important pathological entity in developing countries. Intramedullary spinal tuberculoma, which is a rare form of central nervous system tuberculosis, is a rare cause of spinal cord compression. Although it is benign and curable, a delay in the diagnosis and treatment may lead to significant morbidity [4]. More widespread use of MRI has allowed more accurate and frequent detection of intramedullary tuberculoma [4,5,11]. Recently, some investigators have described success with drugs alone in cases of spinal cord tuberculosis [9,11]. Drugs are appropriate for diffuse involvement of the cord, but tuberculoma is a well-defined mass lesion, rendering surgical resection relatively straightforward [3,13]. In addition, surgical resection allows for a histopathologic diagnosis, which is necessary for any intramedullary mass identified by MRI.

2. Case reports

2.1. Case 1

This 33-year-old man presented with a 3-month history of left leg aggravated weakness, with progressive aggravation. The patient complained of numbness in both lower extremities and developed weakness in both legs over the next 2 months. Radiography of chest revealed a thin-walled cavitary lesion 6 months before, suggestive of tuberculosis; at that time he had been treated with ATT, but not specification. The patient had detected a left testicle mass 4 months previously; after surgical resection, histopathologic examination revealed tuberculosis of epididymis. The neurologic examination performed at admission revealed bilateral legs paresis with grade 3/5 power to all muscular groups. Sensory deficit was found below T12 level. The results of all biochemical and hematologic studies were within normal limits. Magnetic resonance imaging of thoracolumbar spine revealed an ill-defined lesion of mixed signal intensity with thickening of the spinal cord at T11-12 (Figs. 1-3). Because of the patient's neurologic deterioration, surgery was performed and the mass was excised completely under

Abbreviations: ATT, antituberculous treatment; CSF, cerebrospinal fluid; INH, isoniazid; MRI, magnetic resonance imaging; PZA, pyrazinamide; RIF, rifampicin.

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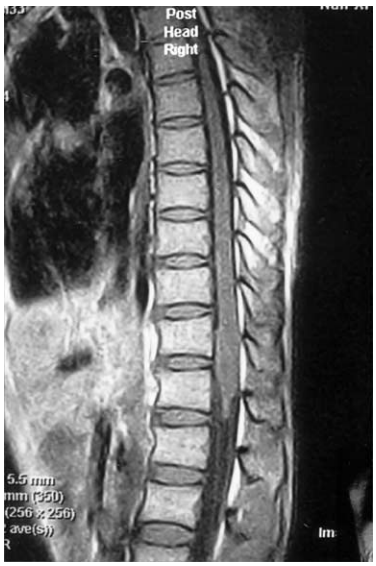

Fig. 1. Case 1. Sagittal T1-weighted MRI shows an intramedullary mass at the T11-12 spinal level.

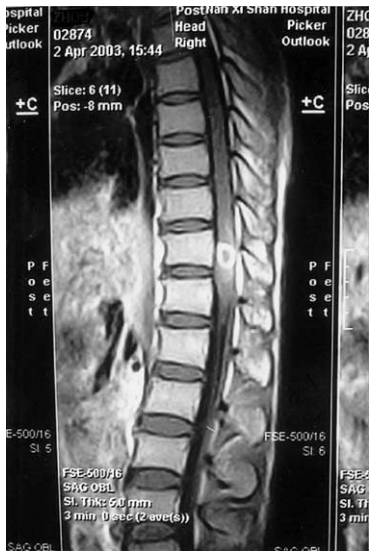

Fig. 3. Case 1. Sagittal T1-weighted MRI shows a ringlike enhancing intramedullary lesion (15 × 15 mm) with gadolinium ring enhancement.

microscope. Histopathologic examination revealed a granulomatous lesion. Antituberculous treatment was initiated with INH, RIF, and PZA after surgery and continued for a period of 6 months. After 1 month, the patient was able to walk without assistance.

2.2. Case 2

This 48-year-old man presented with a 2-month history of intermittent fever and night sweats and a persistent productive cough with occasional hemoptysis. Sputum acid–fast bacilli stains were positive, and cultures grew *Mycobacterium tuberculosis*. A tuberculin skin test was positive. Radiography of chest revealed a tuberculous lesion.

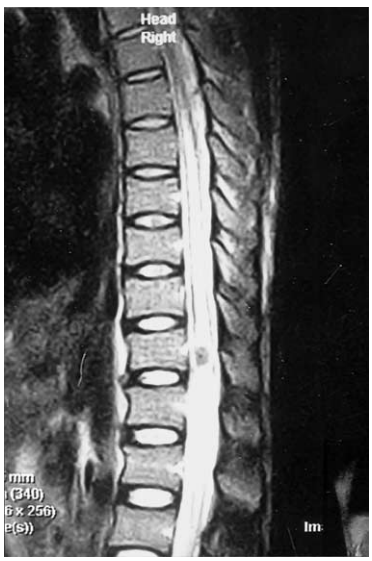

Fig. 2. Case 1. Sagittal T2-weighted MRI shows an intramedullary mass at the T11-12 spinal level.

A diagnosis of pulmonary tuberculosis was made for which ATT had been initiated. Two weeks before presentation, he developed weakness and numbness in both lower extremities and urinary incontinence. Neurologic examination revealed bilateral lower extremity with 4/5 strength. Sensory deficit to pinprick and light touch extended to the L1 level. Lumbar puncture disclosed a mildly turbid CSF, with glucose level of 15 mg/dL and protein level of 96 mg/dL. Magnetic resonance imaging of thoracolumbar spine revealed a circumscribed intramedullary mass at the level of T12 on both T1- and T2-weighted images, and with gadolinium ring enhancement. Because the intramedullary mass causes neural compression and poor curative effect of ATT, surgical resection of the lesion was performed, then posterior longitudinal myelotomy was executed and gray mass excised completely under microscope. Histopathologic examination revealed a granulomatous lesion containing Langhans-type giant cells and lymphocytes. The patient showed no new neurologic deficit postoperatively. The patient started on a combination of INH and RIF after surgery and continued for a period of 9 months; at the 3-month follow-up, he experienced normal urinary function.

2.3. Case 3

This 23-year-old man presented with a 5-month history of numbness of both legs, with a 1-month history of right leg weakness. The patient's medical history included infection with tuberculosis meningitis 6 months previously, and he was treated with ATT (INH, RIF, and PZA) from that time on. On neurologic examination, he was found with grade 1/5 power in right lower extremity and grade 4/5 power in left. Biochemical analysis of the CSF revealed an elevated protein level and cell population. Chest x-ray films were obtained and revealed no