

Primary Intradural Extramedullary Lumbal Spinal Tuberculoma

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ABSTRACT

Tuberculosis is an important pathological entity in developing countries with increased incidence. Non-osseous spinal cord tuberculomas can be found as extradural, intradural extramedullary, or intramedullary lesions. It has been estimated that intradural spinal tuberculomas comprise only 2–5% of central nervous system tuberculomas. A 31-year-old woman presented with a 2-month history of progressive paraparesis. Magnetic resonance imaging revealed an intradural, extramedullary lesion at L3-S2 levels with high contrast enhancement. Following operation, pathological examination of the lesion revealed granulomas with multinucleated and Langhans-type giant cells, and caseation necrosis typical of a tuberculoma. In the differential diagnosis of cauda equina lesions, primary intradural extramedullary tuberculomas should be considered as a rare entity.

Key words: Intradural, extramedullary, lumbal, tuberculoma

PRİMER İNTRADURAL EKSTRAMEDÜLLER LOMBER SPİNAL TÜBERKÜLÖM

ÖZET

Tüberküloz gelişmekte olan ülkelerde artmış sıklıkta görülen önemli bir patolojik hastalıktır. Kemik yerleşimi dışı tüberküloz vakaları, ekstradural, intradural ekstramedüller ya da intramedüller lezyonlardır. İntradural spinal tüberküloz vakalarının, santral sinir sistemi vakalarının yalnızca %2–5'ini oluşturduğu tahmin edilmektedir. Otuz bir yaşında bayan hasta, iki aydır ilerleyici paraparezi tanısı ile başvurdu. MRG incelemesinde, L3-S2 seviyeleri arasında kontrast tutan intradural ekstramedüller lezyon tespit edildi. Cerrahi sonrası lezyonun patolojik incelemesi, kazeifikasyon nekrozu ve Langerhans hücrelerinin eşlik ettiği multilobüle granülamöz reaksiyon olan tipik tüberküloz ile uyumlu idi. Ayırıcı tanıda, cauda equina lezyonlarının olduğu nadir görülen primer intradural ekstramedüller tüberküloz vakası tartışıldı.

Anahtar sözcükler: İntradural, ekstramedüller, lomber, tüberküloz

Tuberculosis (TB) is an important pathological entity in developing countries with an increased incidence (1, 2). It has been estimated that intradural spinal tuberculomas comprise only 2–5% of central nervous system (CNS) tuberculomas (3). Systemic TB may also present as spinal TB, frequently as an epidural mass, or rarely as non-osseous tuberculoma (4). Non-osseous spinal cord tuberculomas can be found as extradural, intradural extramedullary, or intramedullary lesions. Intramedullary tuberculomas of the spinal cord are rarely reported, and intradural extramedullary tuberculomas are even rarer (1, 5). Hereby, we describe an unusual case of intradural, extramedullary tuberculoma mimicking myxopapillary ependymoma.

Case report

A 31-year-old woman complaining of increasing severe low back pain radiating into both S1 dermatome on side for 2 months. In her past history, it was found that her sibling was treated previously for pulmonary TB diagnosed 2 years before. She also had a delivery history with spinal anesthesia 11 months ago. At admission, the patient showed mild paraparesis. An MRI of the spine disclosed a homogenous contrast-enhancing L3-S2 intradural extramedullary nodular lesion filling the spinal canal (Figure 1). In order to exclude any other secondary lesions of the CNS, an MRI of the head and spine was performed which showed no pathological findings. The patient underwent surgery. On opening the dura mater, there was a grayish, moderately vascular granulomatous lesion in the intradural extramedullary plane, which could not be easily separated from the rootlets. Light microscopy of the lesion revealed granulomas with multinucleated and Langhans-type giant cells, and caseation necrosis confirming the diagnosis of the tuberculoma (Figure 2). Postoperatively, the patient had moderate improvement. She was treated with a four-drug anti-tuberculous regimen consisting of rifampicin 450 mg, isoniazid 300 mg, pyrizinamide 1500 mg, and ethambutol 800 mg daily for a planned duration of 18 months.



Figure 1. An MRI (sagittal) of the spine disclosed a homogenous contrast-enhancing L3–S2 intradural extramedullary nodular lesion filling the spinal canal.

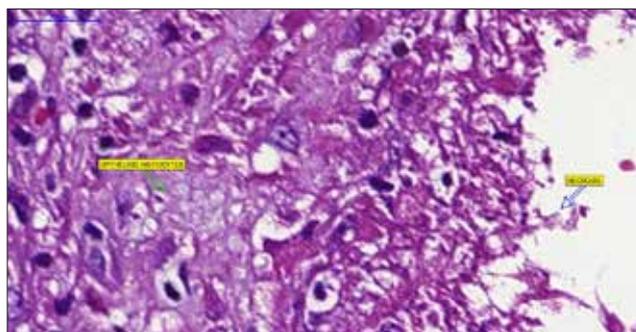


Figure 2. Light microscopy (Hematoxylin-Eosin x 4.1) of the lesion revealed granulomas with multinucleated and Langhans-type giant cells, and caseation necrosis.

Discussion

Recently, CNS tuberculomas have been more frequently observed in immunocompromised patients (2). In immunocompromised individuals the presentation of tubercular lesions may be atypical, and can result in delayed diagnosis. Few case reports talk about the isolated meningeal or spinal tuberculoma mimicking a spinal tumor (6). However, spinal TB mimicking an ependymoma has not yet been reported in literature.

Generally, spinal involvement in TB is classified into four categories: Potts' spine and Potts' paraplegia, tuberculous arachnoiditis, non-osseous spinal tuberculoma, and spinal meningitis (4). From Dastur's review, 64% of tuberculomas are extradural, 8% are intramedullary, and 1% are intradural extramedullary; the rest of the lesions involve the arachnoid without dural involvement. The thoracic spine is the most common site for a tuberculoma (7). Tuberculous arachnoiditis may develop from 3 different sources. These are a primary TB lesion arising in the spinal meninges; a downward extension from the intracranial TB meningitis; and a secondary spread from adjacent vertebrae disease (8). Tuberculous arachnoiditis passes through 3 stages: radiculitis - inflammation of pia arachnoid with associated hyperemia and swelling of roots; arachnoiditis - progressive fibroblast proliferation and collagen deposition leading to nerve root adhesions to each other and pia arachnoid; adhesive arachnoiditis - dense collagen deposition with encapsulation of atrophied nerve roots.

We were presented with an unusual case of a primary intradural, extramedullary tuberculoma of the cauda equina in a previously healthy young female. There was no primary or post-primary pulmonary disease, and no concurrent intracranial lesions existed. The patient was HIV negative, and had no obvious cause of immunosuppression. The

sibling of our patient who was treated due to pulmonary TB, or the spinal anesthesia that performed in her delivery were considered the potential sources of spinal TB. Intradural, extramedullary tuberculoma was diagnosed 11 months after the delivery. The guiding diagnostic findings were the clinical picture, MR image set, and pathological examination confirmed the initial diagnosis. The localization of the tuberculoma and its mimicking of an ependimoma on MR images was atypical.

MRI is the imaging modality of choice for these lesions. Spinal cord TB generally present as intramedullary tuberculomas with or without myelitis and syrinx. Clinically as well as radiologically, intramedullary tuberculomas may be difficult to differentiate from space occupying lesions such as primary and metastatic intramedullary spinal

tumors, and other chronic granulomatous diseases. The insidious nature and the gradual progression of the intradural tuberculoma often results in delayed diagnosis (4). Medical therapy remains the mainstay of the treatment for intramedullary tuberculomas, while a neurosurgical approach is usually required for extradural and intradural extramedullary tuberculomas (9).

Conclusion

In conclusion, although intradural extramedullary tuberculoma is a rare entity, it has a variety of clinical and radiologic features, and can mimic a number of other disease entities. Intradural extramedullary tuberculoma should be kept in mind in the differential diagnosis of ependimoma of the cauda equina.

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