Pituitary tuberculosis presenting as pituitary apoplexy

Pituitary tuberculosis (TB) is an uncommon form of intracranial TB. Isolated pituitary TB in the absence of other forms of intracranial or systemic TB is extremely rare and difficult to diagnose. Very few cases of isolated pituitary TB are documented in the literature.[1–5] They usually mimic a pituitary adenoma. Until now only one case has been reported presenting with 'pituitary apoplexy'.[6] We report another case of pituitary TB presenting with sudden onset headaches and neuro-deficits mimicking a pituitary apoplexy.

A 27-year-old female patient, living in Kolkata, India presented with a history of sudden onset of headaches followed by left ptosis and left facial numbness. She had no history of pulmonary or systemic TB. On examination she was found to be drowsy and obtunded. She had tachycardia (pulse 92/min) but her blood pressure was normal. Her Glasgow Coma Score was 13 (E3, M6, V4). She had left-sided complete ptosis and her direct and consensual pupillary reflexes were normal on both sides. There were no obvious visual field defects on bedside testing. She had left facial hypoesthesia in left V1 and V2 distribution. She had no other neuro-deficits or signs of endocrine disturbances. Her hormone profile did not reveal any abnormality except marginally elevated prolactin levels (150 mIU/L). Computerized tomography (CT) scan showed a sellar and suprasellar mass with evidence of hemorrhage that was enhancing brightly on contrast. A magnetic resonance imaging (MRI) scan showed well-defined sellar mass with suprasellar extension that was heterogeneously hyperintense on T-2-weighted images and there was marked heterogeneous enhancement of the mass and pituitary stalk on post-gadolinium scan (Figure 1A). With an initial diagnosis of pituitary adenoma with apoplexy, the patient underwent trans-sphenoidal excision of the pituitary tumor. Intra-operatively, the sellar mass was firm, gray, fibrous and densely adherent to the surrounding structures and was partially excised. Histopathology showed dense aggregates of lymphoid cells with occasional plasma cells around a few ill-defined granulomas composed of epitheloid cells and Langhans' type multinucleated giant cells (Figure 1B). There was no evidence of acid-fast bacilli (AFB) and AFB culture was negative. Histological diagnosis was that of granulomatous inflammation of pituitary suggestive of tuberculosis. These histological findings coupled with pituitary stalk thickening on the post-contrast MRI and the fact that the patient lived in a TB endemic area pointed towards a diagnosis of pituitary TB rather than lymphocytic hypophysitis or sarcoidosis. The post-operative course was uneventful except for a transient diabetes insipidus. She was started on anti-TB medication after histological diagnosis. Her ptosis and numbness improved completely within three weeks after operation. A post-operative hormone profile repeated after 6 months was normal and follow-up MRI showed complete resolution of the granuloma.

Though tuberculomas form 0.15 to 4% of all intracranial lesions, isolated pituitary TB is rare. Clinically and radiologically, it is difficult to distinguish pituitary tuberculomas from pituitary adenomas. A history of extracranial tuberculosis in the past associated with radiological findings like leptomeningeal enhancement, parenchymatous brain tuberculomas or a thickened pituitary stalk on contrast MRI, are indicative of the possibility of pituitary tuberculosis.[3] Pituitary TB presenting as 'apoplexy-like' symptoms has only been reported once before in the literature.[6] Pituitary apoplexy is seen in 6 to 10% of all pituitary tumors and presents with intense headaches, sudden neurological deficits like ptosis or visual impairment and altered sensorium.[7] In these patients early surgical decompression is warranted as it prevents persistent neuro-ophthalmic deficit. It is well documented that the efficacy of surgery for the relief of neuro-ophthalmic symptoms decreases with increasing duration of symptoms.[8] It has been speculated that tuberculous vasculitis can cause ischemic or hemorrhagic necrosis in the tuberculoma, pituitary gland or adjacent tissue and could give rise to these symptoms.[6] The main role of surgery in pituitary TB is to achieve diagnosis and decompression[3,6,9] and the preferred route is trans-sphenoidal.[9,10] Histologically the differential diagnoses of intrasellar granulomas include lymphocytic hypophysitis, sarcoidosis or Langerhans' histiocytosis.[11] Trans-sphenoidal excision followed by a proper histological diagnosis and long-term anti-TB chemotherapy generally leads to a good outcome.

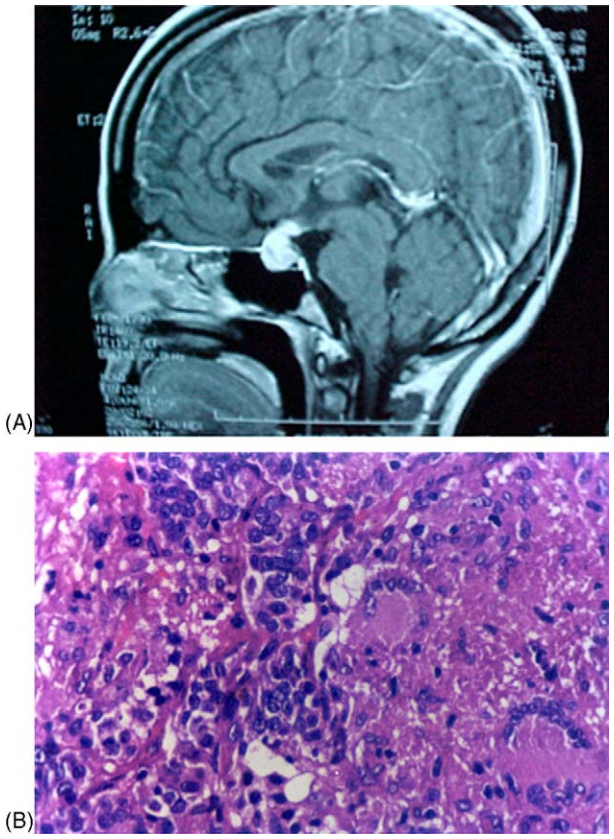

Figure 1 (A) Post-gadolinium sagittal MR image showing a sellar–suprasellar mass with marked heterogeneous enhancement of the mass and pituitary stalk. (B) High powered microscopic view (H&E staining, ×40) of the excised specimen showing dense aggregates of lymphoid cells with occasional plasma cells around a few ill-defined granulomas composed of epitheloid cells and Langhans-type multinucleated giant cells mixed with normal pituitary tissue on the left.

In conclusion, pituitary TB presenting as pituitary apoplexy is very rare. This is only the second case reported in the literature. A high index of clinical suspicion of pituitary TB is warranted in endemic areas, even when the patient presents with apoplexy-like symptoms.

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Corresponding Editor: Jonathan Cohen, Brighton, UK

24 April 2005

doi:10.1016/j.ijid.2005.05.008

Multidrug-resistant *Pseudomonas aeruginosa* infection in neutropenic patients successfully treated with a combination of polymyxin B and rifampin

Gram-negative bacillary infection remains a threat to patients who become neutropenic after treatment for a hematologic malignancy or stem cell transplantation, especially when the organism is resistant to multiple antibiotics. Between May and December 2003, we saw four cases of infection due to multidrug-resistant *Pseudomonas aeruginosa* (MRPA) susceptible in vitro only to polymyxin B. This drug acts synergistically in vitro with rifampin against multidrug-resistant Gram-negative bacilli, including *Pseudomonas aeruginosa*.[1,2] In a previous study, eight out of 12 patients who were infected by multidrug-resistant *Serratia marcescens* were cured by this antibiotic combination.[3] We therefore decided to try this treatment for two cases of MRPA.

Patient A developed phlebitis and cellulitis accompanied by high fever during the recovery phase of neutropenia, and MRPA bacteremia was detected (Table 1). Treatment with polymyxin B (1.0 mg/kg IV q12h) and rifampin (10 mg/kg IV q12h) was commenced. Within a few hours she was admitted to the ICU due to septic shock and respiratory failure resembling acute respiratory distress syndrome, which necessitated mechanical ventilation. Blood culture yielded MRPA 24 hours after starting therapy but was sterile thereafter. The phlebitis resolved, and she was weaned off vasopressors and mechanical ventilation 12 and 14 days later, respectively. This antibiotic combination was administered for 19 days and was well tolerated.

Patient B had extensive cellulitis of the scalp with high fever while being severely neutropenic. A specimen of pus yielded MRPA on day 10. Polymyxin B (1.0 mg/kg IV q12h) and rifampin (10 mg/kg IV q12h) were prescribed. The high fever and scalp infection resolved. Granulocytes recovered on day 17 of granulocyte colony-stimulating factor (G-CSF) therapy. The antibiotic combination was administered for 21 days.

Treatment was well tolerated and toxicity was reduced by employing saline hyperhydration (3 L/m^2) in both cases, even though its protective effect has not been proven. Previous studies of critically ill patients have also shown a good tolerance for polymyxin B.[4,5] In both cases there was a transient elevation of bilirubin up to 6 mg/dL during rifampin administration that was reversed after the end of the treatment.

The duration of polymyxin B–rifampin combination therapy in this setting should be based on hematological recovery, clinical response, and microbiological results.

These results suggest that the combination of polymyxin B–rifampin is worth exploring further for treating neutropenic patients who develop infections due to multiply-resistant *P. aeruginosa*.