Computed tomography (CT) head reveals punched out lesions in the frontal and parietal bones. Magnetic resonance imaging (MRI) may show the presence of adjacent soft-tissue changes in the form of abscesses or intramuscular collections. Isolation of the bacilli is quite diagnostic, which is not possible many a time. Surgery and anti-tubercular therapy are the mainstay of treatment. We are reporting a case of calvarial TB on account of its rarity and difficulty in diagnosis.

**Case Report**

The present case report is about a 40-year-old male patient presented with the complaints of swelling in the right temporal region for 4 months. On detailed evaluation, he gave a history of dental infection leading to tooth extraction following which the swelling started. In addition, he also complained of holocranial headache of 15 days duration. On examination, the swelling was 3 × 3 × 4 cm in size and was non-pulsatile, soft and fluctuant with ill-defined and diffuse borders. A small defect was palpable in the right parietal bone posterior to the swelling. At 24 h after admission, he developed sinuses over the swelling that were discharging pus. CT head revealed a defect of size 2 × 2 cm in the right parietal bone with irregular margins and the defect was involving both the inner and outer tables. The bony edge was undermined with an extradural collection of size 0.5 × 0.5 cm [Figure 1a and b]. There was a collection within the right temporalis muscle and an extradural heterointense lesion below the bony defect [Figure 2a and b]. However there was a collection within the right temporalis muscle and an extradural heterointense lesion below the bony defect [Figure 2a and b].

**Introduction**

Reid first reported calvarial tuberculosis (TB) in 1842. Cranial and epidural TB are infrequent manifestations of extrapulmonary TB. There have been isolated reports of calvarial TB due to direct extension from a nearby focus of infection. About 75-90% of patients suffering from calvarial TB come under the age group of 20-30 years. It usually involves the frontal and parietal bones due to the greater amount of cancellous bone with diploic channels in these bones. It usually begins in the diploic space and affects the inner and outer table equally. If the outer table is affected they present as subgaleal swelling with discharging sinuses. On the other hand if the inner table is affected by and large, it leads to deposition of extradural granulation tissue. This extradural granulation tissue may increase in size and cause neurological deficits depending on its magnitude. The diagnosis relies upon a good clinical acumen and timely radiological investigations. X-ray and computed tomography (CT) head reveals punched out lesions in the frontal and parietal bones. Magnetic resonance imaging (MRI) may show the presence of adjacent soft-tissue changes in the form of abscesses or intramuscular collections. Isolation of the bacilli is quiet diagnostic, which is not possible many a time. Surgery and anti-tubercular therapy are the mainstay of treatment. We are reporting a case of calvarial TB on account of its rarity and difficulty in diagnosis.
no evidence of intracranial extension. Bone scan of the patient was done and showed increased uptake in the right parietal bone suggestive of osteomyelitis. However as it could be either pyogenic or tubercular in etiology, a detailed evaluation for TB was undertaken. His chest X-ray showed a well-defined opacity in the right upper lobe. Erythrocyte sedimentation rate (ESR) was 60 mm at the end of 1st h and Mantoux was positive. TB interferon gamma was done and was positive. Since he had a discharging sinus and a temporal collection he was posted for surgery. A right sided reverse question mark incision was made exposing the temporalis muscle and the defect in the right parietal bone. A large portion of the temporalis muscle was replaced by necrosed tissue and pus [Figure 3]. The pus was extending inferiorly to involve the temporalis muscle below the zygoma. Thorough debridement of the devitalized tissue was done. The defect in the parietal bone was nibbled all around and sent for histopathological examination. There was granulation tissue located extradurally just beneath the defect. It was scooped out and sent for biopsy. After debridement, saline and betadine irrigation was done and the wound closed. Patient was started on antitubercular therapy with isoniazid, rifampicin, pyrazinamide and streptomycin as he was not receiving any antibiotics prior to surgery. Microscopy was negative for Grams staining and cultures were sterile. Histopathology report came as caseating granulomas with epitheloid cells, Langhans giant cells with acid fast bacilli seen. Post-operative period was uneventful. Sutures were removed on the 7th post-operative day and patient was discharged. At a follow-up of 4 weeks, patient has no swelling and the wound is well-healed.

Discussion

TB continues to be one of the greatest health problems in developing countries. Calvarial TB constitutes amongst a rare disorder even amongst the communities with high incidence of TB. It constitutes 0.1-3.7% of the skeletal TB.[7] Most cases are secondary to pulmonary TB, however direct spread from paranasal sinuses and mastoid air cells have been reported. Absence of lymphatic spread from a primary focus accounts for the rarity of calvarial TB as the skull is devoid of lymphatics.[8] After their colonization in the cancellous and diploic spaces of the skull, further development depends on the virulence of the organism and host resistance. The infection causes capillary obliteration and replacement of bony trabeculae by granulation tissue proliferating fibroblasts.[9] The outer table is destroyed first, though eventually both the tables are affected. Duramater is highly resistant to their invasion and hence most of the lesions are found extradurally. However calvarial TB with intradural involvement is occasionally observed in the form of subdural empyema, meningitis or tuberculomas. In our patient, the temporal sequence of events is largely speculative as no histopathology or antimicrobial culture report of the extracted tooth was available to substantiate...
Calvarial tuberculosis includes surgery and antitubercular therapy. Most patients respond well to antitubercular therapy and surgical drainage if necessary. Provided with good clinical acumen, radiological findings, and prompt treatment, most of these patients respond well.

References


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