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Primary tuberculous osteomyelitis of skull presenting as scalp swelling. A rare case

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Abstract

Background: Tuberculosis in common in developing countries but involvement of skull bone is very rare Incidence of tuberculosis in skeletal system is less than 1 percentage (1, 2, 3). Out of the bone involvement most of them are weight bearing bones however flat and skull bone involvement is very rare.

Case presentation: An 18-year-old male presented with headache and swelling over the right temporal region for 15 days. MRI brain contrast was suggestive of lesion hypointense on T1 and Hyperintense on T2 with surrounding ring enhancement present and portion of lesion extending transcranial to outer surface of bone under the scalp. The patient underwent excision of the tumour along with Antitubercular therapy.

Conclusion: All patients with Scalp swelling with intracranial extension must be suspected of tuberculous osteomyelitis and related investigations and MRI should be done.

Keywords
tuberculous, osteomyelitis, skull, scalp, swelling

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Background

Tuberculosis in common in developing countries but involvement of skull bone is very rare Incidence of tuberculosis in skeletal system is less than 1 percentage (1, 2, 3). Out of the bone involvement most of them are weight bearing bones however flat and skull bone involvement is very rare. As the skull bone is deficient with lymphatic supply, lymphatic spread from primary focus is very rare which explains why calvarial tuberculosis is a rare entity.

Case report

An 18-year male patient presented in Outpatient department with complaint of swelling over right temporal region for 15 days. On examination patient was vitally stable with Glassgow Coma Score of E4 V5 M6 and rest of the neurology was normal. On local examination patient had about 6 cm × 8 cm firm, ovoid shaped, compressible, non-

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fluctuant, non-trans-illuminant swelling was present over right temporal region [Fig 1] with overlying skin normal.

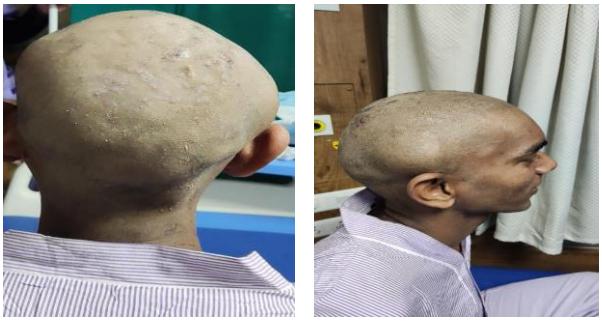

Figure 1. A and B showing inspection findings of the swelling from behind and right side.

On Radiological investigation, MRI brain contrast was suggestive of lesion hypointense on T1 and Hyperintense on T2 with surrounding ring enhancement [Fig 2] present and portion of lesion extending transcranial to outer surface of bone under the scalp. The chest x-ray was normal.

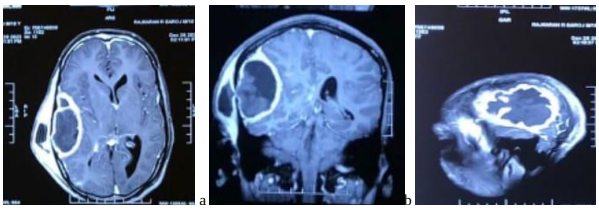

Figure 2. A, B and C shows rim enhancing lesion on MRI contrast films in axial, coronal and saggital sections respectively

Based on the radiological findings, provisional diagnosis of Meningioma was made with few other differential diagnosis kept in mind like tumors arising from the bone, epidermoid and chordoma. The Patient underwent excision of the tumor. Intraoperatively tumor was found to be extradural arising from the skull bone with solid and cystic components with cystic component containing purulent material. Whole tumor along with the involved part of the bone was excised and specimen was sent for histopathology[Fig 3]. The Purulent material was sent for microbiological examination. The Microbiological examinations and gene expert results came out to be negative. Histopathological examination showed a picture of tuberculous osteomyelitis.

Patient was started on antitubercular therapy as per the weight band. Patient was discharged and is kept on regular follow up with further plan to cover the skull defect with an exogenous graft material.

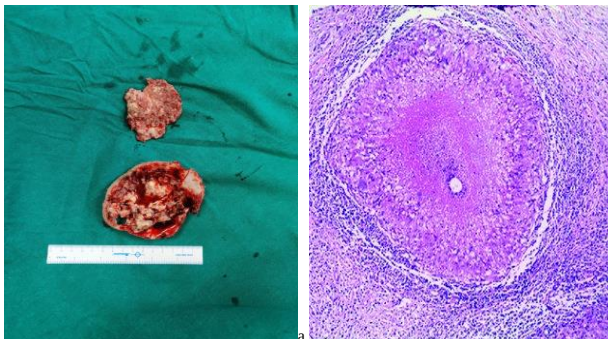

Figure 3. A and B shows gross specimen and microscopic picture on histopathological examination of the excised tumor respectively

Discussion

Tuberculosis of skull is very rare and estimated to occur in 0.01% of patient infected with mycobacterium tuberculosis (4). The incidence rate of tuberculosis skull is 0.2–1.3% among the skeletal tuberculosis (5). Isolated calvarial TB is rare and most cases are secondary to either pulmonary TB, TB osteitis in other bones or widespread Tuberculosis. The disease may present with painless scalp swelling, discharging sinuses, seizures, meningitis, headache, motor deficits, etc.

The common presentation of the skull tuberculosis is a discrete, round or oval, and solitary lesion in the frontoparietal region. Antitubercular therapy, and appropriate surgical intervention are the mainstay in the management of the calvarial tuberculosis. A few studies suggest that antitubercular treatment is alone sufficient (6). However other studies state that surgical intervention in addition to ATT is necessary because the diseased bone might be the source of bacilli and removal by surgical excision may be required to achieve a cure. (7, 8).

In our case, patient presented with only complaint of swelling over right temporal region for 15 days. The Neurological and systemic examination was found to be Normal. There were no other features suggestive of Tuberculous source elsewhere in the body. The patient underwent excision of the lesion and biopsy. Intraoperative findings were consistent with inflammatory pathology. Histopathological diagnosis of

Tuberculous Osteomyelitis of the skull was made. Patient was started on antitubercular therapy as per the weight band. Patient was discharged and is kept on regular follow up with further plan to cover the skull defect with an exogenous graft material.

Conclusion

Tuberculosis of the skull is a rare entity but is curable if presented in early symptoms. In that case the prognosis is good. TB lesions producing mass effects requires urgent surgical intervention. Post-operative ATT is a must according to RNTCP.

Abbreviations

TB- Tuberculosis;
ATT- Anti Tubercular therapy;
RNTCP- Revised National Tuberculosis control program.

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