

Osteoclastoma of Occipital Bone

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Osteoclastoma of the calvarial bone of membranous origin is a rare entity. This paper presents a case of osteoclastoma of the occipital bone and a brief review of literature.

Key Words : Giant cell tumor, calvarial tumor, osteoclastoma, occipital bone

Osteoclastoma is also referred to as giant cell tumor. It is a benign tumor potentially malignant and usually encountered in the short or long cartilaginous bones at the epiphyseal-diaphyseal level.

It is very rare in the calvarial bones. Jelsma(1959) reported no osteoclastoma of skull bone in his monograph on primary tumors of the calvaria, nor did Lichtenstein and Jaffe(1949) in their studies of giant cell tumors. Doderlein described the first well-authenticated case in 1913, while two doubtful cases were recorded by Lutz in 1990 and Nicloulai in 1912. Since then, only a few cases have been reported. Petrous temporal bone tumor has been described by Essamma (1962), Jamieson(1969), Lord and Stewart(1943), Arseni et al(1975), Pancoast (1940) and Rowbotham(1952). The giant cell tumor of the sphenoid bone has been reported by Pitkethly and Kempe(1969), Geissinger et al(1970) and Derome(1972). We could find only four cases of occipital bone involvement documented by Troell(1930), Arseni et al(1975), Motomochi et al (1985) and Henderson et al(1988). In this paper we report a possible fifth case of osteoclastoma of occipital bone.

CASE REPORT

A 12-year-old boy was admitted with a history of characteristic triad of symptoms-headache, vomiting and diminution of vision. There was a swelling in the right occipital region and right-sided ataxia. There was no significant history of trauma, fever or ear discharge. Neurological examination revealed Glasgow coma scale score as 15 with right-sided cerebellar signs, nystagmus, infranuclear 7th and also 8th nerve palsy. Fundus examination showed bilateral papilledema. The occipital region had right-sided nontender bony swelling. Skiagrams of the skull(Fig. 1) showed a heterogeneously calcified mass in the right half of occipital bone. Computerized brain scan(Fig. 2) demonstrated a mixed, attenuating, nonenhancing well-defined lesion of occipital bone on the right side with obstructive hydrocephalus. Right Lentriculo-peritoneal shunt, followed by near-total removal of the tumor via suboccipital craniectomy in second stage was performed. The lesion was firm, relatively avascular and cystic. In places it was found adherent to the duramater. The histopathological examination of the specimen showed numerous multinucleated giant cells in the vascular stroma of spindle cells, suggestive of osteoclastoma(Fig. 3). The postoperative phase was uneventful, and he was discharged after two weeks of hospital stay with marked improvement in his neurological status.

Received August 16, 1990

Accepted March 18, 1991

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DISCUSSION

Historically, at first osteoclastoma was thought of as a malignant tumor termed giant cell sarcoma. A complete cure was achieved after adequate surgical excision which dismissed its inclusion in the malignant group; so, it was classified under benign cell tumor. The few local recurrences after surgery and

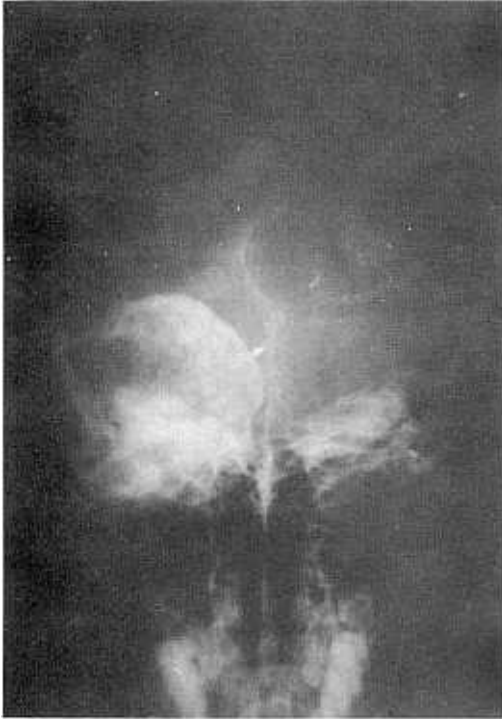


Fig. 1. Radiograph of the skull showing clarified lesion of occipital bone.

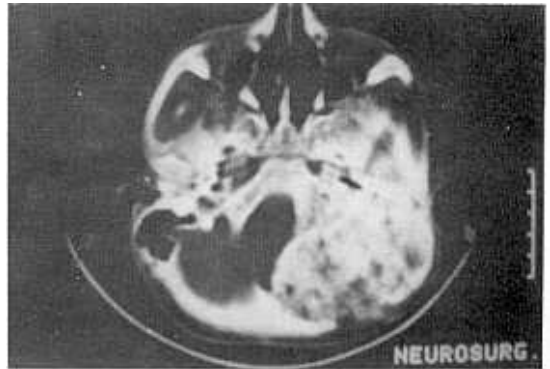


Fig. 2. CT scan demonstrating mixed attenuating lesion of right occipital bone.

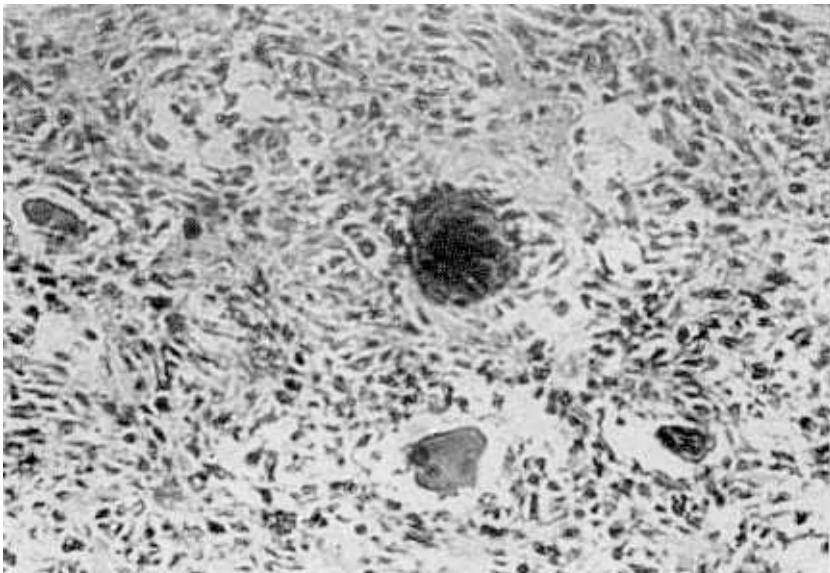


Fig. 3. Histological section showing giant cells with dense polymorphous cells (H & E, $\times 160$).

irradiation, or distant metastases again indicated it might have malignant potential.

It is found in the cartilaginous bones, hence supposedly developed from cartilaginous cells (Geissinger *et al.* 1970). Its occurrence in membranous bones is unexplained. Many hypotheses have been postulated including presence of aberrant cells and the occurrence of metaplasia at local primitive connective tissue. Similarly, its giant cell origin is also disputed (Pitkethy and Kempe 1969). Histology shows numerous multinucleated giant cells resembling the osteoclastic or megakaryocytic cells of bone marrow in a vascular stroma of spindle-shaped cells.

These later show mild nuclear pleomorphism and moderate numbers of mitoses. There are some scattered areas of fibrosis, but, apart from these, there is little evidence of collagen formation from the tumor cells. A few areas of new bone formation are seen, but this is not a characteristic feature of the lesion. Jaffe(1958) classified them into three groups depending upon microscopic features and number of the giant cells. Recurrence is an unusual finding after total surgical extirpation. Distant metastasis is rarely reported in lungs(Jaffe 1958).

Radiogram shows osseous rarefaction, mild expansion and localised cystic formation without neoformative process. The choice of treatment would be radical excision of the lesion until normal bone is reached. Incomplete resection results in recurrence and requires another operation. If the limit of the tumor is indefinite and impossible to completely remove, It should be excised as much as possible, leaving the rest to be treated with irradiation.

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