Case Report: Intracranial Osteochondroma

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Introduction

Intracranial osteochondromas are benign tumors composed of mature hyaline cartilage with focal ossification that can reach well-defined, large sizes with a slow growth pattern [1]. Osteochondromas account for 10% to 15% of all bone tumors and 20% to 50% of benign bone tumors. Often found in the epiphysis of long bones such as the distal femur, proximal tibia, and proximal humerus [2]. However, intracranial osteochondromas are relatively rare and the literature only consists of sporadic case reports. Intracranial osteochondromas constitute 0.1-0.2% of intracranial tumors. While the majority of intracranial osteochondromas arise as extradural from the mid-skull base, they may occasionally manifest intradurally from the dura mater of the convexity or falx cerebri [3, 4]. When these tumors develop as supratentorial, the parafalcian frontoparietal location is the most common site [5].

Case Report

A 25-year-old male patient with 3 months history of headache, radiological studies have shown an extra axial mass lesion in the left parietal region, which sized 42x44 mm including intense calcification areas with a large dura base with features suggestive of menengioma (Figures 1, 2 and 3). The headache complaint of the patient was accompanied by dizziness and speech disorders. Neurological examination revealed no pathology. In the differential diagnosis with the imaging of the patient, intralesional calcified cavernous hemangioma, various osteomatosis lesions, sarcoma, fibrous dysplasia and metastasis were considered. The patient underwent operation and the left frontal osteoclastic craniotomy was applied 1 cm lateral of midline with the Midas rex surgical drill. It was seen that the tumor was attached to the dura mater and the bone. Bipolar and micro scissors are used to free the circumference of the tumor. The mass was removed en bloc with the bone (Figures 4, 5). Then the tumor was separated from the bone and the parts where the bone was invaded by the tumor had been removed with the Midas rex drill. Pathology of the tumor was reported as osteochondroma. The control CT taken in the postoperative follow-up of the patient showed total removal of the mass (Figure 6). Preoperative and postoperative radiological images of the patient and preoperative tumor images are shown below.

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Discussion
Osteochondromas are the most common tumors of the bone that occur anywhere in the body, but are rare in the skull. In the etiology of cranial osteochondroma trauma or inflammation is prominent. Intracranial osteochondromas may occur at any age but we encounter the third decade with these tumors [6]. The symptoms of the disease are usually due to tumor mass [7]. Approximately 15% of intracranial osteochondromas arise supratentorially, typically attached to falx cerebri in frontoparietal region. It has been reported...
that these tumors originate from the cranial nerves, the ventricular walls, and the choroid plexus [8]. Although it is not easy to distinguish meningioma osteochondroma from preoperative Neuroimaging studies, a tumor other than conventional meningiomas should be considered as osteochondromas because of the vascular nature of these tumors, especially can be seen in the CT angiography. The features that support the diagnosis of meningioma include more homogenous contrast enhancement and a dural tail. A more characteristic feature of osteochondromas is the hyperostosis and absence of edema in surrounding tissues [6]. Complete surgical excision of the tumor is considered the gold standard for extra cranial osteochondroma treatment. Venkata, et al. reported that osteochondromas of the skull base can relapse due to incomplete resection [7]. The incidence of malignant transformation of osteochondromas is 1%, while it is reported to be 0.5-5% of multiple osteochondromas. Based on this, intracranial osteochondromas are mainly benign lesions; the risks of radical resection and the risk of future recurrence or malign transformation must be carefully discussed [8].

**Conclusion**

Osteochondromas prognosis is excellent after complete surgical resection. And no recurrences have reported after total resection. Intracranial osteochondromas are rare, but should be included in the differential diagnosis of intracranial extraxial tumors exhibiting atypical calcification patterns. Although the long-term outcome of intracranial osteochondromas remains unclear due to the lack of previous data, the risk of total resection should be carefully examined against the chance of relapse according to the benign nature of the disease.

**References**


