IJMS
Vol 32, No 3, September 2007

Case Report

Giant Chondroma of Falx: A Case Report

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Abstract
Chondromas are benign tumors that may be found in many parts of the body. Among intracranial neoplasms, tumors of cartilaginous origin are rare. It has been shown that most of these tumors arise from the skull base. Their occurrence in other parts of the intracranial cavity is unusual. Chondroma of falx is a rare neoplasm. In this report we introduce a case of falcine chondroma arose from frontal midline area in a 17-year-old boy.
Iran J Med Sci 2007; 32(3): 185-187.

Keywords ● Chondroma ● intracranial ● brain neoplasms

Introduction

Chondroma is a benign cartilaginous tumor, which can be found in different parts of the body. Among these, intracranial chondromas are rare and represent 0.2-0.3% of all intracranial tumors.[1] Most of the intracranial chondromas arise from the base of skull.[2] Chondroma of the other parts of skull are extremely rare and have been reported in the frontoparietal,[3] intraventricular, or parasagittal regions.[4] Convexity dural chondroma was first reported in 1851 by Hirschfeld. Since then 19 cases have been reported.[4]

They are characterized by their large size. They are slow growing and complete surgical resection is the treatment of choice if the location is suitable for total removal. Long term prognosis is favorable and no recurrence has been reported.[4]

Herein we present an intracranial falcine frontal chondroma in a 17-year-old boy.

Case Report

A 17-year-old boy presented with 2 months history of headache, which was worse in the morning. No additional symptom such as seizure or diplopia was present.

Neurological examination showed normal consciousness and orientation. His speech was normal, and his mood and affect were unremarkable.

Cranial nerve, motor, and sensory examination were also normal.

There was no abnormality in the cerebellar function. Frank bilateral papilledema was noted in the funduscopy secondary to pressure effect.

Laboratory data were in normal range. Brain computed tomography (CT) and magnetic resonance imaging (MRI) showed a large well-marginated mass with calcifications in the midline of the anterior cranial fossa (figures1, 2).

Bifrontal craniotomy was done and the tense dura over the tumor was opened. A cartilaginous avascular tumor originated from the falx was observed and removed totally.

Macroscopic examination of the tumor showed a well defined tumor measuring 5×5×4 cm with cartilaginous texture.

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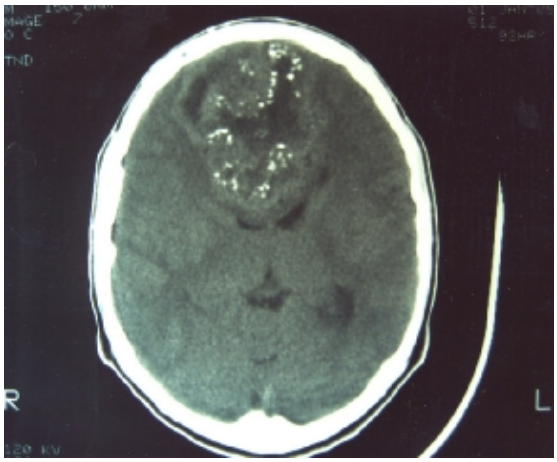

Figure 1: Axial computed tomography with contrast showed a huge well-defined mixed density and lobulated soft tissue mass with multifocal calcifications in falcine region of frontal lobe.

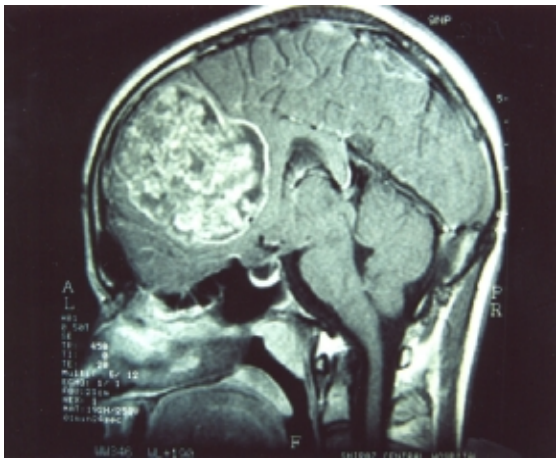

Figure 2: Sagittal post-contrast T1-weighted MRI showed a large heterogenous enhancing mass in the midline of frontal lobe.

Microscopic examination revealed low cellular hyaline cartilage. The chondrocytes were arranged in groups with only one cell in a lacuna. There was no pleomorphism (figure 3).

The patient's postoperative course was uneventful and he was discharged from the hospital on the 7th postoperative day. The patient is well after 6 months follow-up.

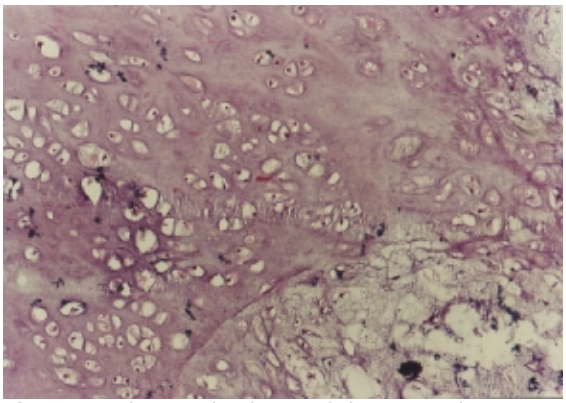

Figure 3: Microscopic picture of the tumor shows normal hyaline cartilage with no evidence of malignancy (H&E ×250).

Discussion

Intracranial chondromas are rare lesions that account for less than 1% of all intracranial tumors.[5]

Most of such tumors originate from the base of skull at the sphenoethmoidal and sphenooccipital regions. Less frequently these tumors arise from extraskeletal locations such as dura mater, choroid plexus, and brain parenchyma. They can be solitary, or a component of Mufucci or Ollier's disease.[6]

There is a general agreement that tumors arising from skull base originate from cartilaginous remnants,[6] but the pathogenesis of extraosseous chondromas is controversial. Some reports believe that these tumors originate from chondroid metaplasia.[7-9]

Solitary intracranial extraskeletal chondromas are equal in both sexes and are mostly seen in 20-60-year olds with the peak age around the third decade.[10]

Intracranial chondromas are characterized by their large size at presentation. Since the tumors are slow-growing, the symptoms may not appear for many years. Seizure and symptoms of increased intracranial pressure are the frequent manifestations. The tumors of the presented cases also probably developed at a very slow rate for many years, producing no clinical symptoms.

Computed tomography shows that intracranial chondromas are well-circumscribed extra-axial lesions with diffuse or globular calcification.[1] Chondromas of the falx can be difficult to be distinguished from meningioma or calcified extra-axial hematoma. However, meningioma usually display intense, homogenous contrast enhancement.[11]

The significance of this reported case is the low incidence of extra osseous falcine chondroma and also its occurrence in a young (17-year-old) patient. In the 19 previously reported cases, only two cases were below 20 years old and the youngest reported case till now had been 16 years old.[4] Meanwhile chondroma in our case has been a large tumor (5×5×4 cm) that had caused long term headache in the patient.

According to the pathology, chondromas should be differentiated from chondrosarcomas. Chondrosarcomas demonstrate hypercellularity, cytologic atypia, mitotic activity, and more than one nucleus per each lacuna as malignancy criterion. The chondromas in Ollier disease and Mufucci syndrome may demonstrate a greater degree of cellularity and cytologic atypia and

may be difficult to be distinguished from chondrosarcomas.[6]

Treatment of these lesions is complete surgical removal and the long term prognosis is good. Local invasion or recurrence should raise the possibility of malignant degeneration into chondrosarcomas.[12]

Most of the reported cases as ours had a good postoperative course with no complication and no recurrence.[12]

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