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Case Report

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Primary Intracerebral Classical Chondrosarcoma: Case Report

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Abstract

Chondrosarcomas where located intracerebral space are very rare malignant that produce malignant cartilage and slow-growing. Intracerebral chondrosarcoma was first reported in 1899 and the chondrosarcoma constitutes 0.15% of all cranial tumors. These tumors usually originating from the skull base and compression of local structures. From a histological point of view, chondrosarcomas are classified into three groups as grade 1 well-differentiated (classical type), grade 2 intermediate (myxoid type), and grade 3 (mesenchymal type). We report a case; which the tumor originated from parasagittal region presentation. In the literature, there are only 3 reported cases of primary intracerebral chondrosarcoma. We suggest that chondrosarcoma treatment of radical surgery is the gold standard for reducing the recurrence rate.

Keywords: Intracerebral Chondrosarcoma; Classical Chondrosarcoma; Neoplasm

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Background

Primary chondrosarcomas of the central nervous system are uncommon lesions. These tumors are slow-growing, infiltrative neoplasms and assumed to develop from notochordal remnants [1]. The most common presenting symptoms are headache, diplopia, and cranial nerve involvements [1].

We present a case of intracranial chondrosarcoma presenting as a huge parasagittal region location intracerebral and discuss this rare neoplasm in the light of the relevant literature.

Case Presentation

The case was a 63-year-old male patient who had undergone surgery for an intracranial tumor at another hospital. Five years after the first surgery, When he had the complaints of weakness and numbness started in the lower extremities and had focal seizures, he applied to us. On admission, the left lower extremity was 4/5 motor strength. Radiological imaging showed a heterogeneous tumor with dense calcifications and a craniotomy defect in the parasagittal region (Figure 1). The patient was reoperated and gross total excised (Figure 2). In post-operative discharge, the patient's lower limb deficits improved. Pathology was reported as chondrosarcoma grade 1/3 and p53 was positive. Immunohistochemistry revealed negative staining with keratin, CD31, EMA, S100. Additional treatment, such as chemotherapy and radiotherapy, was not required.The patient is currently being followed up with no recurrence has been detected.

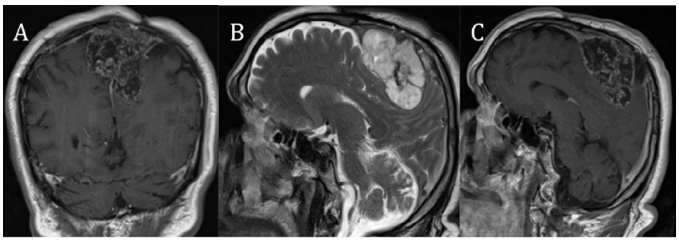

Figure 1: Preoperative T1-weighted (A), T2-weighted (B) and postcontrast T1-weighted axial MRI study revealed resection of the tumor. MRI showed a large parasagittal region with tumor calcification.

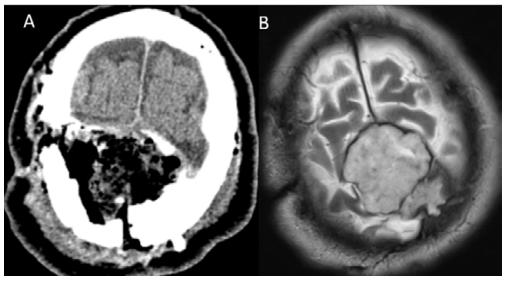

Figure 2: Preoperative CT axial (A) and Postperative T2-weighted MRI axial (B).

Outcomes and Implications

The first case of intracranial chondrosarcoma was reported by Mott in 1899[2]. Since then, primary chondrosarcomas of the central nervous system are uncommon lesions. chondrosarcomas constitute approximately 0.1%-0.16% [3] of all primary intracranial tumors.

These tumors are slow-growing and infiltrative neoplasms which assumed to develop from notochordal remnants [1]. Intracranial chondrosarcomas usually show as progressively enlarge resulting in compression or invasion of local structures within the cranium and they are usually avascular and calcified tissue [4,5].

Although some authors found sex dominance indicated female [6], some authors found their cases more common in male patients [7,8].

So there is no clear consensus on sex dominance. In generally, the mean age of presentation is on 4-5 decades and clinical symptoms are may include headache, vomiting, confusion, seizure similarly the increased intracranial pressure.

They usually arise at the skull base from the cartilaginous synchondroses and the pluripotential mesenchymal cells of the overlying dura mater, but occasionally from the meninges along the falx cerebri, tentorium, and cerebral convexity as a result of metaplasia of meningeal fibroblasts [9,10]. Chondrosarcomas are located in the petrous bone (37%), in the occipital bone (23%), in the sphenoid bone (20%), and in frontal, ethmoidal and parietal bones (14%) [11]. In literature reviews show that intraparenchymal tumors originate from pia-arachnoid cells of the Virchow-Robin spaces of intracerebral vessels [10].

From a histological point of view, chondrosarcomas are classified into three groups as grade 1 well-differentiated (classical type), grade 2 intermediate (myxoid type), and grade 3 (mesenchymal type) [11,12]. These histologic variants are based on the histologic architecture and differ in clinical presentation and prognosis. Chondrosarcomas have a predominance in the second and third decades and both genders are affected equally [13,14]. Although metastasis is rare, mesenchymal (malignant) chondrosarcoma which is the most aggressive subtype sometimes tends to spread to distant areas [11,15].

The skull base is the frequent localization of chondrosarcomas; consequently, the most common presenting symptoms are headache, double vision, and cranial nerve involvements [1].

To our knowledge, there are only 3 reported cases associated with primary intracerebral chondrosarcoma without intracerebral hemorrhage. Marshman et al reported a case of a 17-year-female with temporoparietal mesenchymal chondrosarcoma [1]. Chaskis C, et al. (2002),identified frontal myxoid chondrosarcoma in a 69-year-old male [16]. Parker JR, et al. (1989),reported a case of in a 14-year-old girl with an intracerebral mesenchymal chondrosarcoma [13].Finally, We report as the fourth case of grade 1 type chondrosarcoma originating in a non-skull base.

In brief intracranial chondrosarcomas are rare malignant tumors. Although chondrosarcoma has been known for many years, it still treatment options include complete tumor removal [17] with or without radiosurgery, stereotactic radiotherapy, and fractionated radiotherapy [18]. In such cases, radical surgery is the gold standard for reducing the recurrence rate.

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Availability of Data and Materials

We obtained permission from the patient's family to use all the materials for this case report and all materials used belong to the archive of our own clinic in this case report.

Authors' Contributions

Pelin K -writing,original draft, Review & Editing,

Emre YM -writing,original draft, Review & Editing,

Memduh KA- Conceptualization, Writing - Review & Editing, Supervision.

All authors read and approved the manuscript.

Conflict of Interest

The authors declare that they have no conflict of interest.

Consest for Publication

We have written and verbal obtained consent to publish from the all patients and patient's familyfor this case report.

Ethical Approval

Not applicable.

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