

## Case Report

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# Isolated chondrosarcoma of frontal sinus

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### Abstract:

*An uncommon case of chondrosarcoma involving frontal sinus is presented. Pertinent literature is reviewed to emphasize the management of this tumor at unusual site.*

**Key words:** Chondrosarcoma, Frontal sinus.

### Introduction:

Chondrosarcoma is an uncommon malignant neoplasm of cartilaginous origin. Less than 10% of all cases of chondrosarcoma occur in the craniofacial region<sup>1</sup>. The first paranasal sinus chondrosarcoma was reported by Mollison in 1916 in Freedman pathology. Chondrosarcoma of the craniofacial region may arise from any bone, cartilage, or soft-tissue structures but usually involve the mandible, maxilla or cervical vertebrae<sup>2</sup>. We hereby present a case-report of chondrosarcoma originating in the right frontal sinus. Although unusual in its presentation,

the case is illustrative in its clinical, radiological and histological presentation.

### Case report:

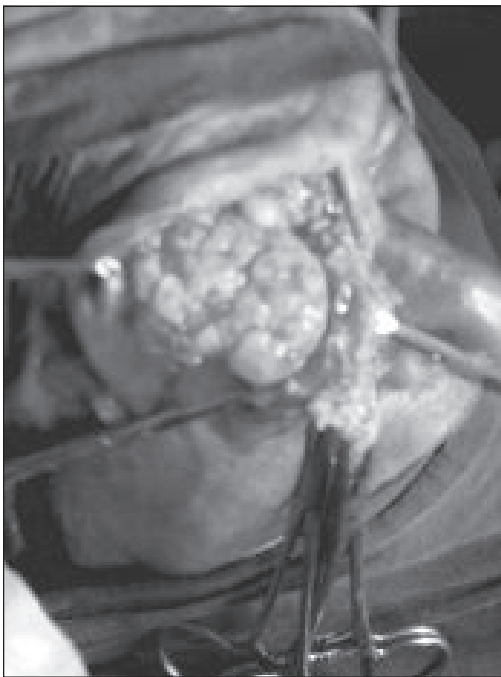
A 48-year-old farmer presented to the department of Otorhinolaryngology - Head & Neck Surgery, Medical College, Kolkata with the symptoms of swelling over right forehead for five months. Swelling was insidious in onset, progressively increasing in size, was not associated with any pain. His medical history was unremarkable. On examination, the swelling was hard in consistency, non-tender, 6cm x 4cm, non-mobile. The skin over the swelling was intact. Anterior and posterior rhinoscopy revealed no abnormality. There was no cervical lymphadenopathy. C.T. scan of the nose and para-nasal sinus revealed heterogeneous opacity in the right frontal sinus, with expansion of both the anterior and posterior walls. Areas of curvilinear calcification were noted within the mass. Right supra-brow incision was given and osteoplastic flap was raised to expose the sinus. The mass was meticulously dissected from the surrounding bone. The resected specimen showed a large pink lobular mass filling the frontal sinus. The tumor was hard with numerous calcifications. Microscopic examination showed that the tumor was

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**Figure 1:** C.T. scan of the nose and paranasal sinus revealed heterogeneous opacity in the right frontal sinus.



**Figure 2:** Showing the tumor during surgery.

composed of lobules of chondroid matrix that infiltrated into the bone causing local bone destruction. Cellular features were suggestive of low grade chondrosarcoma. The patient has been free of disease for the last one year and continues to undergo regular follow up examination.

#### **Discussion:**

Although most chondrosarcoma tumors arise from cartilaginous or bony structures, they may also develop in soft tissues<sup>3</sup>. Less than 10% of all cases of chondrosarcoma involve the craniofacial region, accounting for less than 2% of all head and neck tumors<sup>1,3</sup>. The complaints and radiological picture of this patient is suggestive of some malignant tumor of the frontal sinus. This type of tumor is most commonly a painless mass that progresses to symptoms such as nasal obstruction, anosmia, impaired vision and dental abnormalities. In rare instances, it may also present with the swelling of cheek, and headache. Because of the rarity of chondrosarcoma, their epidemiologic risk factors remain poorly defined. The male to female ratio is 1.2: 1<sup>2</sup>. Most chondrosarcoma occur in patients younger than 40 years of age. The signal density of the chondroid is lower than that of the bone matrix, although region of bone density may be observed because of localized ossification. The extent of tumor in this patient is unusual and is attributable to the negligence and also due to delay in diagnosis of the tumor. Surgery is the treatment of choice in these patients. The prognosis is good for low and intermediate grade chondrosarcoma<sup>4</sup>. Tumor involvement at the resection margins is the only other poor prognostic sign<sup>2</sup>. The overall 5-year survival for low grade chondrosarcoma after complete resection is in between 55%-75%<sup>1,3</sup>. The most common cause of death is recurrence with local invasion of skull base<sup>2</sup>.

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