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Case Report

Bilateral Nasosinusian Chondroblastoma: Case Study and Literature Review

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Abstract

Chondroblastoma is a rare benign bone tumor, craniofacial localization is rarely reported in the literature. It accounts for 2 to 7% of all chondroblastomas. We report a case of nasosinusian chondroblastoma with bilateral involvement of the ethmoidal, sphenoidal and maxillary sinuses without lysis of the bones of the skull base. It was a 45-year-old patient, a housewife, who consulted us for a bilateral nasal obstruction with a clinical history dating back about six years, marked by a left unilateral nasal obstruction of progressive onset and permanent evolution, which bilateralized four months later. Other associated signs are bilateral rhinorrhea, anosmia, closed rhinolalia, and headache. Physical examination revealed swelling of the left cheek, regular, fixed, hard and painless contours. An endonasal mass completely obstructed both nasal cavities with a bulge of the palate. Maxillofacial CT revealed a bilateral, ethmoid and sphenoidal maxillary nasosinus mass of tissue density, osteolytic, containing lump-like calcifications of irregular outline. The surgical treatment, performed transpalatally in combination with the endonasal route, removed the entire mass. Histology concluded that there was a bilateral nasosinusian chondroblastoma. No recurrence after one year. Conclusion**:** Chondroblastoma is a rare tumor and its location in the head is extremely rare, difficult to detect at an early stage. Surgical excision is the therapeutic principle.

Keywords

Chondroblastoma, Tumors, Nasosinus

1. Presentation

Chondroblastoma is a rare benign bone tumor [1] that accounts for less than 1% of all primary bone tumors [2]. First described by Codman in 1931, it is most commonly found in the epiphyses or processes of long bones [1, 2]. It occurs during the first two decades of life and particularly affects men [3-5]. Craniofacial localization accounts for 2-7% of all

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chondroblastomas [6-8]. The sphenoidal and ethmoidal bones are more frequently affected than the maxillary bone [9]. The involvement of three sinuses in the same patient has only been reported once, and in this case, the three sinuses were the sphenoidal, ethmoidal, and frontal sinuses [10]. Nasosinus chondroblastoma often simulates other nasosinus tumor pathologies, the symptomatic boundaries remain unclear with these nasal sinus tumors. The lack of regular management of this condition due to its rarity is a source of misdiagnosis. A review of the literature in 2025 reported three cases of chondroblastoma of the skull base worldwide in 2025 [1]. Its osteolytic potential requires surgeons to reconstruct the defect after the mass has been removed. This case reports a case of nasosinusian chondroblastoma with bilateral involvement of the ethmoidal, sphenoidal and maxillary sinuses without lysis of the bones of the skull base. Through this observation, we wanted to highlight the diagnostic and therapeutic aspect and to take stock of the literature.

2. Case Report

It is a 45-year-old patient, housewife, who consulted us for a bilateral nasal obstruction evolving for 06 years of progressive installation and permanent evolution associated with bilateral rhinorrhea, anosmia, closed rhinolalia and retroorbital headache, without notion of epistaxis, without otologic signs. She had undergone an unsuccessful procedure that was not specified in a health centre.

During the physical examination, we noted a general condition with WHO Performance Index rated 01, swelling of the left cheek, hard and painless, regular contours, fixed non-flapping non-blowing. In a previous rhinoscopy, we noted an endonasal mass completely obstructing both nasal cavities and a hard palate bulge.

A maxillofacial computed tomography was performed and objectified a bilateral, ethmoid and sphenoidal maxillary nasal mass of tissue density, osteolytic, containing root ball calcifications, of irregular contour. Laterally, it has invaded the ethmoid plane with a more marked orbital extension on the right without any evidence of clear exophthalmos. Basically, it invades the soft and hard palate (Figure 1).

Surgical treatment was performed. The transpalatine approach combined with the endonasal approach removed the lump (Figure 2). Excision of the ethmoid mass was performed, and after excision, we noted an absence of bone lysis. No bone repairs were performed.

Histopathological examination of the surgical specimen revealed tumor proliferation consisting of layers of chondrocyte cells of variable size, sometimes large, with abundant and eosinophilic cytoplasm with broad, hyperromantic nuclei (Figure 3), resulting in the diagnosis of bilateral nasosinusian chondroblastoma.

Postoperative effects were simple. With a one-year follow-up, no recurrence was observed.

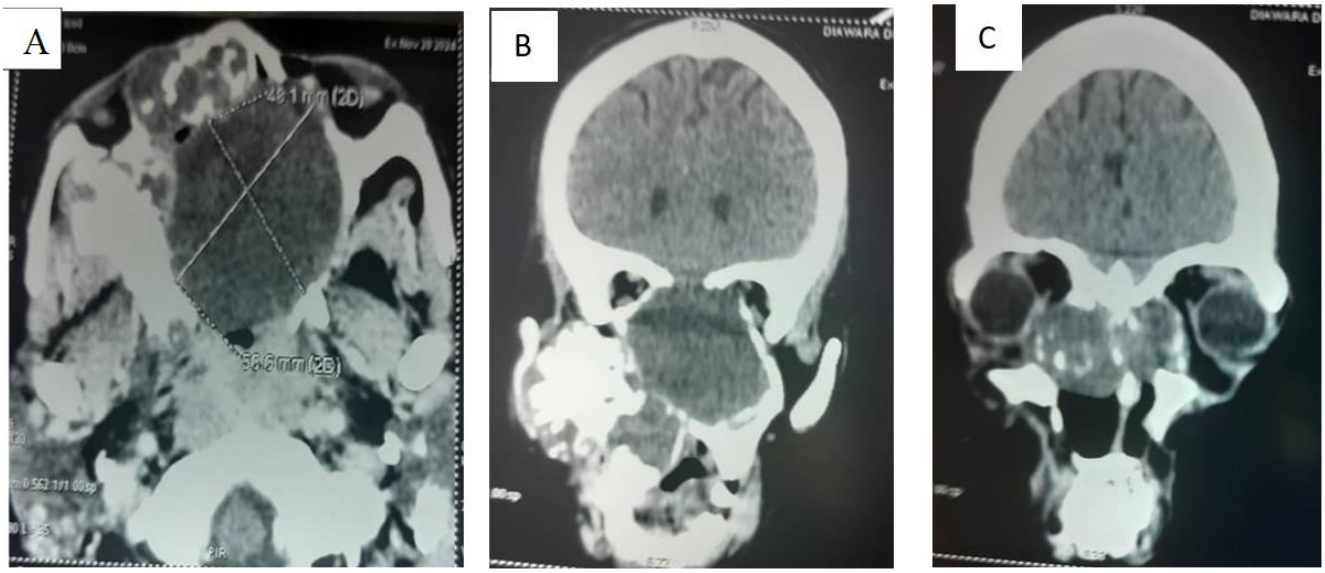

Figure 1. *CT images A. axial section: mass of tissue density taking the ethmoid cells and the 2 sphenoidal sinuses B. coronal section: mass of tissue density taking the two nasal cavities, the maxillary sinuses, the ethmoid cells C. Coronal section: showing microcalcifications in the root ball.*

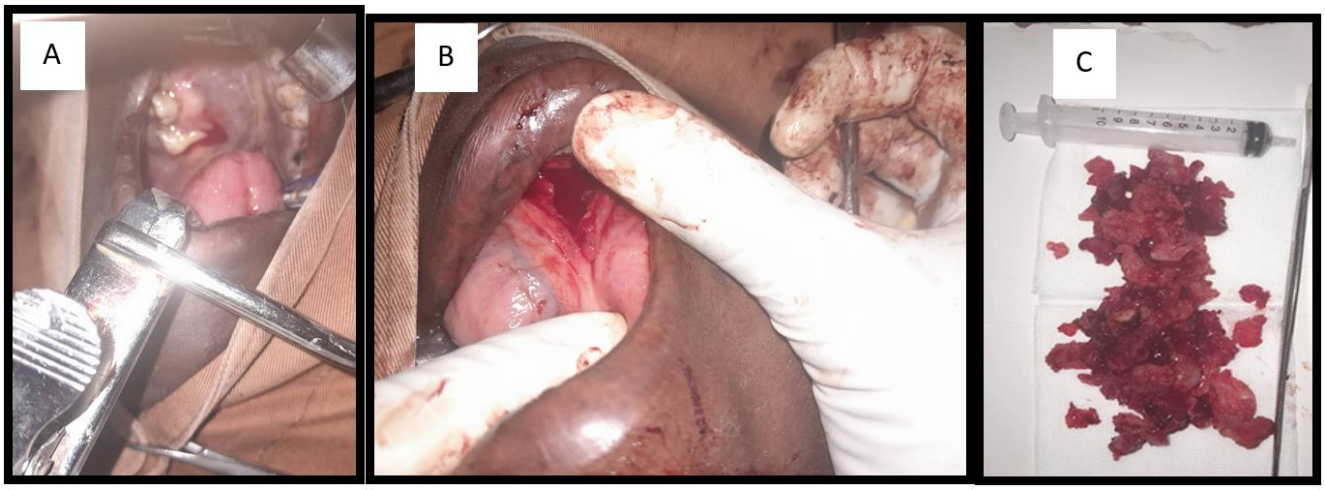

Figure 2. *Intraoperative image A. Palate exposure and evidence of a hard palate bulge B. Gingivovvestibular approach C. tumor tissue.*

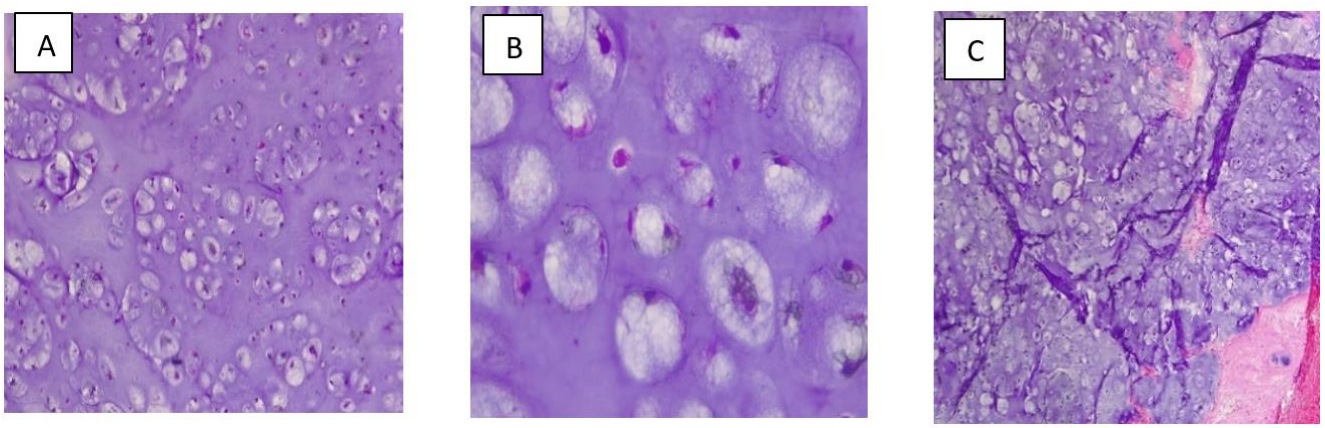

Figure 3. *Histological images A. low magnification, B. medium C. high of a chondroblastoma: The fragments of cartilaginous tissue examined show a tumor proliferation consisting of rounded or oval chondroblastic plaques without cytonuchral atypia. The nuclei are rounded, sometimes incised by a rare mitosis.*

3. Discussion

Chondroblastoma is a benign tumor that produces cartilage. It most commonly occurs in the epiphyses of growing patients. Its typical locations are the knee, ribs and pelvis. It usually occurs in the age group of 10 and 15 years, with a predominance of males. In cranial and temporal bone involvement, it occurs at older ages, usually between 40 and 50 years of age. It is a locally aggressive tumor [11]. Despite its locally destructive and recurrent nature, it is considered a benign tumor that rarely metastasizes [12]. In our case, the diagnosis was made at the age of 45 and there was a bilateral invasion of the ethmoid plane with extension to the orbits.

Chondroblastoma originating in the paranasal sinuses is difficult to detect at an early stage due to the lack of a positive clinical presentation [9]. All the paranasal sinuses can be the site of chondroblastoma. The ethmoid and sphenoidal sinuses are more frequently affected than the maxillary sinus [9]. Several sinuses can be affected in the same patient. Involvement of the ethmoidal and sphenoidal sinuses has been reported by Sivaraju et al. That of the sphenoidal, ethmoidal and frontal sinuses has been reported by Cho et al. However, involvement of the ethmoidal, sphenoidal and maxillary sinuses, as in this case, has not been reported.

The circumstances of the discovery depend on the sinus or sinuses affected and the extension of the tumor to nearby structures. Most often, it is a nasal obstruction, headaches, eye disorders [10, 13, 14]. Eye disorders are a sign of an extension of the tumor to the orbit. Our patient had consulted for nasal obstruction, associated with headaches, rhinorrhea, anosmia and closed rhinolalia. Despite the extension of the tumor to both eye sockets, she denied having any eye disorder.

Chondroblastoma is characterized on computed tomography by an oval mass with a sclera border and calcification scattered within the lesion [4]. In this case, the computed tomography revealed a mass of tissue density, osteolytic, containing a root ball, of irregular outline.

Histopathologically, chondroblastoma is an immature cartilage tumor with an overgrowth of small to medium-sized,

round polygonal cells in leaves. Although clear cellular changes are visible at the focus, the cytoplasm is eosinophilic. The core is central and relatively large, often in the form of a coffee bean with a central, longitudinal nuclear groove. The nucleoli are small. In some cases, especially in tumors located in the skull and facial bones, cell atypia may be present with enlarged, irregular, and sometimes hyperchromatic nuclei [15]. In this case, these features have been observed in histopathological studies, including layers of chondrocyte cells of variable size, sometimes large, abundant and eosinophilic cytoplasm, and large, hyperchromatic nuclei.

The treatment of choice for chondroblastoma is the complete multidisciplinary removal of the tumor according to its extent [12]. The endoscopic approach has supplanted the other pathways. It facilitates the reconstruction of the skull base in three planes. We did not use this reconstruction and we did not note any intraoperative bone lysis or defects. Chondroblastoma is intermediate and locally aggressive and rarely metastatic. To reduce and prevent local recurrence and distant metastases of chondroblastoma, radical resection and regular follow-up are recommended [16, 17]. In 14 to 18% of cases, local recurrence occurs, often within two years [9]. There was no recurrence in this case with a one-year follow-up.

Table 1. *Comparison of our case with other cases of the authors.*

Authors / Year	seat	Initial sign	TDM	Histopathological examination data	Treatment	Postherapy Classes
Wang and Zhou [14]/2016	Ethmoidal and sphenoidal sinus	Nasal obstruction, rhinorrhea, headache, left epistaxis, decreased visual acuity.	Tumor extended to the orbits and base of the skull with osteolysis.	Chondroblastoma with a secondary aneurysm and bone cyst.	Surgery	All symptoms resolved without recurrence at follow-up.
Sivaraju et al. [13]/2016	Ethmoid and sphenoidal sinus, saddle tubercle, saddle and upper end of hollow	Impaired vision in both eyes and bitemporal hemianopia.	Not mentioned	Suggest a chondroblastoma	Surgery and radiotherapy	Simple after radiation therapy
Fazli et al. [10]/2025	Right ethmoid sinus,	Epiphora of the right eye and progressive exophthalmos of the right side	mass of the right ethmoid sinus extended to the cerebral cavity and right orbit with erosion	chondroblastoma. Biopsy results of the sample revealed areas of coarse calcification,	Surgery	After the second surgery, no recurrence was observed and symptoms were relieved.
This case	Ethmoidal, sphenoidal and maxillary sinus	Nasal obstruction, rhinorrhea, anosmia, closed rhinolalia, and headache.	The bilateral, ethmoid and sphenoidal maxillary nasosinus mass of tissue density, osteolytic, containing calcifications.	bilateral nasosinusian chondroblastoma.	Surgery	All symptoms resolved and no recurrence was observed.

4. Conclusion

Chondroblastoma is a rare tumor and its location in the head is extremely rare. It is difficult to detect at an early stage. Treatment involves completely removing the tumour.

Abbreviations

University Hospital	University Hospital
FMOS	Faculty of Medicine and Odontostomatology
ENT-HNS	Otorhinolaryngology and Head and Neck Surgery
Computed tomography	Computed Tomography
UTSTB	University of Technical Sciences and New Technologies of Bamako
WHO	World Health Organization

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Author Contributions

Bagayoko Abdoulaye Oumar: Conceptualization, Formal Analysis, Funding acquisition, Writing – original draft, Writing – review & editing

Toure Tata: Visualization, Writing – original draft, Writing – review & editing

Kone Fatogoma Issa: Formal Analysis, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing

Konate Oumar: Formal Analysis, Writing – original draft, Writing – review & editing

Barry Sadou: Visualization, Writing – original draft, Writing – review & editing

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Assitan Kole Coulibaly: Visualization, Writing – original draft, Writing – review & editing

Diarra Kassim: Visualization, Writing – original draft, Writing – review & editing

Konate N'faly: Visualization, Writing – original draft, Writing – review & editing

Keita Mohamed Amadou: Resources, Supervision, Validation

Conflicts of Interest

The authors declare that they have no conflict of interest in relation to this article.

References

[1] Hadrien Stolza, Thierry Rod Fleurya, Sana Boudabbousb, Didier Hannouchea. Cartilaginous tumors. RevMed Switzerland 2018; 14: 2259-63.

[2] Rosenberg AE. WHO Classification of Soft Tissue and Bone, Fourth Edition: Summary and Commentary. Curr Opin Oncol. 2013; 25(5): 571-3.

[3] Douis H, Saifuddin A. Imaging of cartilage bone tumors. I. Benign lesions. Skeletal radiol. 2012; 41(10): 1195-212.

[4] Martinez AP, Mora JT. Selected lesions rich in giant cells of the temporal bone. Pathol Neck Head. 2018; 12(3): 367-77.

[5] Inward CY. Update on tumors forming the cartilage of the head and neck. T ête Cou Pathol. 2007; 1: 67-74.

[6] Muhammed A, Meshneb M, Saro H, Elnakib N, Elnakib E. Management of cranial chondroblastoma in adults; a pooled analysis. Am J Otolaryngol. 2020; 41: 102486.

[7] Liu J, Ahmadpour A, Bewley AF, Lechpammer M, Bobinski M, Shahlaie K. Chondroblastoma of the clivus: case report and review. J Neurol Surg Rep. 2015; 76: E258 to 64.

[8] Gavendra S, Kulkarni P, Shah K, Bradoo R. Chondroblastoma - a rare sinonasal tumor: case report and literature review. Int J Otorhinolaryngol Head Neck Surgery 2023 February; 9(2): 194-200. https://doi.org/10.18203/issn.2454-5929.ijohns20230108

[9] Cho SH, Yu IK, Kim SM, Kim JH, Lee SY. Chondroblastoma with secondary aneurysmal bone cyst in the sphenoidal sinus: a case report. J Korean Soc Radiol. 2017 Jan; 76(1): 61-66. https://doi.org/10.3348/jksr.2017.76.1.61

[10] Fazli M, Khajavi M, Mohammadi S, Zaker A, Jalili M, Davoodi F, Bazgir N, and Akbari N. Chondroblastoma located in the anterior base of the skull: a case report and a comprehensive review of the literature. Otolaryngology case reports. 2025; 9368865. https://doi.org/10.1155/crot/9368865

[11] Reid LB, Wong DS, Lyons B. Chondroblastoma of the temporal bone: a case series, a review and a suggested management strategy. Rep. of the skull base 2011; 1(2): 71-82.

[12] Fletcher CDM, Unni KK, Mertens F. Pathology and genetics of soft tissue and bone tumors. IARC Press, Lyon. 2013; 427.

[13] Sivaraju L, Kiran NAS, Ghosal N, Hegde AS. Chondroblastoma of the saddle and the base of the anterior cranial fossa. Clin Neuropathol. 2016; 35(1): 42-3.

[14] Wang MJ, Zhou B. Chondroblastoma with secondary aneurysmal bone cyst at the anterior base of the skull. Interdisciplinary neurosurgery. 2016; 4: 13-6.

[15] Cabrera RA, Almeida M, Mendonça ME, Frable WJ. Diagnostic pitfalls in fine needle aspiration cytology of temporomandibular chondroblastoma: report of two cases. Diagn Cytopathol. 2006; 34(6): 424-9.

[16] Kurokawa R, Uchida K, Kawase T. Surgical treatment of temporal bone chondroblastoma. Surg Neurol. 2005; 63(3): 265-8.

[17] Kurt AM, Unni KK, Sim FH, McLeod RA. Chondroblastoma of the bone. Pathol Buzz. 1989; 20(10): 965-76.