CASE REPORT

A case of maxillary sinus carcinoma

Bruno Correia Jham *, Ricardo Alves Mesquita, Maria Cássia Ferreira Aguiar, Maria Auxiliadora Vieira do Carmo

Department of Oral Pathology, School of Dentistry, Universidade Federal de Minas Gerais, Av Antonio Carlos, 6627 Pampulha, 31270-901 Belo Horizonte, Minas Gerais, Brazil

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Summary  Malignant tumors of the nasal cavity and paranasal sinuses are rare, with poorly differentiated squamous cell carcinoma of the maxillary sinus being the most common. The aim of this study is to report a carcinoma affecting the maxillary sinus of a young adult, with diagnosis only being achieved with an intra-oral biopsy, after the lesion had perforated the palate bone. This case stresses the importance of early diagnosis of maxillary sinus carcinoma, in order to increase chances of survival.

KEYWORDS
Maxillary sinus carcinoma;
Paranasal sinus carcinoma;
Malignant neoplasm

Introduction

Malignant tumors of the nasal cavity and paranasal sinuses are rare, comprising less than 1% of all malignancies, with poorly differentiated squamous cell carcinoma of the maxillary sinus being the most common.1,2

This disease mainly affects men in their sixth or seventh decade of life.3 Most lesions remain asymptomatic or mimic sinusitis for long periods while the tumor grows to fill the sinus. Hence, diagnosis may not be made until the lesion has perforated through the surrounding bone, and most patients are diagnosed with advanced disease.2,4 While optimal treatment patterns, including radiation therapy, conservative surgery and chemotherapy are still under debate, the prognosis remains poor.2

The aim of this study is to report a carcinoma affecting the maxillary sinus of a young adult, with diagnosis only being achieved with an intra-oral biopsy, after the lesion had perforated the palate.

Case report

A 30-year-old black man sought care for evaluation of a swelling that had appeared following extraction of the third molar, one month before. The patient reported he was under sinusitis treatment for the past 18 months and complained of diplopia. During extra-oral examination, facial asymmetry and a painful swelling were noted in the left maxillary sinus region. Also, the contour of the left eyeball was altered and the cervical and submandibular nodes were palpable (Fig. 1A). Upon intra-oral examination, a 30-mm, asymptomatic, dark-colored, exophytic, soft, tumoral mass was observed in the left upper molar region extending into
the palate (Fig. 1B). Computerized tomography revealed destruction of the nasal cavity, destruction of the maxilla’s lateral wall with invasion of the zygomatic bone, as well as destruction of the orbit floor and invasion of the nasal cavity, maxillary sinus and pterygomaxillary space soft tissues. In addition, invasion of the nasal cavity, maxillary sinus and pterygomaxillary space soft tissues could be seen (Fig. 1D). Bone scintilligraphy revealed absence of bone metastasis. No clinical sign of residual oral lesion on 12 months follow-up, however computerized tomography showed that the lesion was even more invasive (Fig. 1G).

Discussion

Malignant neoplasms arising from the paranasal sinuses are rare, and even institutions with a referral practice for head and neck surgeons may not encounter many cases. The case presented here demonstrates a rare unusual presentation of maxillary sinus carcinoma with a unique clinical course.

Figure 1  (A) Extra-oral clinical view showing facial asymmetry and altered contour of the left eyeball. (B) Dark-colored, exophytic, soft, tumoral mass was observed in the left upper molar region extending into the palate observed upon intra-oral examination. (C) Computerized tomography revealing destruction of the medial maxillary sinus wall, invasion of the nasal cavity, destruction of the maxilla’s lateral wall with invasion of the zygomatic bone, as well as destruction of the orbit floor and invasion of the nasal cavity, maxillary sinus and pterygomaxillary space soft tissues. (D) Bone scintilligraphy revealed absence of bone metastasis. (E) No clinical sign of residual oral lesion on 12 months follow-up, however computerized tomography showed that the lesion was even more invasive (G).

Figure 2  (A) Spindle and round epithelial cells presenting malignant characteristics (hematoxylin and eosin stain; ×400 magnification). (B) Immunopositive cells were observed only for cytokeratins (streptavidine-biotine, ×400 magnification).
and neck cancer need many years to accumulate enough patients. This case presented clinical, imaginological, histological and immunohistochemical features of a maxillary sinus carcinoma.

The disease has a predilection for males (male/female ratio 2.3/1), with age range 38–89 years (mean 64 years). Patients usually are diagnosed with advanced disease, with as much as 90% of the patients presenting T3/T4 stages. However, lymph regional metastases are not frequently found, with incidence ranging from 3.3% to 26%. Our patient presented with the most common features of maxillary sinus carcinoma, i.e., male with advanced disease misdiagnosed as sinusitis. In contrast, he was a young patient and in addition showed regional metastasis. It has been noted that the majority of patients are cigarette smokers, and many work in mining, smelting or woodworking industries. Similarly, our patient reported smoking and he worked as a painter, hence was frequently inhaling toxic components of paint. Thus, we can hypothesize that this may have had a role in his disease pathogenesis.

The most common symptoms are pain (59%), followed by oral symptoms (40%), and facial swelling (38%). Nasal obstruction (35%) and epistaxis (25%) may also be seen. Although our patient showed facial swelling and also complained of pain, the precise diagnosis was not obtained until an oral swelling had appeared following a tooth extraction. Moreover, he was already being treated for nasal obstruction for nearly two years. Considering the median time from onset of symptoms until diagnosis, which is about four months, it took a long time for our patient to be diagnosed. Indeed, it has been stated that diagnosis of sinus malignancies is difficult to obtain, due to the air filled nature and deep position of structures involved. Hence, our case strongly emphasizes that misdiagnosis is crucially responsible for diagnosis delay, and efforts should be made to avoid it.

The optimum management of carcinoma arising in the maxillary sinus remains undefined. Therapeutic approaches include surgery, radiation and systemic and topical chemotherapy in a variety of combinations and sequences. Maxillary sinus malignancies have a poor prognosis, with the five-year cause-specific survival rate being 43% and overall survival of 52 months. Advanced T stage, regional and distant metastasis are highly predictive of poor prognosis. Our patient presented both advanced T stage and regional metastasis, and survived for 28 months despite being submitted to chemotherapy, surgery and radiotherapy.

In conclusion, this case stressed the importance of early diagnosis of maxillary sinus carcinoma, in order to increase chances of survival and to reduce morbidity.

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References