

A case of maxillary sinus carcinoma: An occult aggressive entity

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ABSTRACT

Carcinoma of the maxillary sinus is a rare aggressive entity. Squamous cell carcinoma of maxillary sinus has the highest incidence among the tumors developing within the sinonasal compartment and has one of the worst outcomes in comparison with other head and neck tumors. Management of these tumors often presents an uphill task to clinicians. In the present case, the patient presented with a swelling in the left cheek region with a history of trauma and altered sensation and no other signs and symptoms. Based on the history and clinical examination, a provisional diagnosis of infraorbital fracture was given. Further, radiographic and histopathological evaluation was done which leads to the final diagnosis of squamous cell carcinoma of the left maxillary sinus. As oral physicians, we come across diseases of the maxillary sinus; thereby, complete assessment of any pathology of the sinuses may help in early diagnosis of this deadly disease.

Key words: Aggressive, Antrum, Carcinoma, Maxillary sinus, Squamous cell

Carcinoma of the maxillary sinus is relatively uncommon in the oral cavity. It is often reported along with nasal sinus and other paranasal sinus (PNS) carcinomas [1,2]. Nasal cavity and PNS carcinomas account for 0.2–0.8% of all human malignant neoplasms [3,4] and among them sinonasal squamous cell carcinoma, a rare epithelial neoplasm represents about 3% of all malignancies of the head and neck region. It predominantly occurs within maxillary sinus (60–70%) and less frequently observed in the nasal cavity (12–25%), ethmoid (10–15%), and sphenoid/frontal sinuses (1%) [4,5].

Squamous cell carcinoma of maxillary sinus has worst outcomes when being compared with other head and neck tumors. One reason for this is a large number of patients who are diagnosed in an advanced stage [6]. Modality and sequence of treatment seem to be pivotal in determining the prognosis of squamous cell carcinoma of maxillary sinus affected patients [4]. Maxillary sinus squamous cell carcinoma is an aggressive tumor and most patients present an unfavorable prognosis and reduced survival rate.

CASE REPORT

A 57-year-old male patient presented to the department with a chief complaint of swelling in the left cheek region for 20 days which was followed by altered sensation for 17 days. The swelling was first noticed by the patient 20 days back, which was preceded by a trauma caused due to hitting by a rod. The swelling was preceded by pain which was gradual in onset, intermittent

in nature, and moderate in intensity. It aggravates on changing posture and was relieved by some ayurvedic medication. The patient also gave a history of hypertension for 13 years and was under medication (Losartan potassium-hydrochlorothiazide). Even he had undergone nasal polyp surgery 15 years back and had a habit of smoking for 20 years and alcohol for 15 years.

On general extraoral examination, a diffuse swelling was seen on the left middle one-third of face extending anteroposteriorly from ala of the nose to 2 cm anterior to the tragus of the ear and superoinferiorly extending from lower orbital margin to the corner of the mouth. The skin over swelling appeared normal. No ipsilateral or contralateral distant lymph nodes were palpable. On palpation, there was no local rise in temperature; the swelling was tender, soft in consistency, with a smooth surface and ill-defined borders. The swelling was non-fluctuant, non-compressible, immobile, and no discharge elicited. Intraoral examination revealed attrition associated with the left upper front tooth region (#21, 22, 23, 24, and 25) and there was no vestibular obliteration or tenderness (Fig. 1). Teeth were not mobile and non-tender on percussion.

A provisional diagnosis of infraorbital fracture was made with a differential diagnosis of zygomatic complex fracture and maxillary sinus pathology. Orthopantomogram revealed haziness in the left maxillary sinus with a break in the continuity of infraorbital margin (Fig. 2).

PNS view revealed haziness involving the left maxillary sinus (Fig. 3). Computed tomography of PNS (CT-PNS) showed a heterogeneous mass in the left maxillary sinus with wall



Figure 1: Intraoral photograph showing attrition in upper left anterior teeth

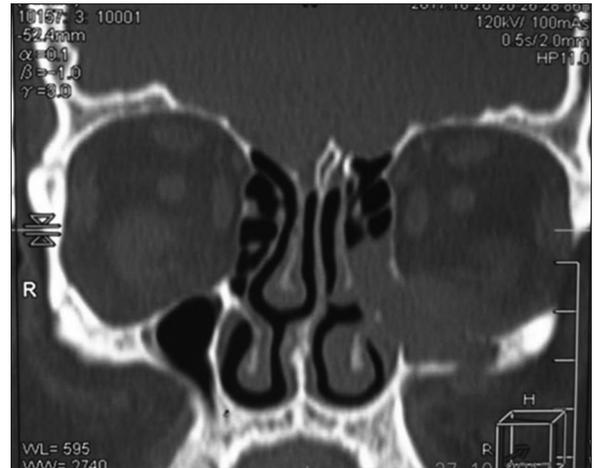


Figure 4: Computed tomography-paranasal sinus showing heterogeneous mass with wall erosions, destruction, and sclerosis



Figure 2: Orthopantomogram showing haziness in the left maxillary sinus

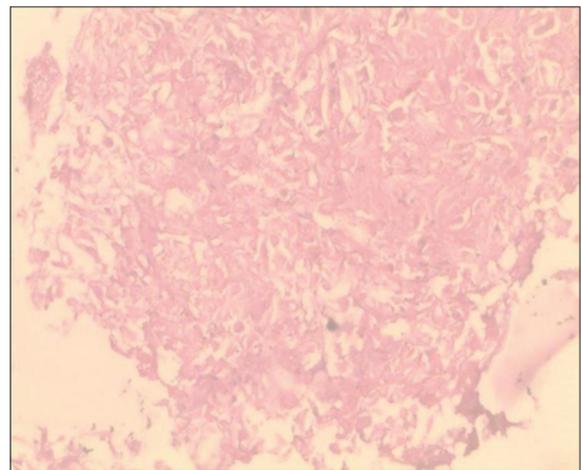


Figure 5: Histopathology showing scattered pleomorphic squamous cells with hyperchromatic nucleus



Figure 3: Paranasal sinus view showing haziness in the left maxillary sinus

erosions, destruction, and sclerosis; and extension into the left retromaxillary space, middle meatus and into the orbit; with loss of fat plane (Fig. 4). Radiographically, it was diagnosed to be having neoplastic lesion symptoms pertaining to the left maxillary sinus. Incisional biopsy was performed which showed extensive necrosis and scattered pleomorphic squamous cells with a hyperchromatic nucleus (Fig. 5). Histopathologically, it

was diagnosed as squamous cell carcinoma of the left maxillary sinus.

DISCUSSION

Maxillary sinus malignancies are rare neoplasms, often reported along with nasal sinus and other PNS carcinomas [7]. The process of maxillary sinus development continues until about the age of 8 years. The lateral expansion of maxillary sinus to the infraorbital canal is completed by the age of 4 years, and by the age of 8 years, lateral pneumatization up to the infraorbital canal occurs [8]. Maxillary sinus cancer represents 0.2% of human malignant tumors and 1.5% of all head and neck malignant neoplasms. Squamous cell carcinoma is the most common tumor of the sinonasal tract which is commonly reported in men in their fifth–sixth decade. The highest incidence is reported in the seventh decade of life [1].

Occupational exposure to wood dust, in particular to dust of hardwoods such as beech and oak, is the risk factor for sinonasal cancer. The increase in risk (in the order of 5–50-fold) is strongest for adenocarcinomas and cancers originating from the sinuses.

The effect is seen after 40 years or more since the first exposure and persists even after the cessation of exposure. An increased risk of sinonasal cancer has been shown among workers in nickel refining and chromate pigment manufacture, but not among workers exposed to these metals in other processes such as plating and welding. Other suspected occupational carcinogens are formaldehyde, diisopropyl sulfate, and dichloroethyl sulfide. A relatively weak (relative risks in the range 2–5) but consistent association of sinonasal cancer has been shown with tobacco smoking [3].

The symptoms produced by malignancy of the maxillary sinus depend on the wall of the sinus involved. The involvement of the medial wall leads to nasal signs and symptoms such as obstruction, discharge, bleeding, and pain. Lesions on the floor of the sinus may produce dental signs and symptoms such as enlargement of the alveolar process, pain, and altered sensation of the teeth. If the lesion penetrates the lateral wall, facial and vestibular swelling becomes apparent and there may be pain and hyperesthesia of the maxillary teeth. Involvement of the sinus roof and floor of the orbit causes signs and symptoms related to the eye, including diplopia, proptosis, pain, and hypoesthesia or anesthesia over the cheek and maxillary teeth [9]. They are frequently asymptomatic in 9–12% of patients, contributing to a delay in the diagnosis and advanced stage of disease [10].

In the present case, the patient presented with a swelling in the left cheek region and a history of trauma due to hit by a rod, altered sensation, and no other signs and symptoms which was deceiving and led to a provisional diagnosis of infraorbital fracture. Imaging is an essential tool in diagnosing maxillary sinus tumors. Computed tomography scanning with contrast is superior for the evaluation of the bony confines of the sinonasal tract and skull base.

CONCLUSION

Early diagnosis of any disease has a good prognosis. Usually, maxillary sinus carcinomas are diagnosed at later stages, leading to poor prognosis. An early and thorough evaluation of maxillary

sinus pathology is important, as the absence of signs and symptoms can mislead in diagnosing this disease. As oral physicians, we come across diseases of the maxillary sinus; thereby, complete assessment of any pathology of the sinuses may help in early diagnosis of this deadly disease.

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