

**Case report**

**Massive chondrogenic osteosarcoma of the maxilla: A case report**

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**Abstract**

Although osteosarcoma is the most common primary bone cancer, the incidence in head and neck bony structures is extremely low. As the surgical treatment requires a wide margin excision, the operation usually will be very challenging especially if it involves midline structures. We report a case of a young gentleman who had a bony growth over the epicenter of the hard palate which rapidly occupies the whole oral cavity within 6 months duration. The outline of management is discussed.

**Keywords:** Osteosarcoma, hard palate.

**Introduction**

Osteosarcoma is the commonest primary bone tumor. It usually affects long bones of the extremities. The incidence involving head and neck bony area is very rare. In head and neck region, mandible is the most common site, followed by maxilla. The rapid growth of the mass usually imposes additional challenges to the treating team as it will compromise airway and feeding.

**Case Summary**

A 22-year-old Malay gentleman was apparently well until 6 months ago when he started to notice a swelling on his hard palate. It was reddish in color and hard in consistency. However since the last one month, he started to feel intermittent throbbing pain. The mass grew rapidly larger until it occupied the whole oral cavity. He hardly could take any solid food and rely solely on sips of fluid. He also noticed that his nasal breathing also was affected.

Examination revealed a large swelling measured 6 x 5 cm occupying the whole

oral cavity (Figure 1). The tongue was pushed to the floor and hardly could be seen. The airway was totally occluded by the mass. No neck mass noted.

Emergency tracheostomy was performed in view anticipating acute airway obstruction. Punch biopsy of the mass revealed chondrosarcoma. Computed tomography scan showed the extension of the mass. It occupied the oral cavity, both nasal cavities and maxillary antrum on the left side. In view of suspicious that the mass might breach anterior cranial fossa, a magnetic resonance imaging was obtained (Figure 2).

Excision of the tumour was carried out by head and neck, oromaxillofacial and reconstructive surgeon. Wide resection of the tumor was achieved by performing right total maxillectomy and left subtotal maxillectomy. Nasal bones and frontal process of maxilla were left intact. Floor of the left orbit was removed because of the tumor involvement. The repair was achieved by using temporoparietal fascia

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with outer table of calvarial bone flap. All resection margins sent for frozen section intraoperatively were negative.



**Figure-1:** The mass occupying the whole space in oral cavity



**Figure-2:** A large lobulated mass indenting onto the glossus muscle. There was no extension intracranially.

The bony facial defect at the midface region was reconstructed by using dental obturator. It is to separate the nasal and oral cavities and as well as giving the curvature of upper dental arch. The tracheostomy was decannulated during follow-up and the patient can now feed per orally. The histological examination confirmed the diagnosis of chondrogenic osteosarcoma. He was referred to oncological team for chemoradiotherapy.

## **Discussion**

Osteosarcoma is a relatively rare soft tissue sarcoma in the head and neck region, making up less than 10% of the osteosarcomas in general<sup>1</sup>. Being the commonest primary bone cancer, it usually affects long bones of the body. The peak incidence is in adolescent age group, whereby there is a rapid period of bone growth<sup>2</sup>.

In the head and neck region, mandible and maxilla are the bones that usually affected. Mandibular osteosarcoma almost occurs twice as often as the maxilla<sup>3</sup>. In our case, the sarcoma originated from the maxilla, before occupying the whole oral cavity and extending into the nose and paranasal sinuses. Few subtypes have been described. However, the prognosis is not influenced by the subtypes<sup>4</sup>. European osteosarcoma Intergroup in 2002 studied 570 patients with biopsy-proven primary central osteosarcoma. There is some evidence from their study that chondroblastic subtype experience better survival<sup>5</sup>.

Osteosarcoma is a rapidly growing tumor. If the neoplasm occurs in the limited space such as oral cavity, it may impose additional catastrophic complications. Reduced oral intake and airway compromise are the expected complaints. These problem needs to be addressed early as it will jeopardize patient's general condition. In this case, airway was secured with emergency tracheostomy while the work-up is being done.

Punch biopsy of the mass and the radiological assessments including computed tomography scan and magnetic resonance imaging of the head and neck are the prerequisite before further decision is made. It is to decide on the surgery with safe margin is feasible in individualized case. Surgery with adequate margin is the treatment of choice in primary jaw osteosarcoma<sup>6,7</sup>. Radiotherapy and

chemotherapy can be used in combination after surgery, or alone in case of palliative treatment<sup>4</sup>. The prognosis of jaw

osteosarcoma is better than long bones sarcoma if the diagnosis and treatment can be started early<sup>8</sup>.

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