Chondrosarcoma of the Maxilla

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A 70-year-old female patient presented with a symptomatic swelling on the upper alveolar ridge that had been present for about 5 months before admission to our hospital. She had no difficulty in swallowing or breathing. The patient had a 3-year history of stage III hypertension and stage C heart failure (refer to the American Heart Association classification). Intraoral examination revealed an irregular mass of approximately 4.2 × 4.0 cm in size on the right side of the posterior upper alveolar ridge (Figure 1). On palpation, it was found to be hard, non-compressible, and nontender. The overlying mucosa appeared normal without an erythematous or ulcerated surface. No regional lymphadenopathy was observed.

Computed tomography demonstrated an irregular soft tissue mass causing osteolytic destruction of the upper right maxillary alveolus, floor and lateral wall of the right maxillary sinus (Figure 2). An incisional biopsy was carried out, and the histological result showed areas of well-differentiated hyaline cartilage composed of cells with moderate atypia and occasional mitosis (Figure 3). The final diagnosis was low-grade (grade I) chondrosarcoma confirmed by 2 independent, experienced pathologists. Unfortunately, as the patient had a history of severe heart failure and hypertension, the patient was denied treatment for chondrosarcoma, including surgical resection and radiotherapy. She died of heart failure 12 months after the initial diagnosis.

Chondrosarcoma is extremely rare in the head and neck area, accounting for less than 0.1% of all malignant tumors in this region.1 A review of the literature reveals that chondrosarcomas of the head and neck have been reported in patients ranging from 16 months to 74 years old.2 The peak age of incidence is the third to the sixth decade. Our case affected the maxilla, and the age of the patient was 70 years. The most common sites affected are the maxilla and mandible in the proportion of 2:1.3 The patient usually presents with painless swellings.3,4 Histogenetically, chondrosarcoma originates from a mature cartilaginous compartment. As the maxilla contains exclusive membranous ossification, the presence of the disease in the maxilla remains controversial. Nonetheless, many authors have suggested that chondrosarcoma of the maxilla arises from cartilaginous differentiation of primitive mesenchymal cells, rather than from embryonic cartilaginous nests.5 Chondrosarcoma is divided according to microscopic appearance. Histological subtypes include conventional (80.8%), myxoid (10.5%), and mesenchymal (8.8%).1 The classification of chondrosarcoma is based on nuclear size, staining pattern, mitotic activity, and degree of cellularity.1 The low-grade...
chondrosarcoma that is the most common in the head and neck area may be challenging to differentiate from a benign tumor. In our case, the final diagnosis was low-grade chondrosarcoma. The mainstay of treatment for head and neck chondrosarcoma is wide local excision. Nonetheless, as the anatomy of the maxillary bone region is complicated, surgical excision of chondrosarcoma with an adequate margin may be challenging. The role of adjuvant therapy remains controversial. There are no published reports of effective adjuvant chemotherapy specific to head and neck chondrosarcomas. However, greater resistance to irradiation than radiosensitivity has also been reported. The majority of head and neck chondrosarcomas are low grade and stage I, and long-term survival or cure is achieved with surgery in most patients. In these circumstances, overall disease-free survival at 5 and 10 years is 87% and 71%, respectively. However, our patient was denied treatment because of a history of severe heart failure and hypertension.

Declaration of Conflicting Interests
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Figure 2. Computed tomography demonstrates an irregular soft tissue mass causing osteolytic destruction of the upper right maxillary alveolus, floor and lateral wall of the right maxillary sinus.

Figure 3. The histological result (H&E stain, ×400 magnification) shows areas of well-differentiated hyaline cartilage composed of cells with moderate atypia and occasional mitosis.