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A comprehensive study of 214 osteosarcomas of the jaws

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Background:

Osteosarcomas of the jaws account for approximately 5% of all osteosarcomas and seem to represent a clinically and prognostically distinct subgroup. However, due to the rarity of the disease rather small series have been described in the literature so far.

Methods:

214 gnathic osteosarcomas, registered in the Bone Tumor Reference Center in the past 40 years, were histologically re-evaluated and graded. Additionally, the corresponding clinical files were collected and analyzed for clinico-pathological characteristics.

Results:

Our series included 136 mandibular and 78 maxillary osteosarcomas with a median patient age of 39 years and an average follow-up of 59 months. The overall survival at 5-years was 66.8% and at 10-years 59.2%, respectively. The prognosis of patients differed significantly with regard to tumor grade ($p = 0.027$), metastatic ($p < 0.0001$) and recurrent ($p < 0.0001$) disease as well as with the achievement of a complete resection (R0) at any time during the course of the disease ($p < 0.0001$, 5-year survival 79.9% vs 24.3%). Tumor size and site, however, did not prove to be of statistical significance. Interestingly, (neo-)adjuvant therapy did not prolong survival.

Conclusions:

Osteosarcomas of the jaws have distinct clinico-pathological properties compared with their counterparts in the peripheral skeleton. The mainstay of therapy seems to be the complete surgical resection of the tumor resulting in an excellent prognosis of patients.

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