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**Determination of safety surgical margins in relation to radiological and Histological and Histological tumour margins in the treatment of Mandibular ameloblastoma at Muhimbili National Hospital**

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**Master of dentistry (Oral surgery)**

**University of Dar es Salaam, College of natural and applied sciences, 2006**

Due to ameloblastoma's high rate of recurrence, it is important for surgeons to make sure that the tumour is completely removed during the first surgical excision. The clinician must take into consideration the postoperative issues such as disfigurement, aesthetics, functional and psychological effects by removing only the tumour tissue with little sound bone as safe surgical margins. The estimation of safe surgical margins in the MNH setting depends on the conventional radiological assessment and macroscopic appearance of the tumour during surgery. However, no study so far has evaluated whether the estimation done using conventional radiographs is optimal or not. Objective: To determine safety surgical margins in relation to the radiological and histopathological tumour margins of mandibular ameloblastoma. Study design: Retrospective and prospective descriptive cross-sectional study. Study setting: The Departments of Oral Surgery and Oral Pathology, Diagnostic Radiology and Histopathology and Morbid Anatomy of Muhimbili University College of Health Sciences. Material and Methods: The study consisted of 24 patients, among whom 14 were males and 10 were females. All patients had mandibular ameloblastoma and underwent partial mandibulectomy. The orthopantomographs were performed and detailed radiological examination was done. The determination of radiological tumour margins and the estimation of the surgical margins were done pre and intra-operatively. The surgically resected lesions were submitted as specimens for laboratory processing, whereby the surgical margins and radiological margins were assessed microscopically for presence of tumour tissue. In addition, the histopathological diagnosis and histopathological types of tumours were reconfirmed for each specimen. Besides that, the distance from the radiological tumour margin to the histopathological tumour margin of each case was determined. Results: There was a slight male preponderance of 1.4:1. The age of patients ranged from 15 to 63 years with mean age of 32.83 years (SD = ±14.07). The majority of patients (25%) were between 20 and 29 years of age. The duration from the initial symptoms until the time of diagnosis ranged between 2 and 10 years, with a mean duration of 4.33 years (SD = ±2.10). The size of the tumour ranged between 6 and 27 cm, with a mean size of 14.5 cm (SD = ±5.8) in the anteroposterior dimension. In the buccolingual dimension the size ranged from 3 to 14 cm,

with a mean size of 6.44 cm (SD =±3.22). Majority of the cases (83.33%) had lesions that involved some part of both the anterior and posterior aspects of the mandible. All patients presented with slow growing painless swelling, facial asymmetry, loose teeth and expansion of cortical plates. Pain was a late symptom in 20.8% of the patients while ping pong and eggshell crackling effects were elicited in all patients among whom the duration of lesions was five years and above. Majority of the patients (87.5%) whose radiological features of unilocular ameloblastoma was characteristic. Histological subtypes were dominated by the follicular type (79.2%), while plexiform and unicystic types were encountered in 8.3% of each category. One (4.2%) patient had ameloblastic carcinoma. Distance from the radiological tumour margin to the surgical margin ranged from 5 mm to 40 mm. In all specimens the surgical margins were microscopically free of tumour. The same was observed in the radiological tumour margins with the exception of one case. The distance from the radiological tumour margin to the histopathological tumour margin was between 1 and 2 mm in 18 (75%) cases. Whereas, in 4 (16.7%) cases the distance was 3 mm and in the remaining 2 cases, the distance was less than 1 mm. Distance from the histopathological tumour margin to the surgical margin ranged from 7 to 43 mm with a mean distance of 17.79 mm (SD = ±9.16) and median of 14.5 mm. The conclusion Most of the findings in the demographic, clinical features, radiological features and histological features tally with previous studies done within and outside Tanzania. Conventional radiographs seem to be useful in the determination of safety.