ABSTRACT

Objectives: The ability to assess mandibular bone margins in situ is of great clinical utility to the surgeon. Previously, the cancellous nature of the mandible required appropriately decalcify the bony specimens. Methods: We have tested and confirmed methods to achieve this rapid method of processing mandible bone margins for histopathologic examination, allowing for intraoperative assessment of a bone margin. A prospective clinical trial of patients with cancer invasion in the mandibular bone to confirm cancer cells are identifiable with this rapid processing method is planned. Results: Bone margin specimens collected with a 4mm burr and processed with EDTA Decal for 30 minutes yielded the best histopathologic results (shortest time to obtain optimal histologic quality with complete decalcification). 15 minute processing time was sufficient for missed positive margins and avoid the need for reconstructive take down and repeat resection with reconstruction. Conclusions: Mandible bone margins can be rapidly prepared and adequately evaluated with only 15-30 minutes of decalcification, allowing for intraoperative assessment of a bone margin. A prospective clinical trial of patients with cancer invasion in the mandibular bone to confirm cancer cells are identifiable with this rapid processing method is planned.

REFERENCES

1) Oxford, et al reported the utilization of small osteotomes to section cortical bone which was subsequently processed for histologic examination, allowing for intraoperative assessment of a bone margin. A preliminary study. Head & Neck, e-publication. February 2010


3) Weisberger EC, Hilburn M, Johnson B, et al. Intraoperative microwave processing of bone margins can be rapidly prepared and adequately evaluated with only 15-30 minutes of decalcification, allowing for intraoperative assessment of a bone margin. A prospective clinical trial of patients with cancer invasion in the mandibular bone to confirm cancer cells are identifiable with this rapid processing method is planned. We plan to examine this model in a prospective clinical trial of patients with cancer invasion in the mandibular bone.