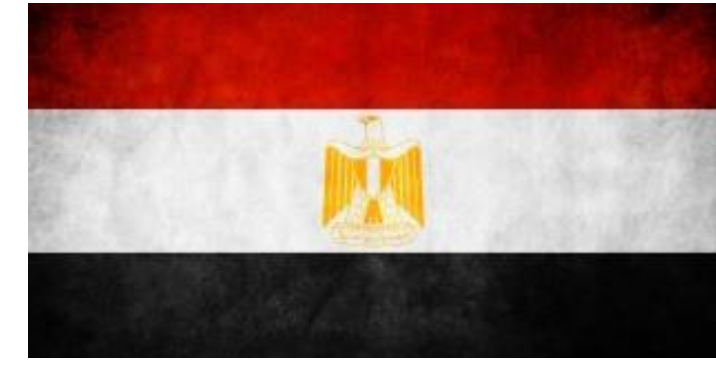




Combined Ridge Splitting two stage mental foramen distalization for vertical and horizontal mandibular reconstruction



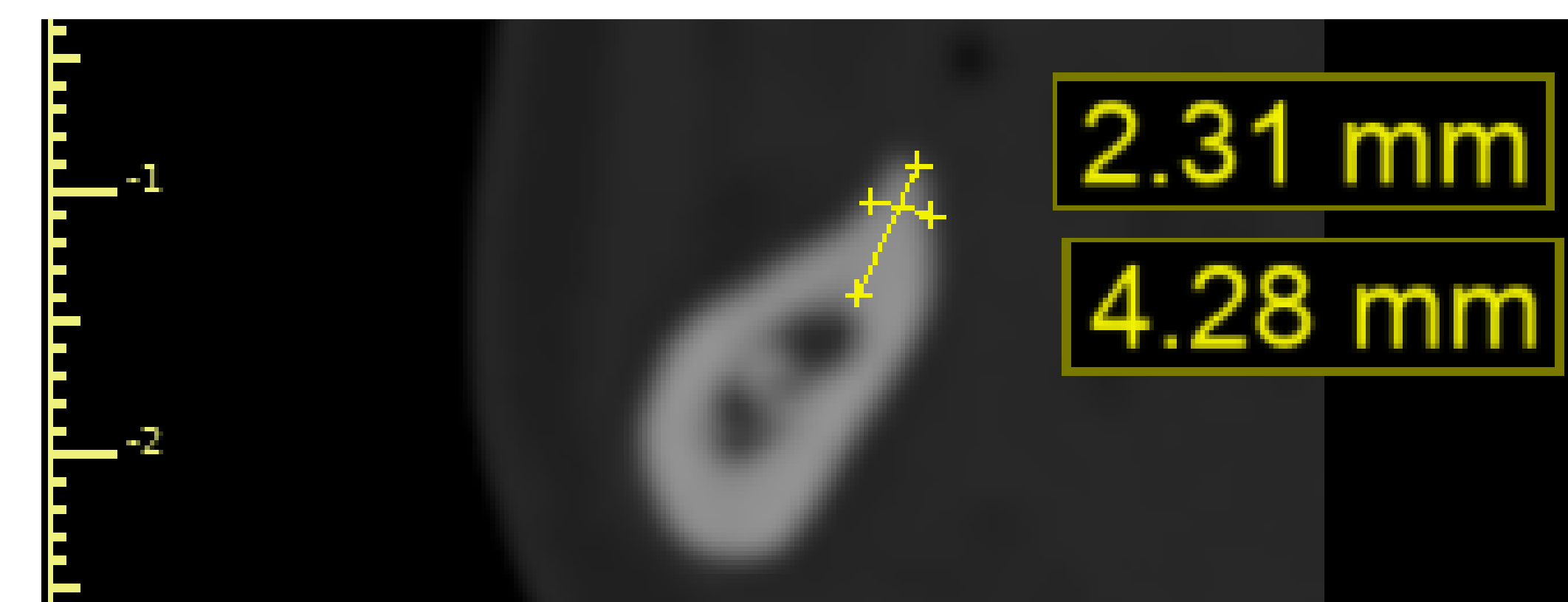
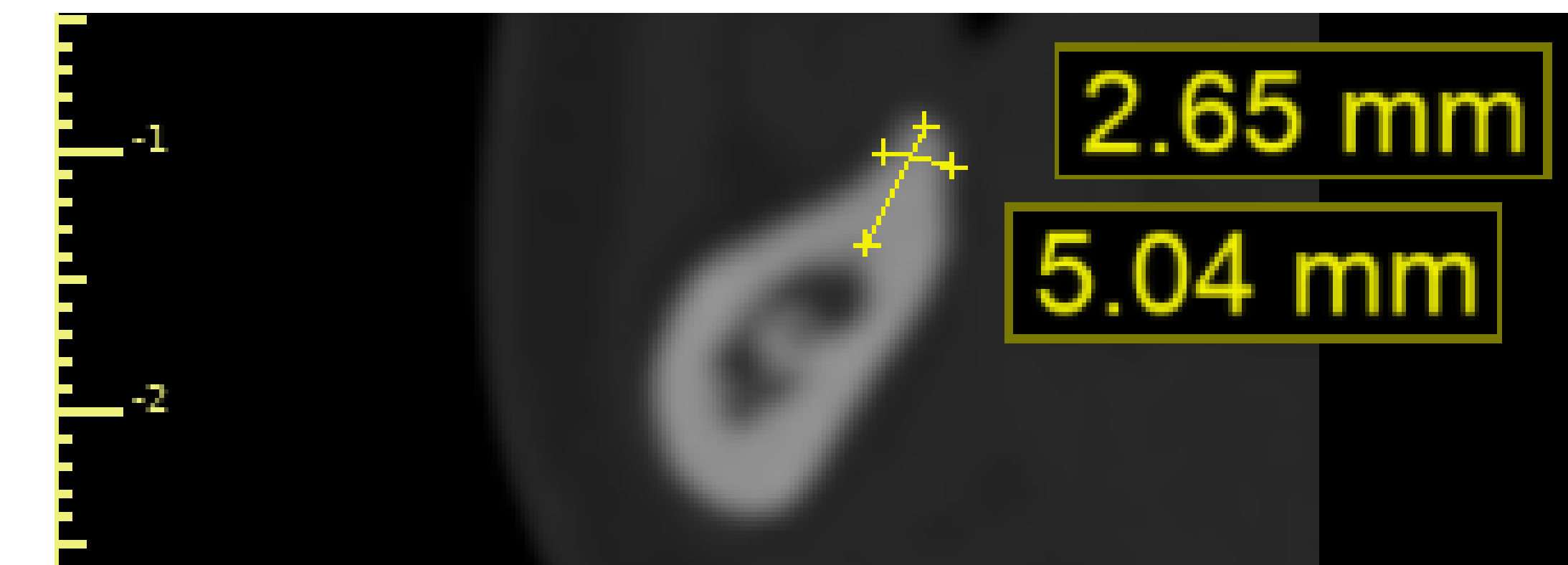
Atef, Mohammed ; Shawky, Mohamed ; Bagash, Abdul Aziz ; Elhadidi, Mina ; Hisham Sholkamy; Abdallah, Ahmed M.

Introduction: Inferior alveolar nerve transpositioning has been one of the modalities used to manage posterior mandibular vertical deficiency. Although IAN transpositioning techniques couldn't resolve horizontal deficiency. **Hence ,The aim** of the present study was to introduce a novel approach for management of horizontal and vertical deficiency in FP3 patients utilizing a combined approach of mental foramen distalization and sagittally splitted mandibular body, reconstructing mandibular body vertically and horizontally.

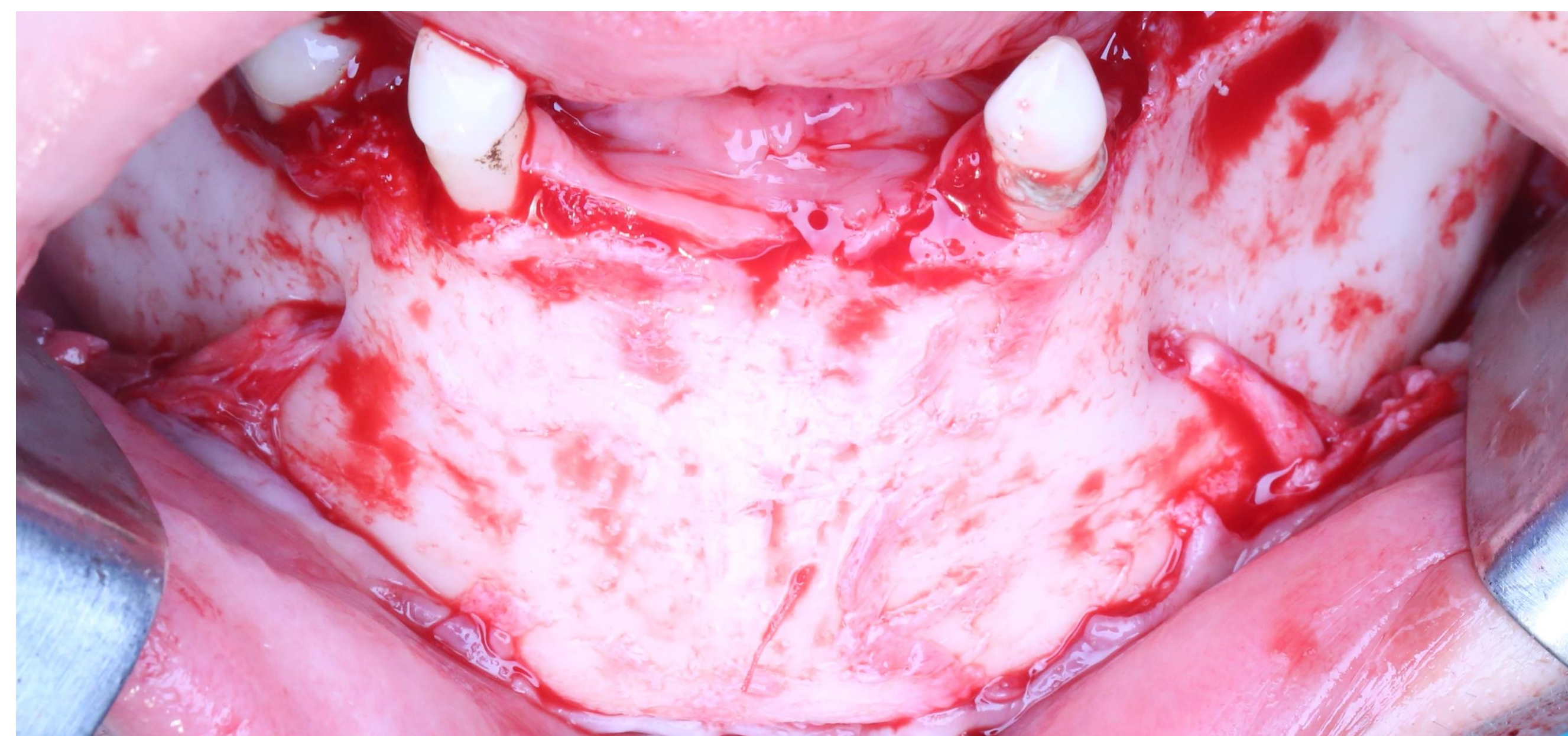
Methods: 4 patients with both horizontal and vertical deficiency in the mandibular alveolar ridges were included, with residual horizontal dimension ranging from 2-4 mm and residual vertical dimensions from the alveolar crest till the superior border of inferior alveolar nerve ranging from 4-5mm, Radiographic evaluation was carried out with an immediate postoperative CBCT as well as a 6 month postoperative CBCT to evaluate consolidation of cortical blocks to confirm successful vertical and horizontal bone gain.



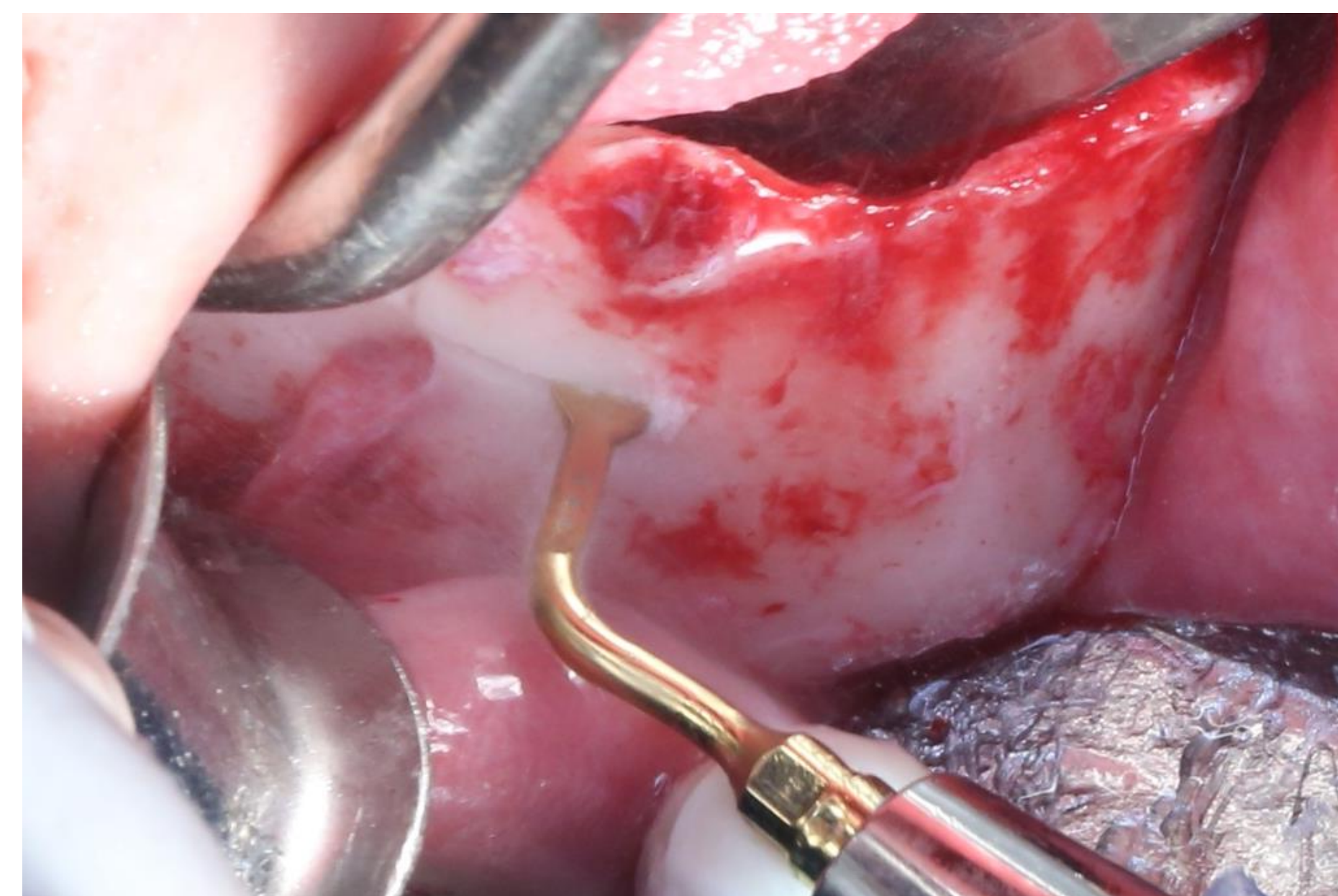
Preoperative Occlusal View



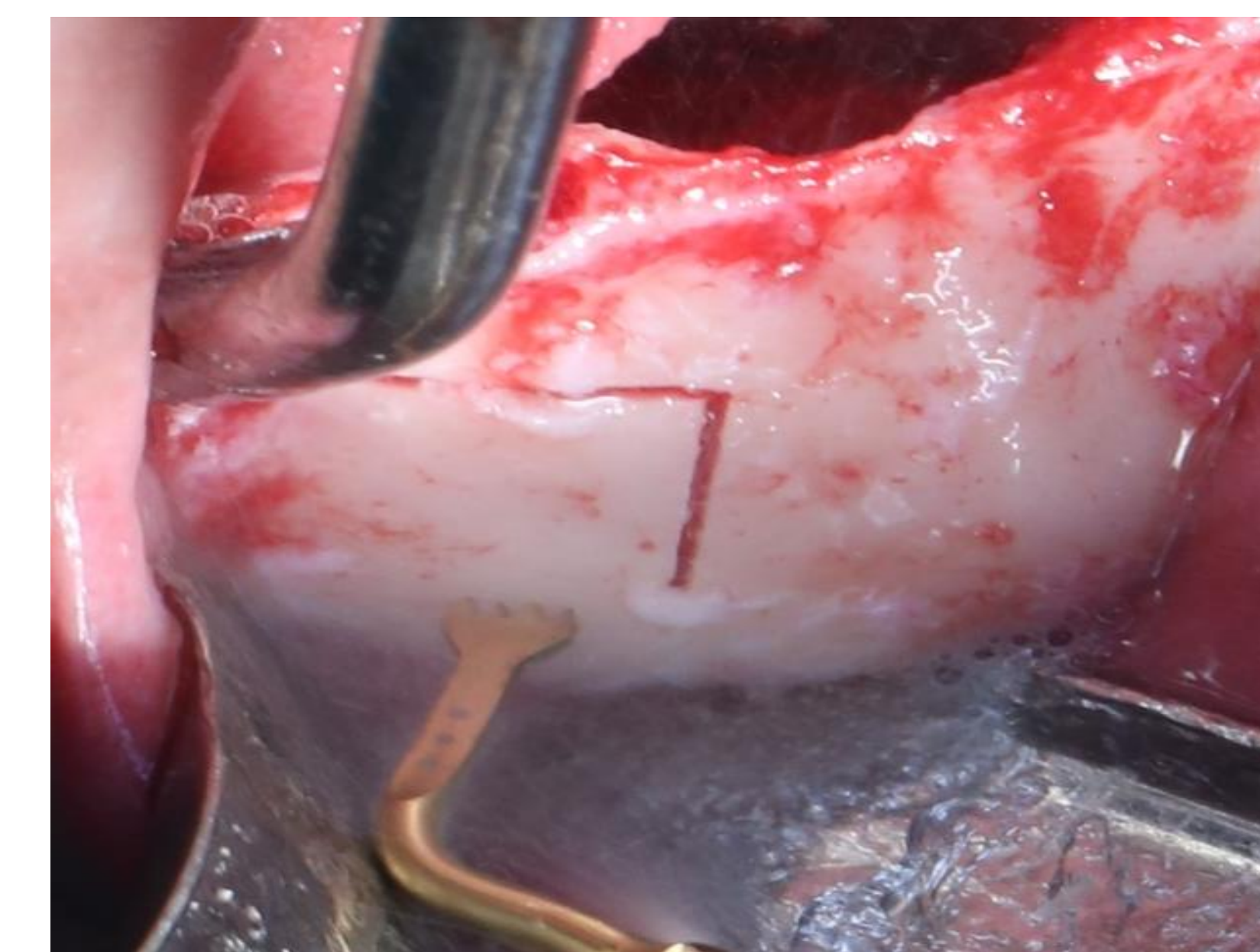
Preoperative CBCT cross section.



Skeletonized Bilateral Mental Nerves



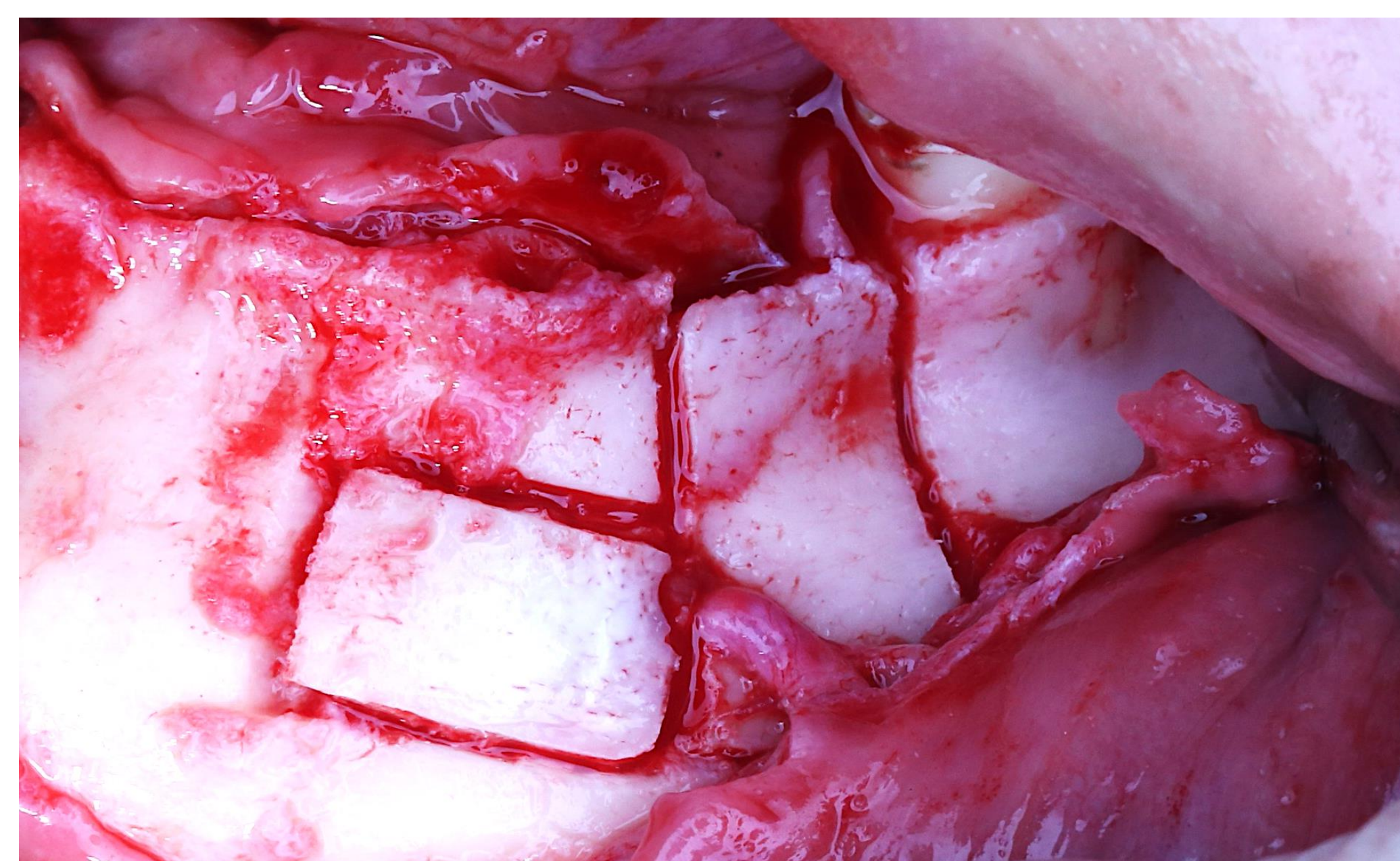
Superior Osteotomy Cut



Inferior Osteotomy Cut



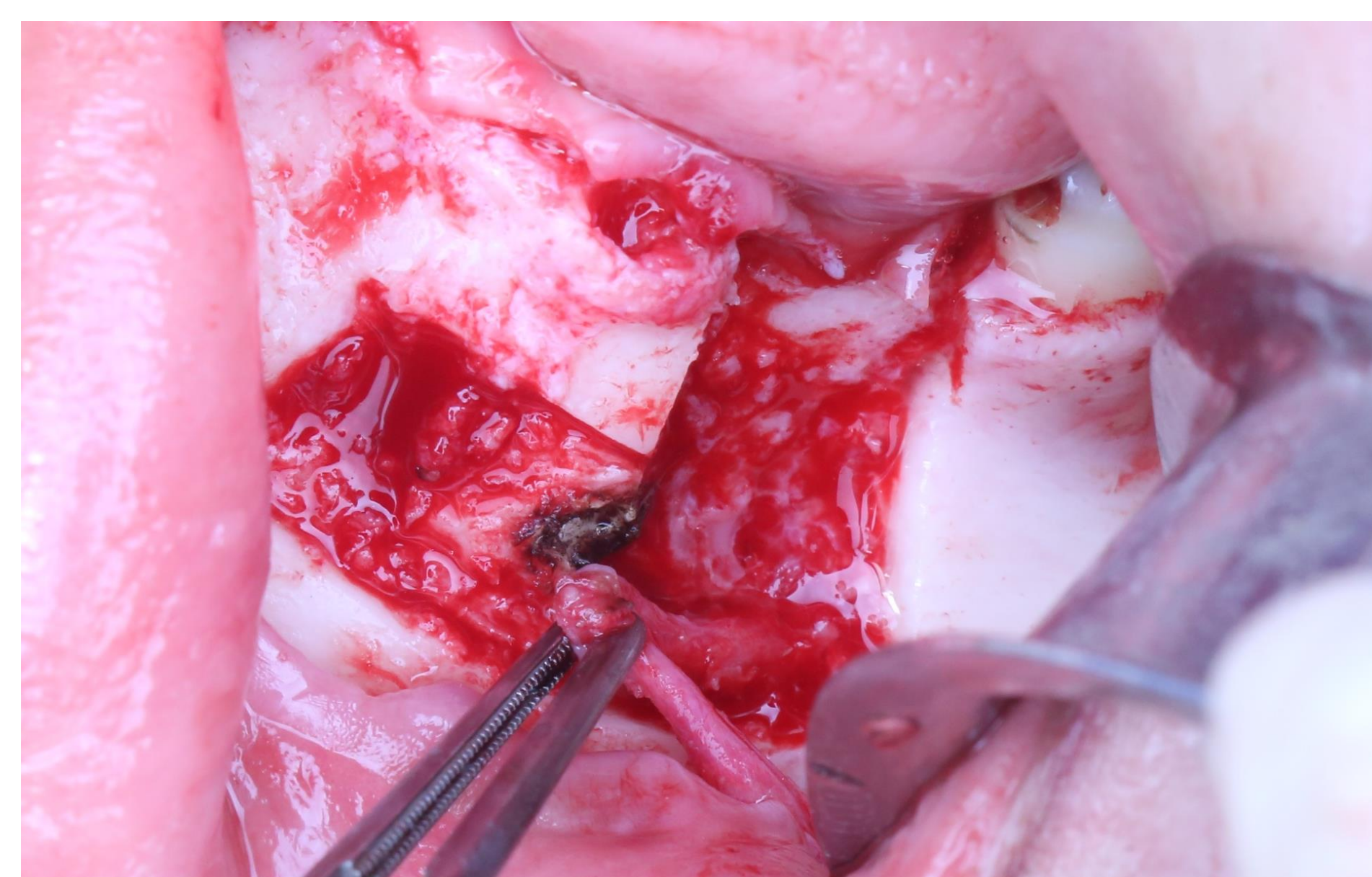
Osteotomy Design for Mental Nerve Distalization



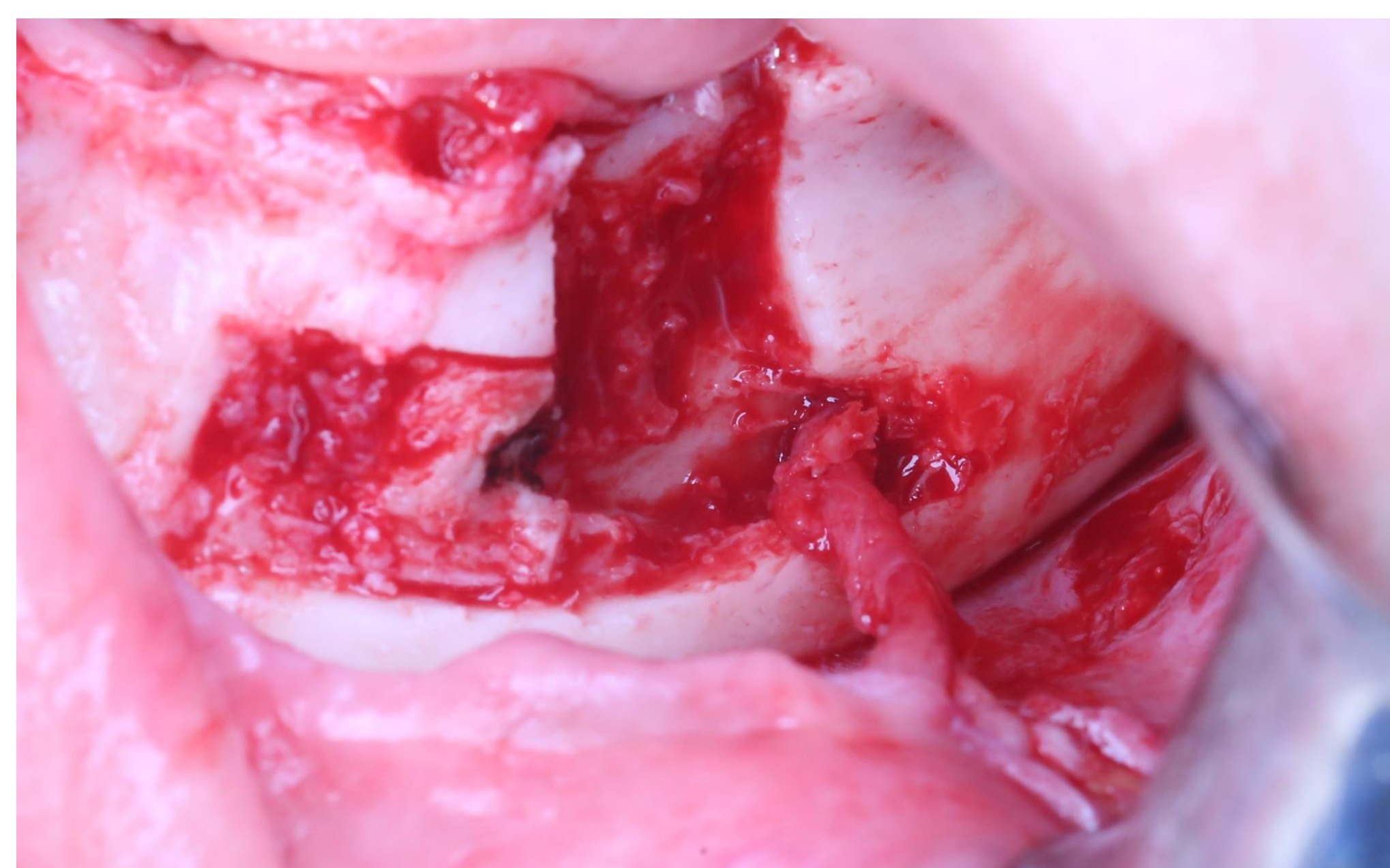
Osteotomy Design for Mental Nerve Distalization



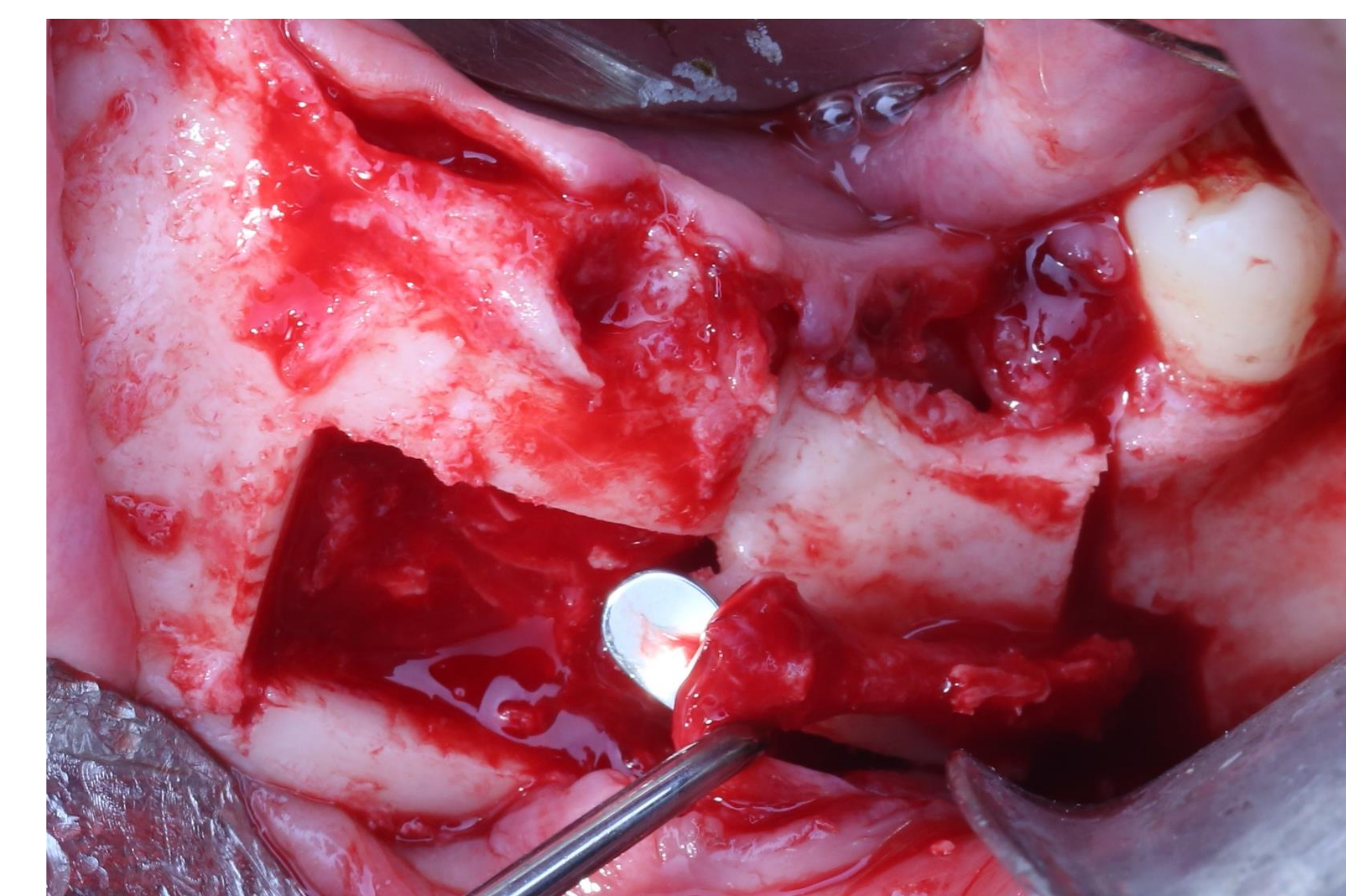
Separated outer cortex



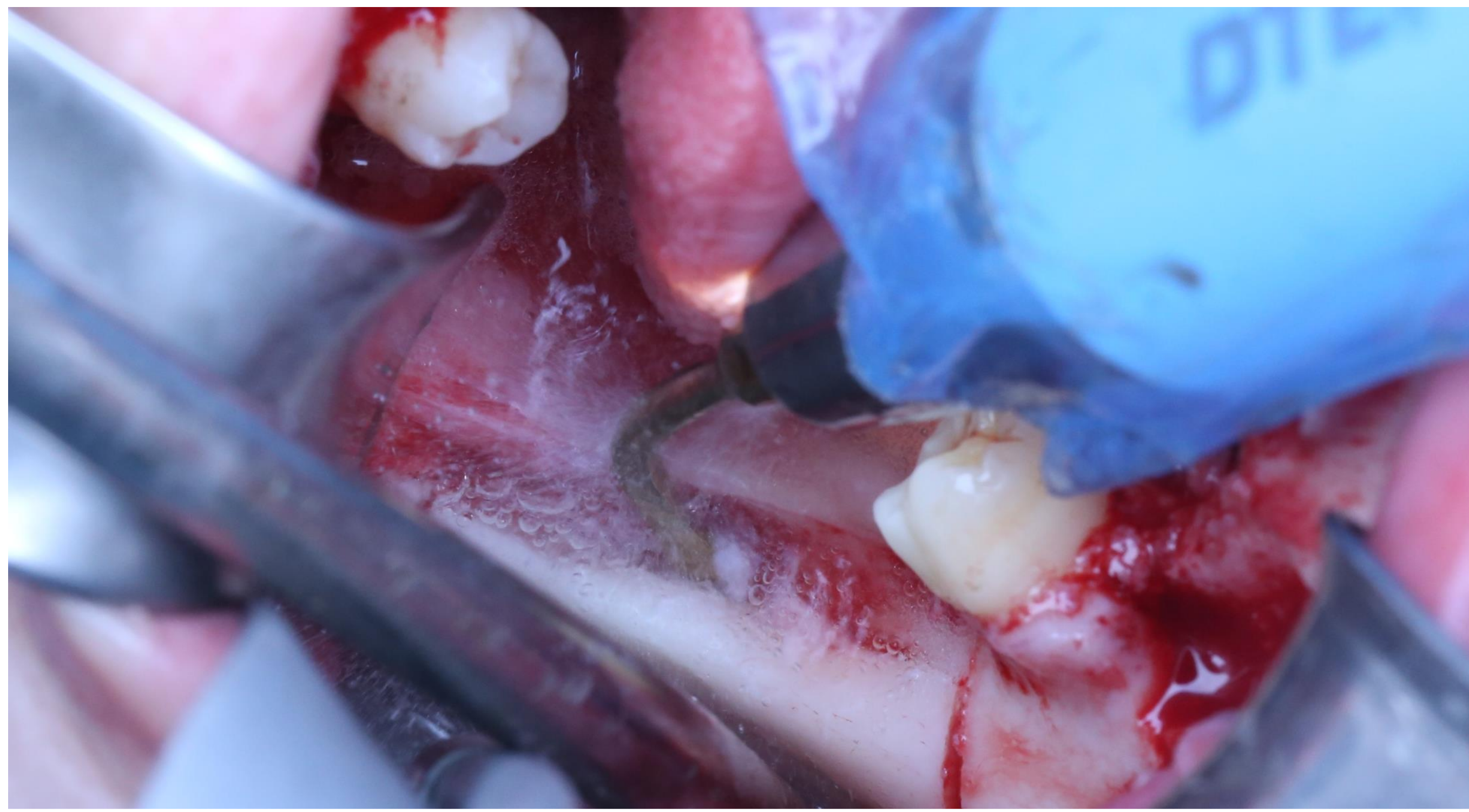
Dissection of Mental



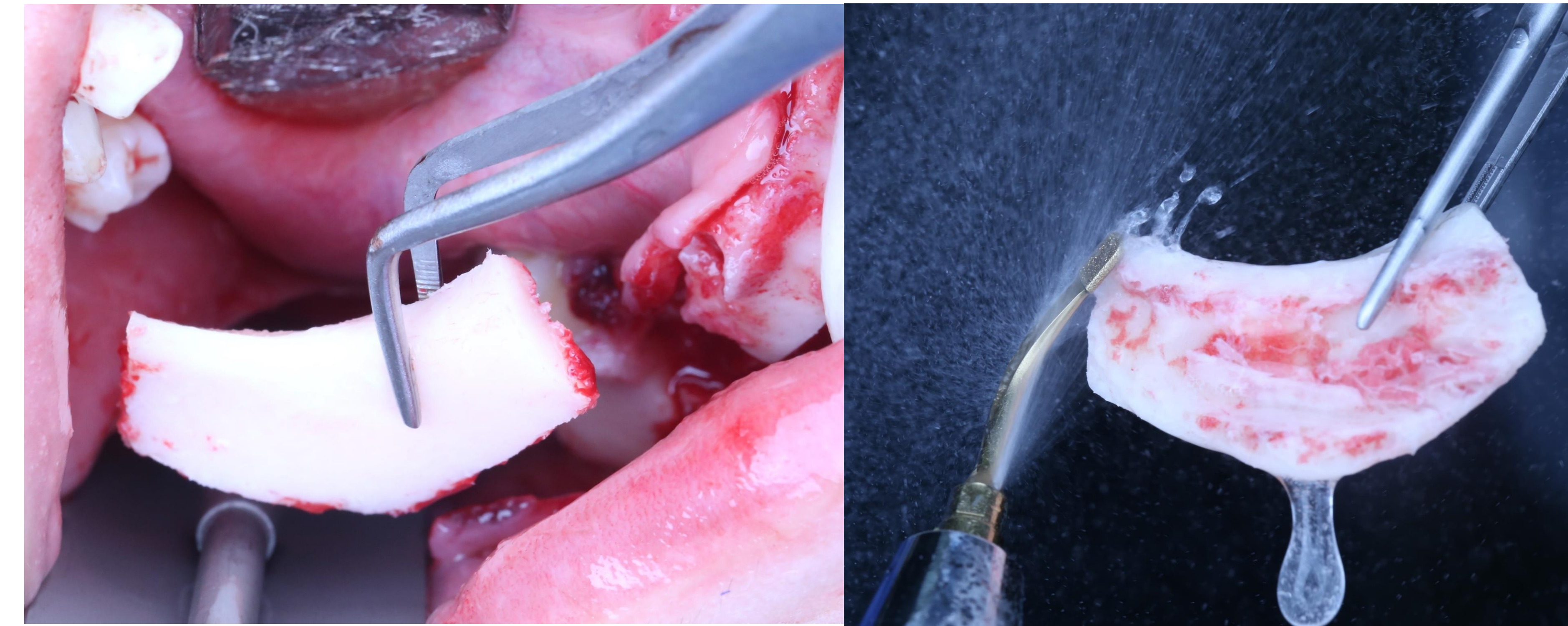
Mental Foramen Distalization



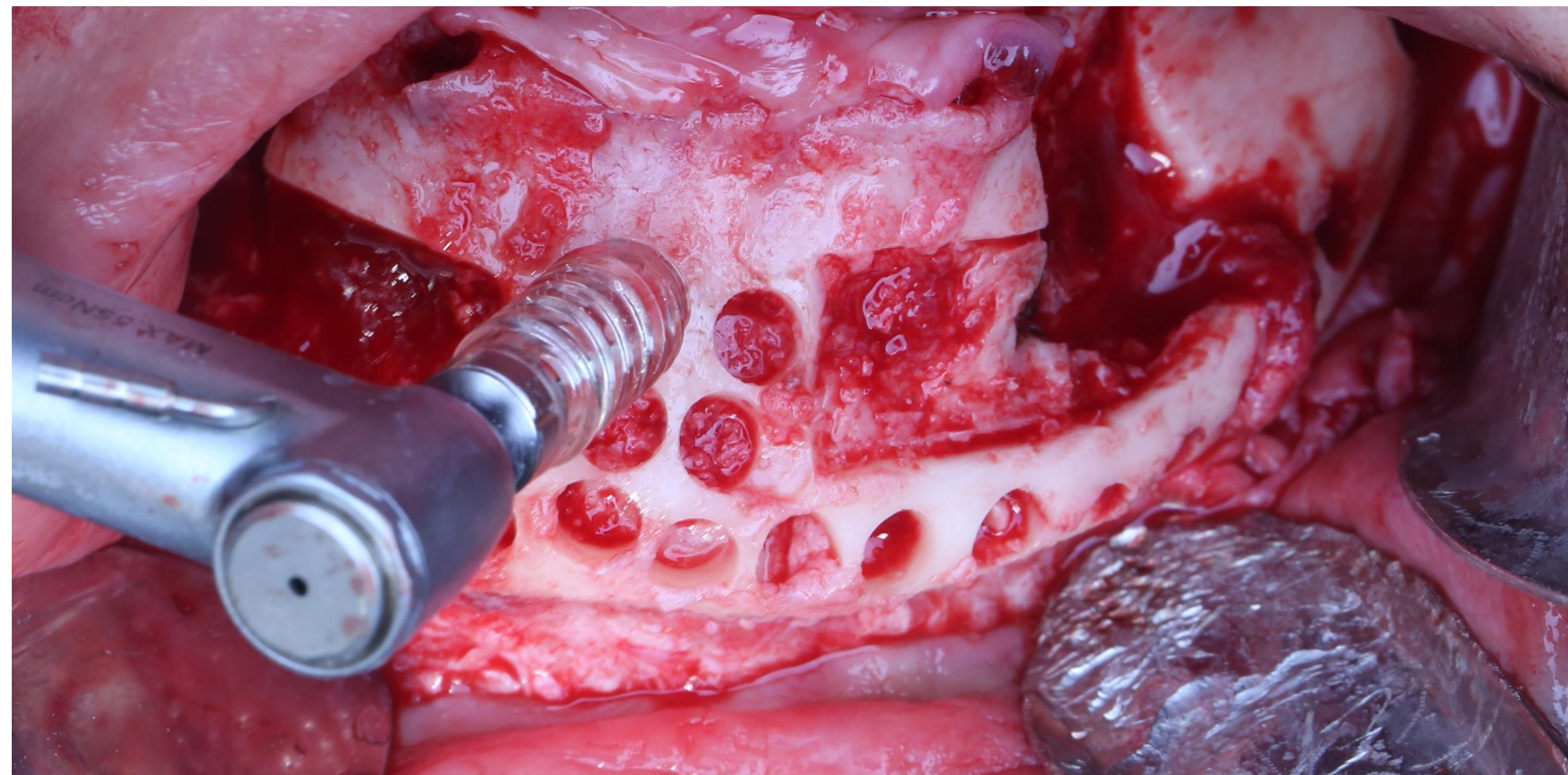
New Position of the mental nerve



Osteotomy Cuts using piezoelectric design



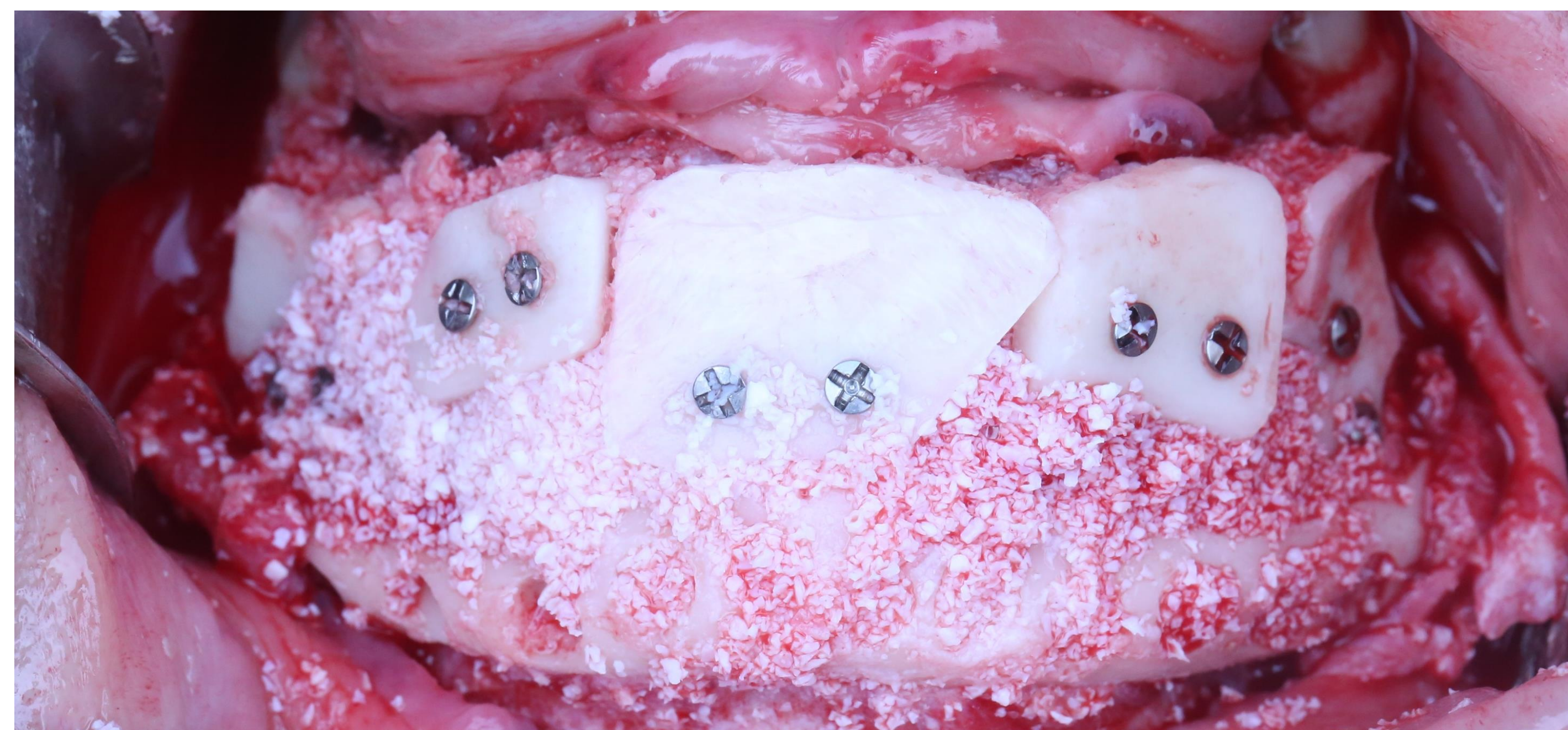
Roundation of sharp edges of harvested blocks using piezo



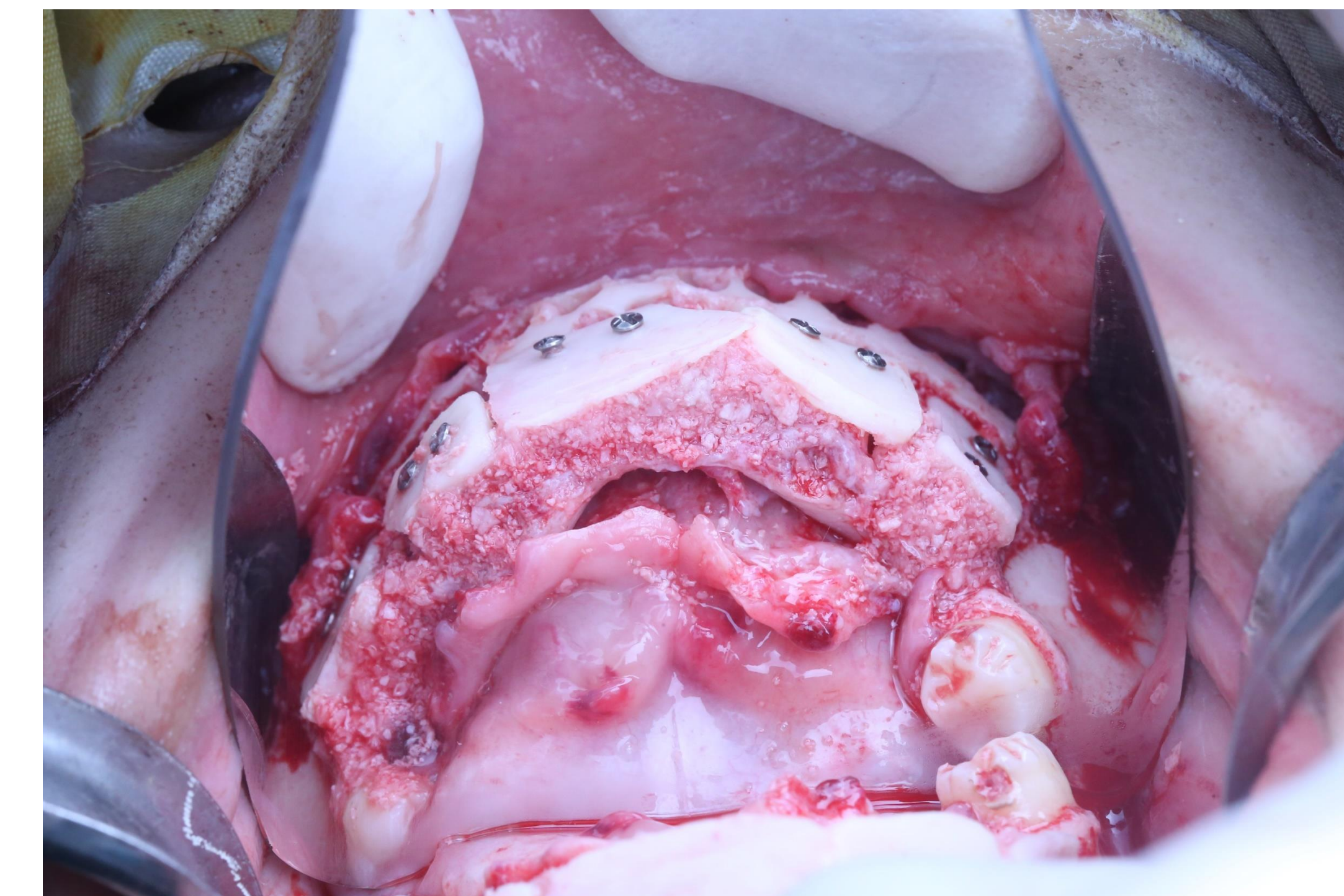
Autogenous Bone Harvest using ACM Bur



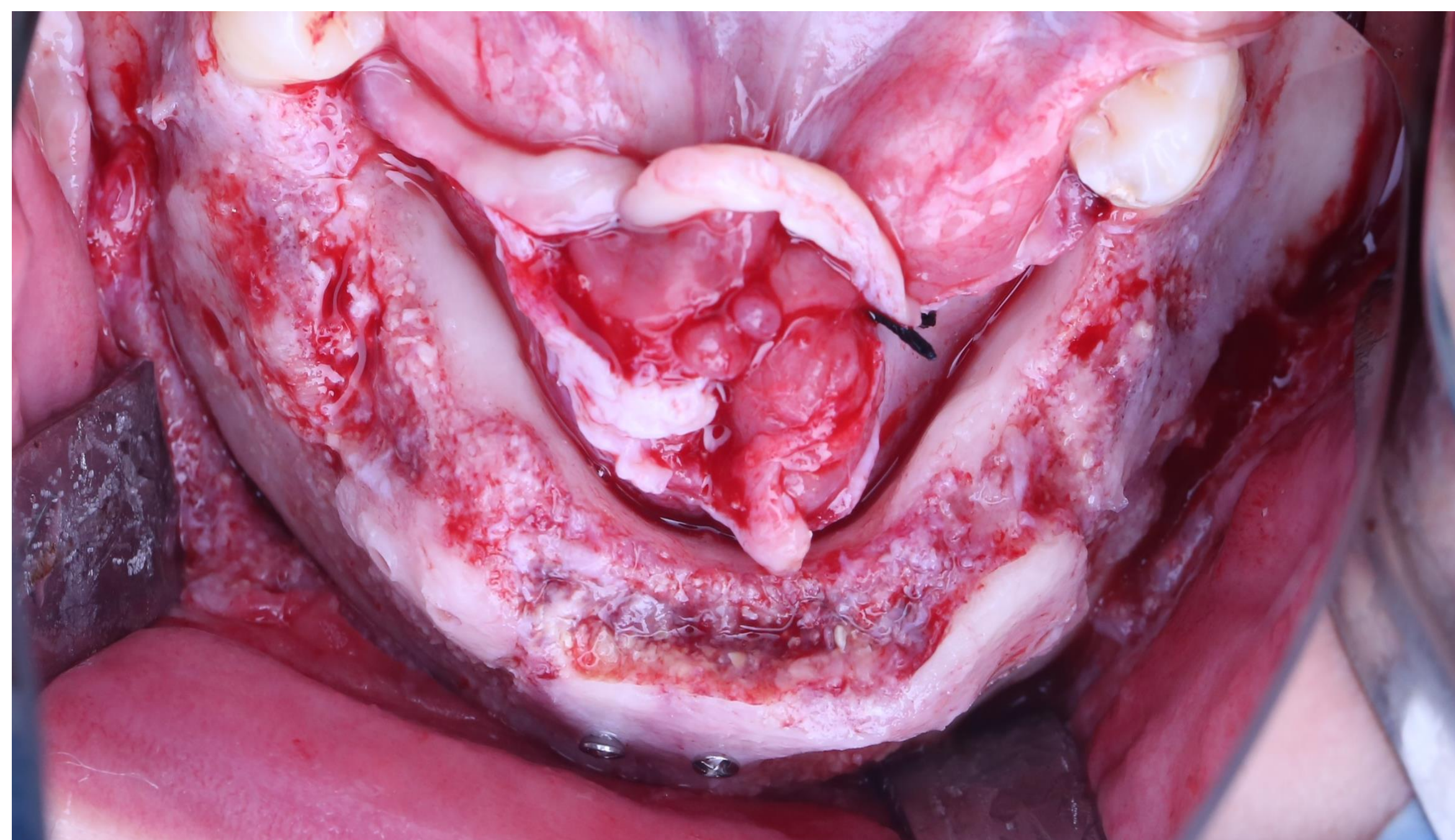
70:30 Auto: Xeno Particulates



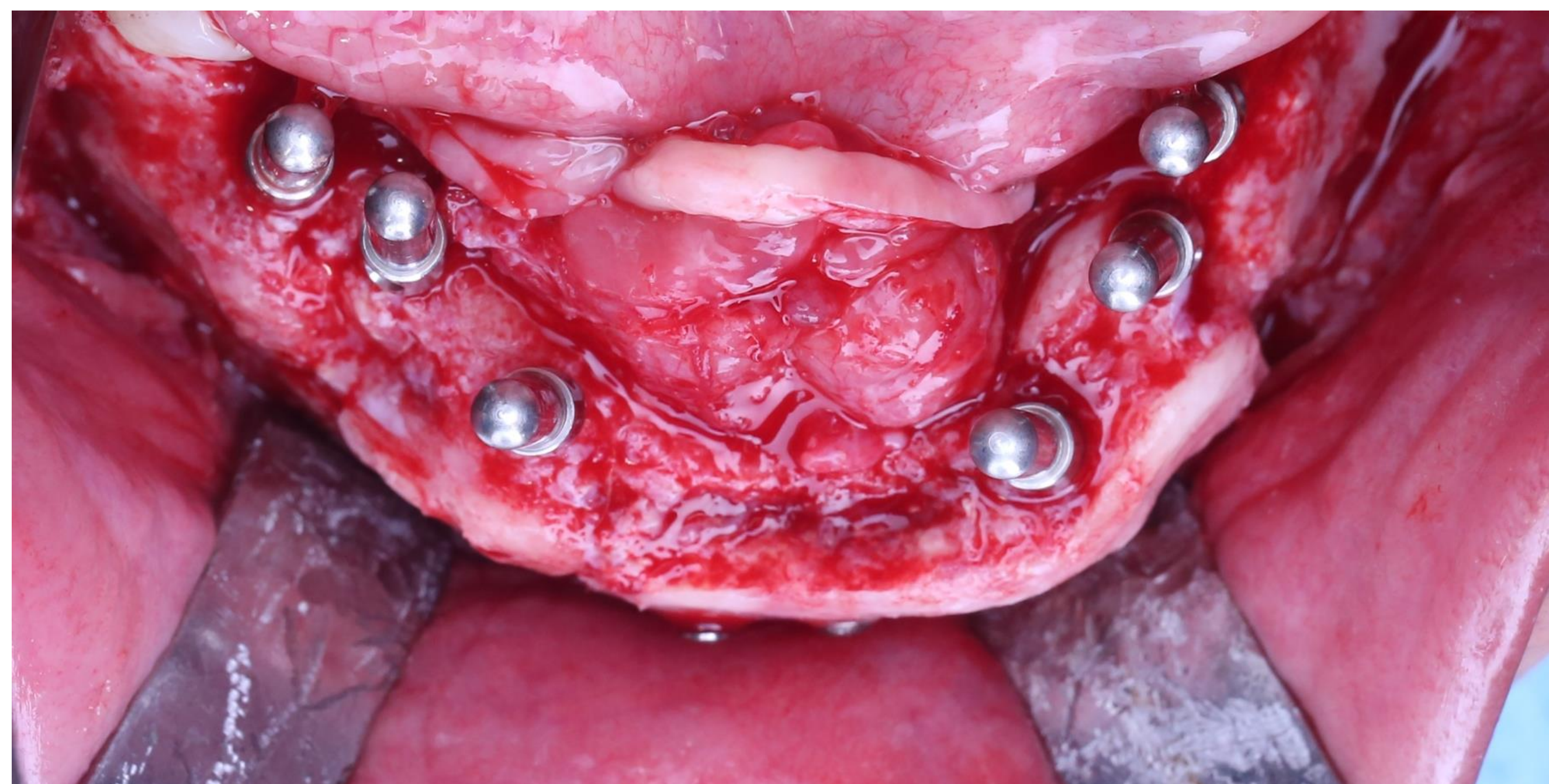
Frontal View of Fixated Blocks



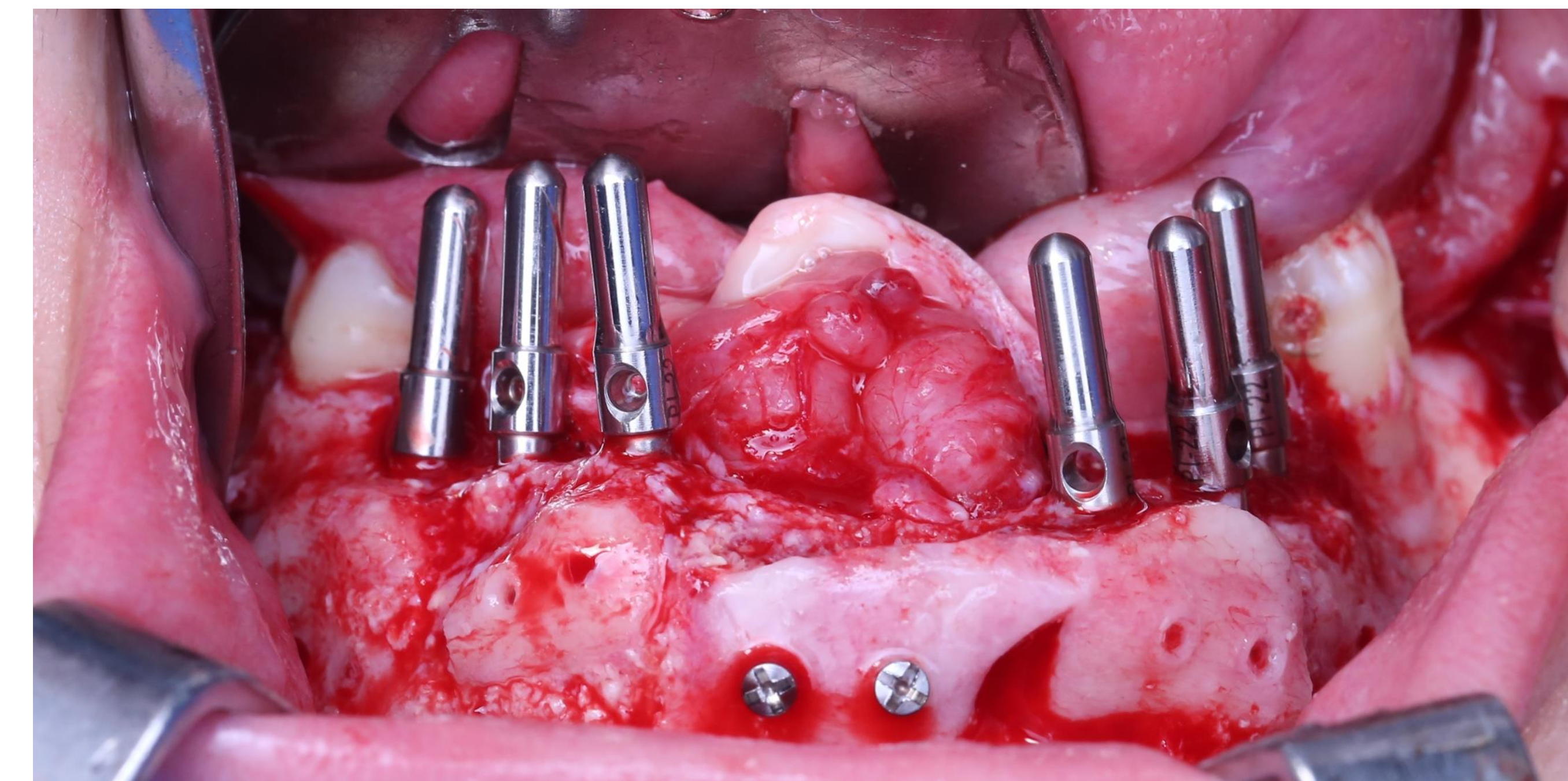
Occlusal View of Fully Augmented Arch Horizontally & Vertically



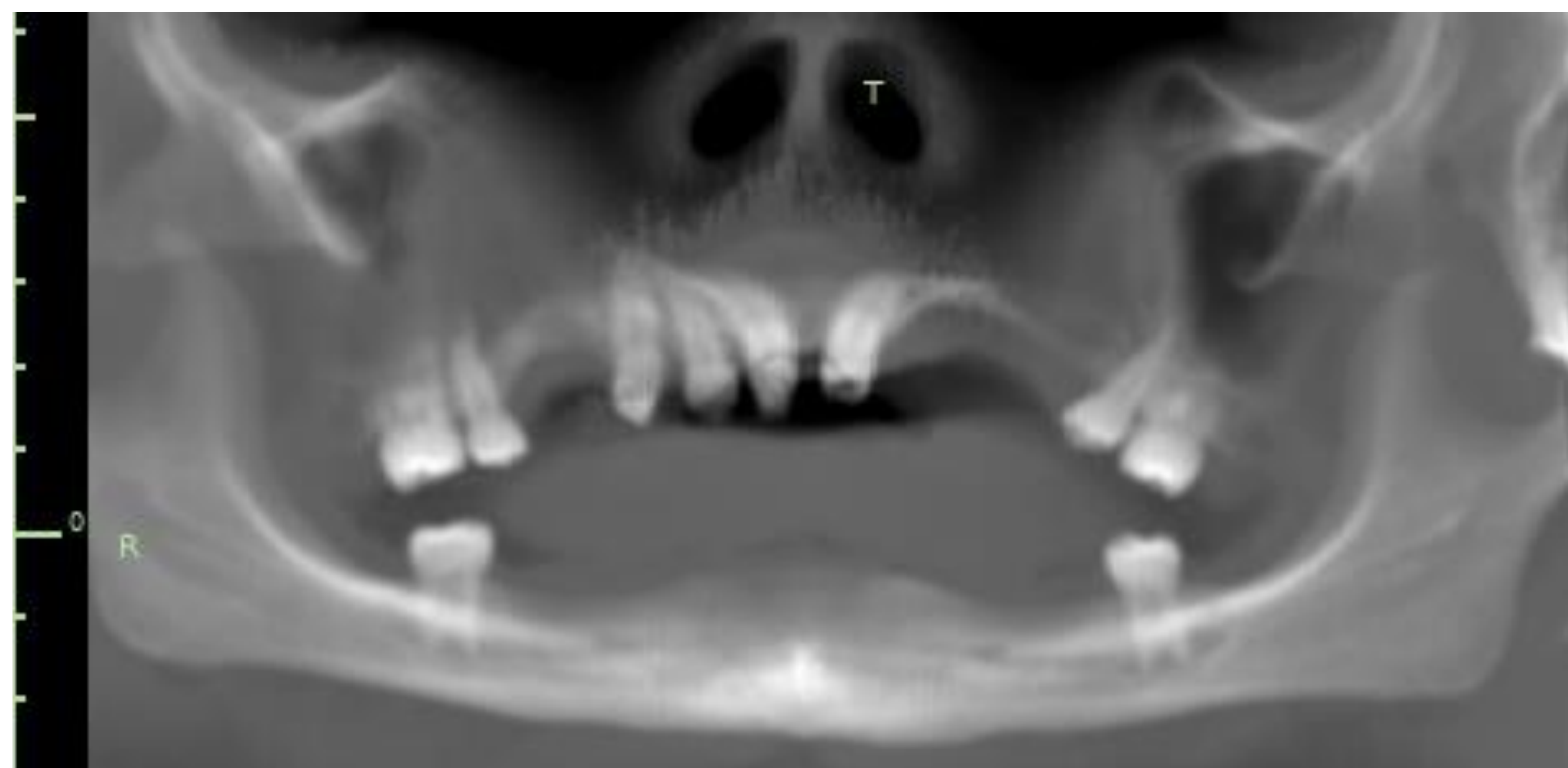
Flap reflection showing consolidated graft with adequate width



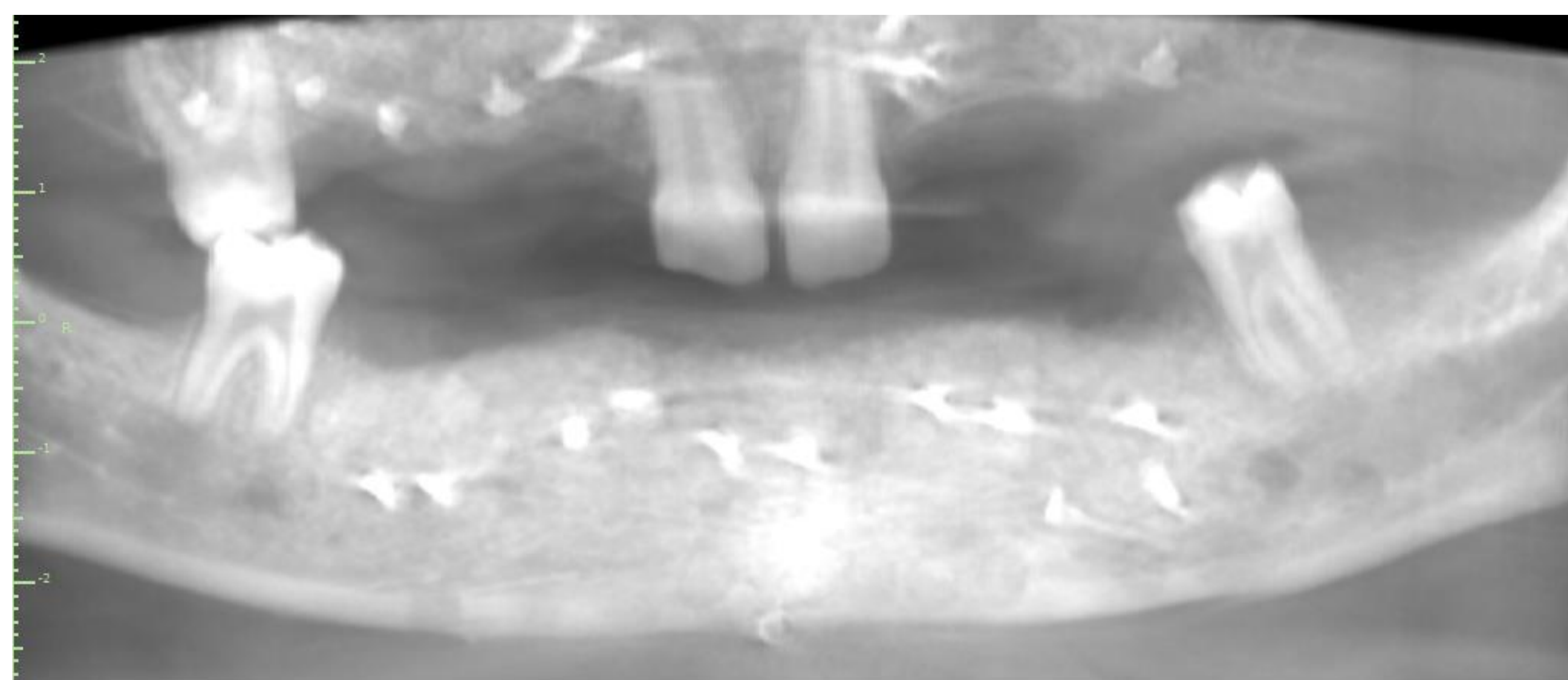
Occlusal View of paralleling pins



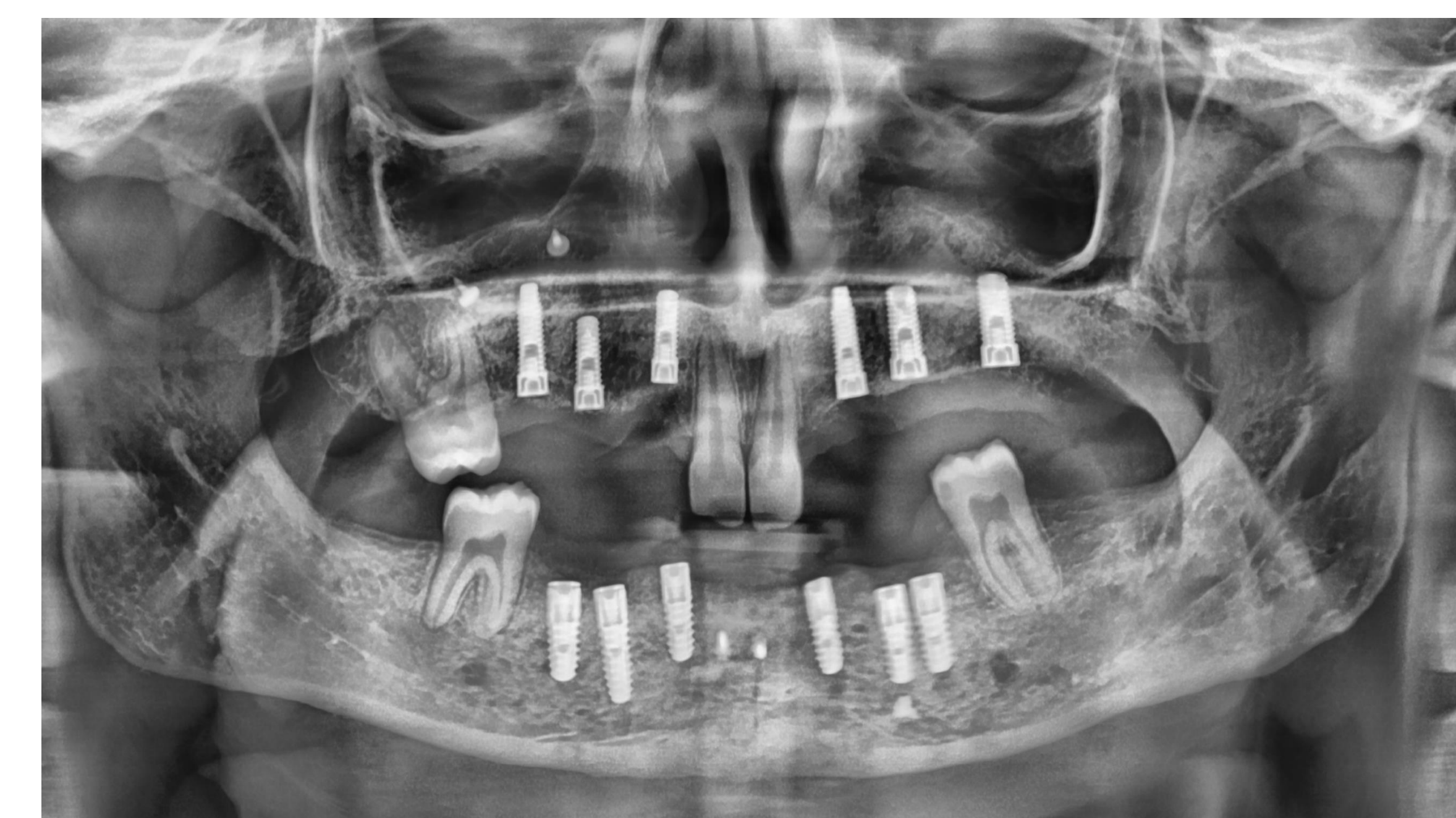
Frontal view of paralleling pins



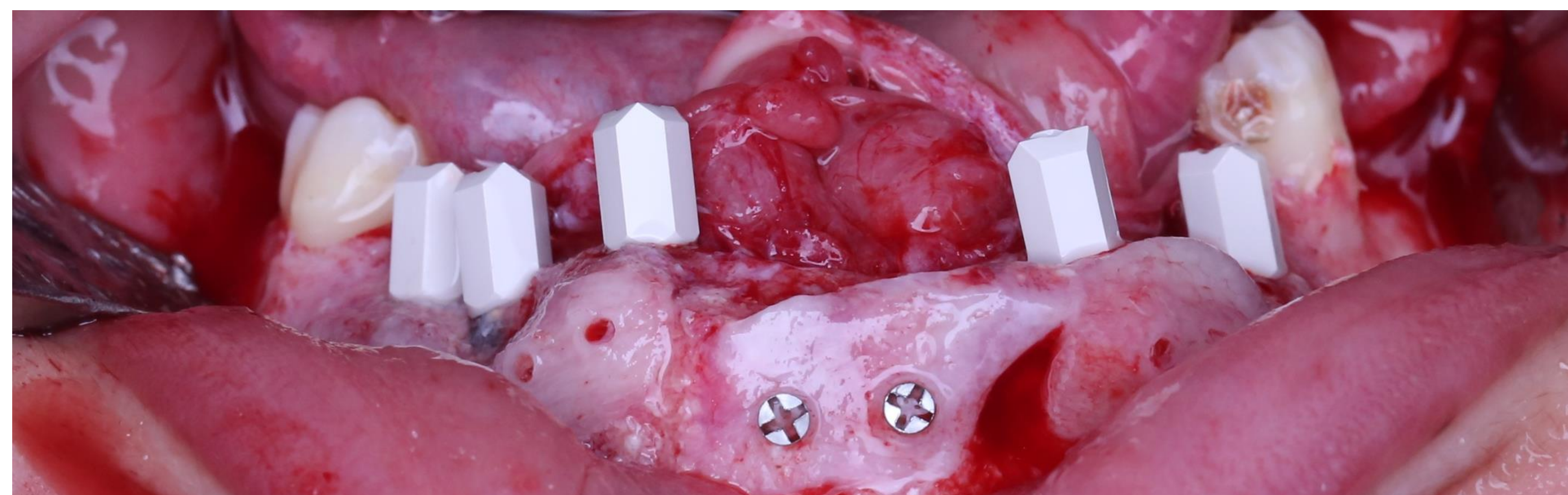
Preoperative panoramic view



Postoperative Panoramic radiograph showing newly distalized mental foramen & reconstructed mandibular ridge and implant rehabilitation



Frontal view of intraoral scan bodies fixation



Provisional bridge try in



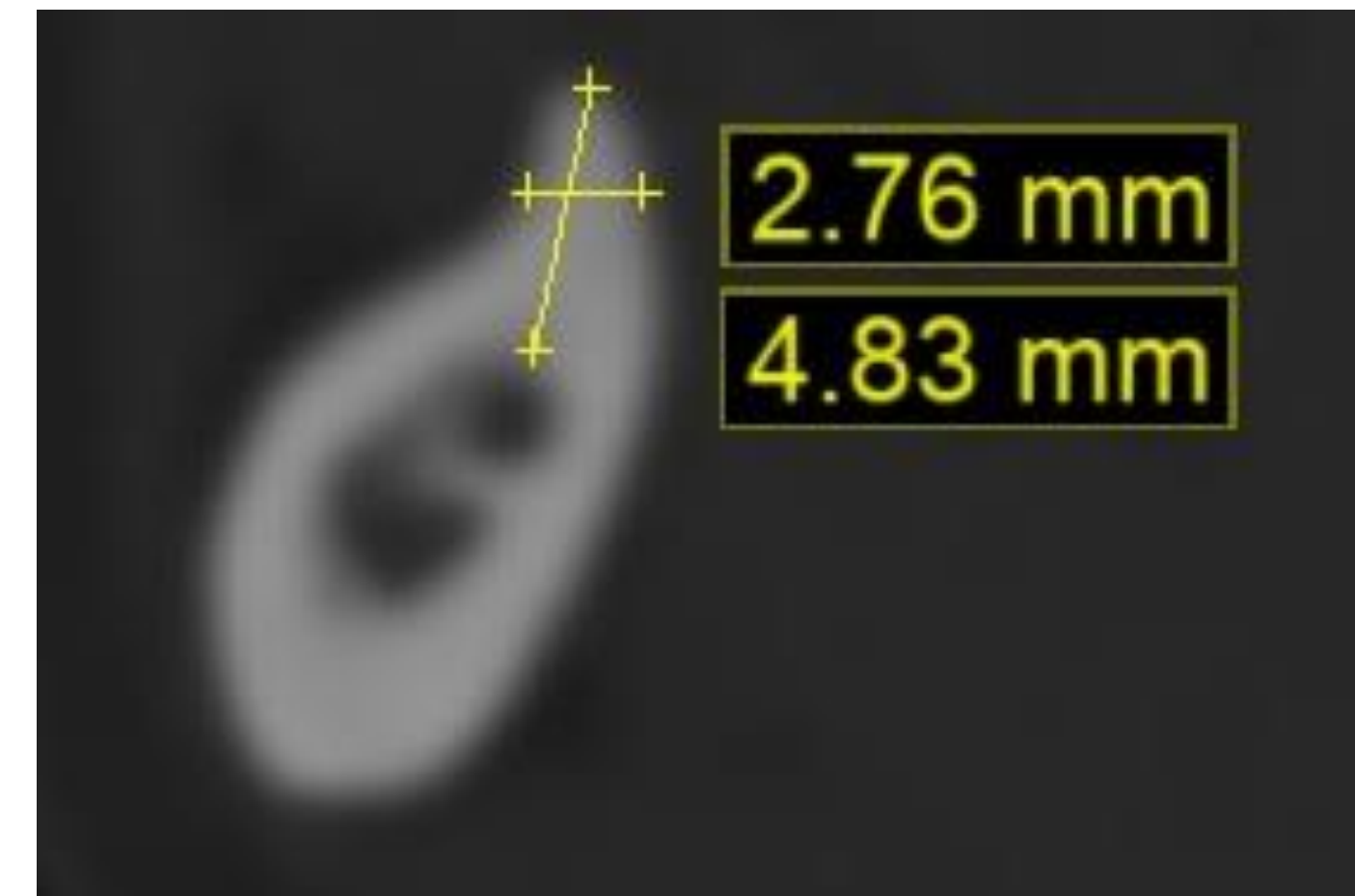
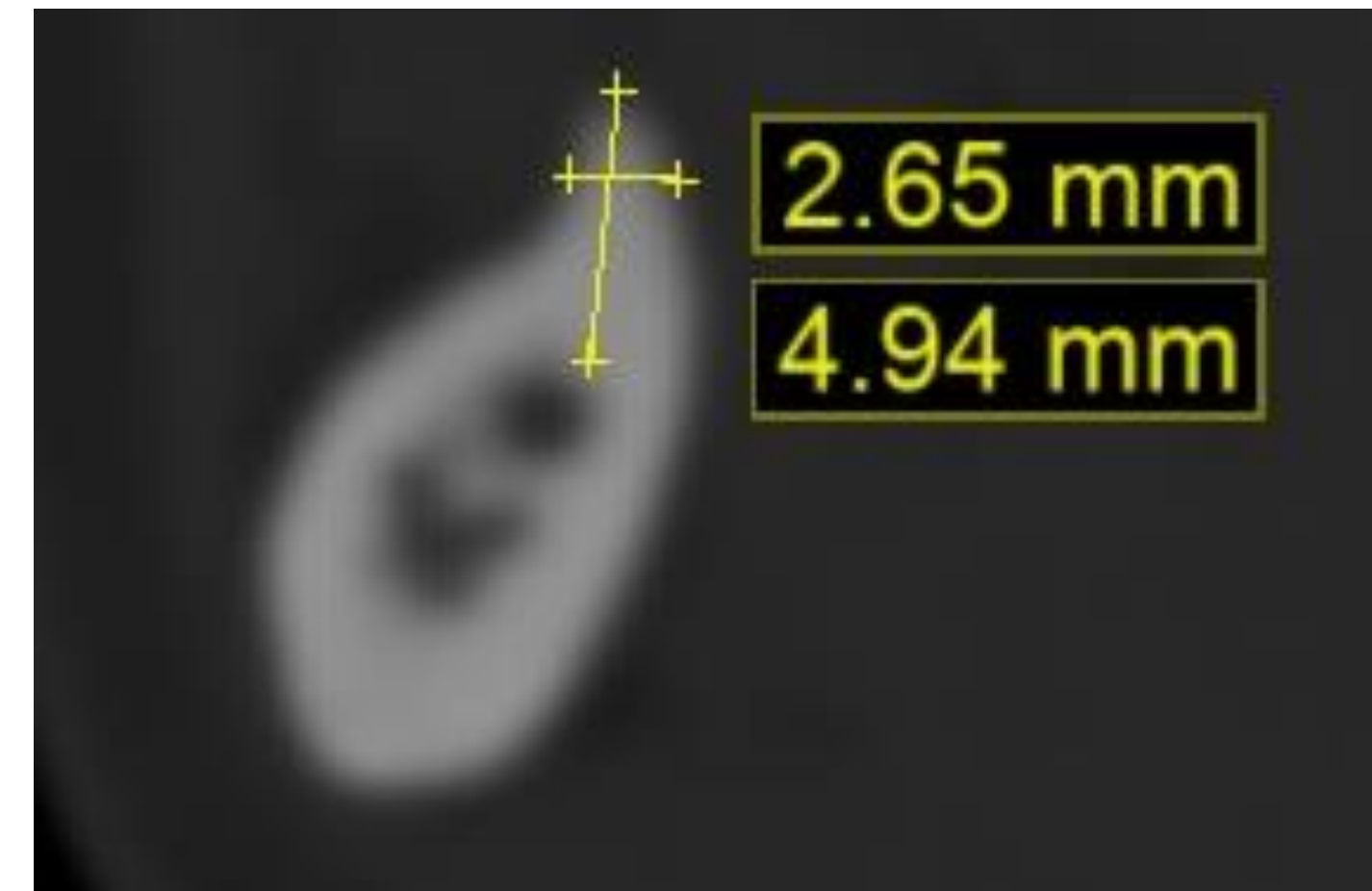
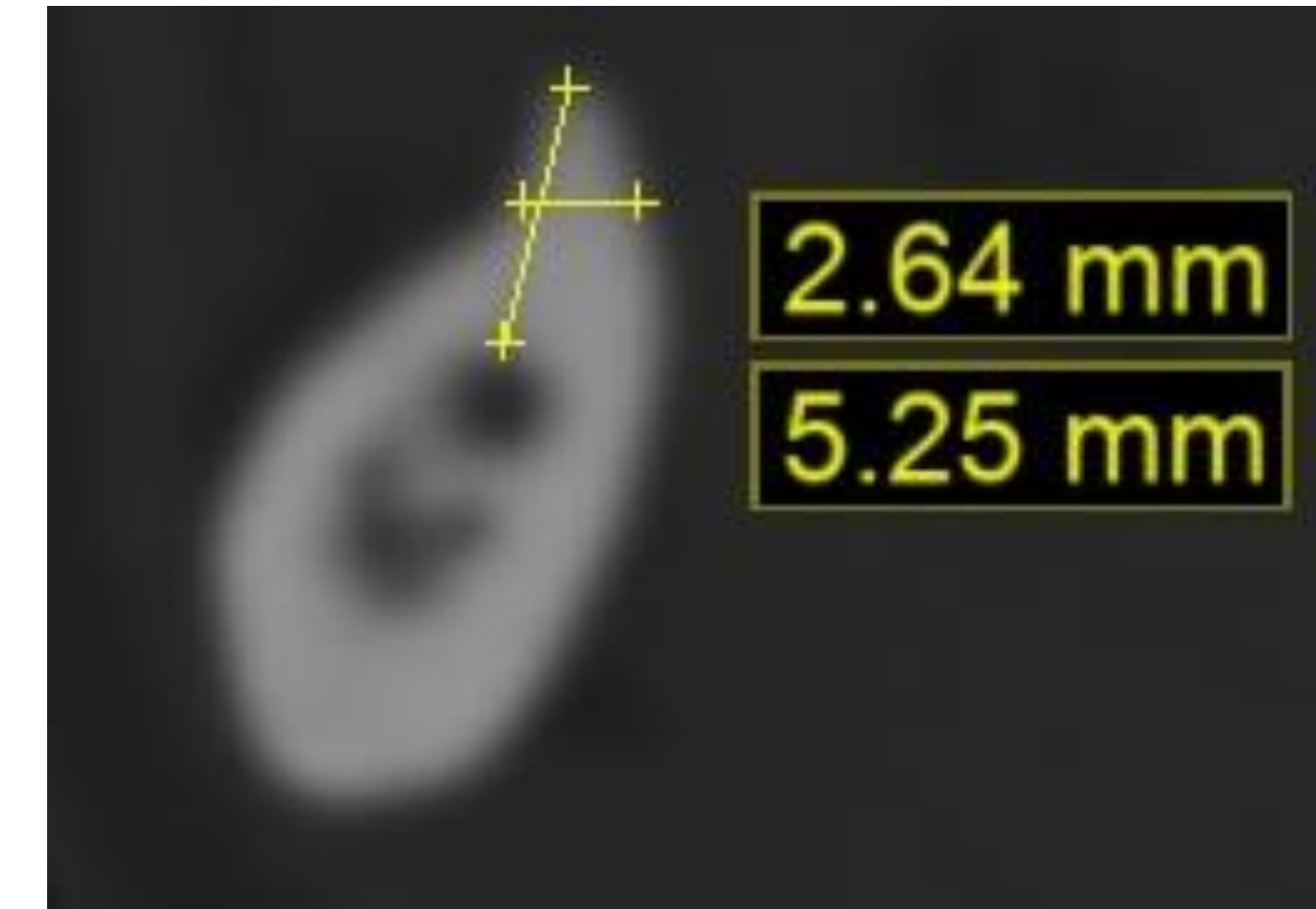
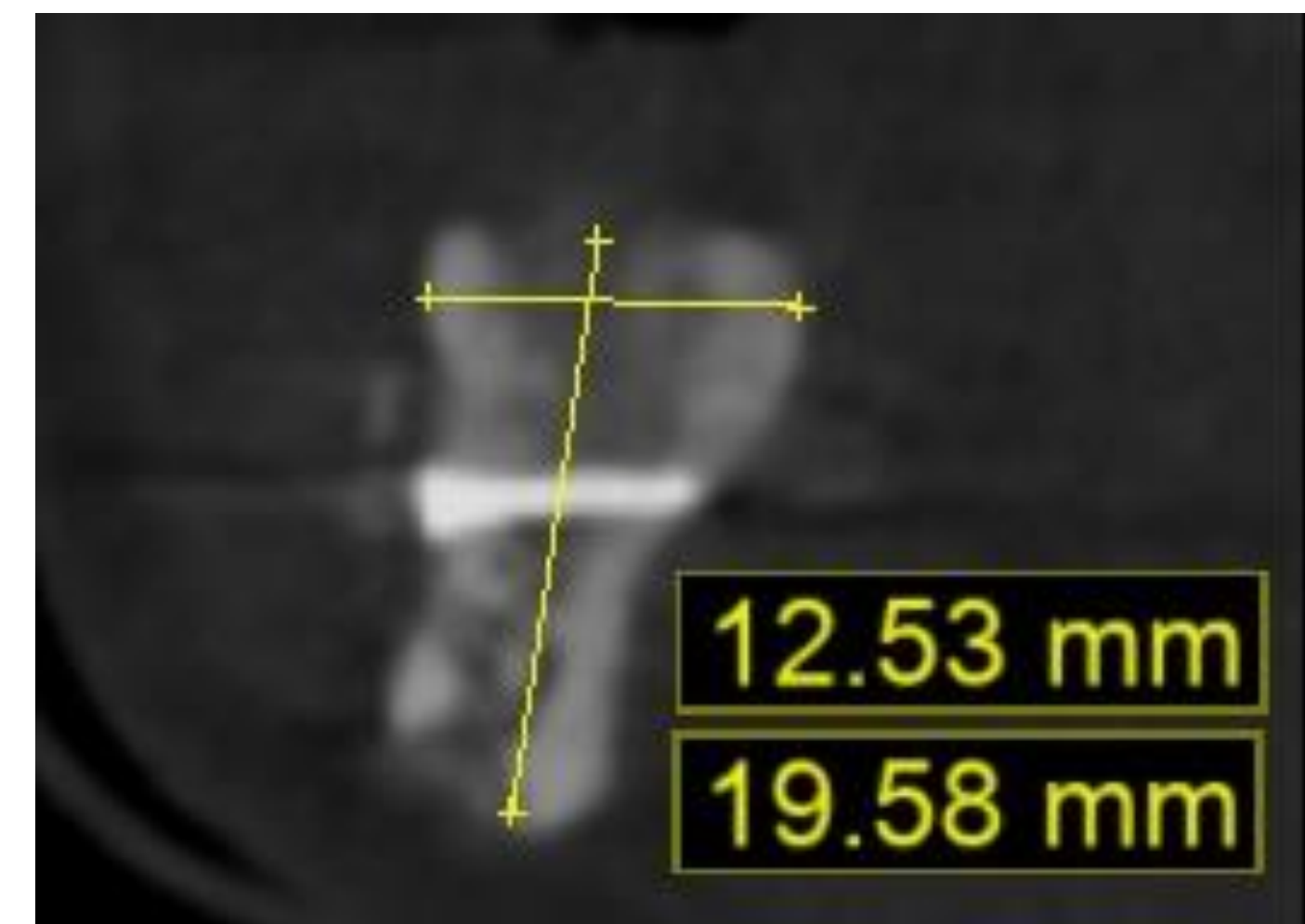
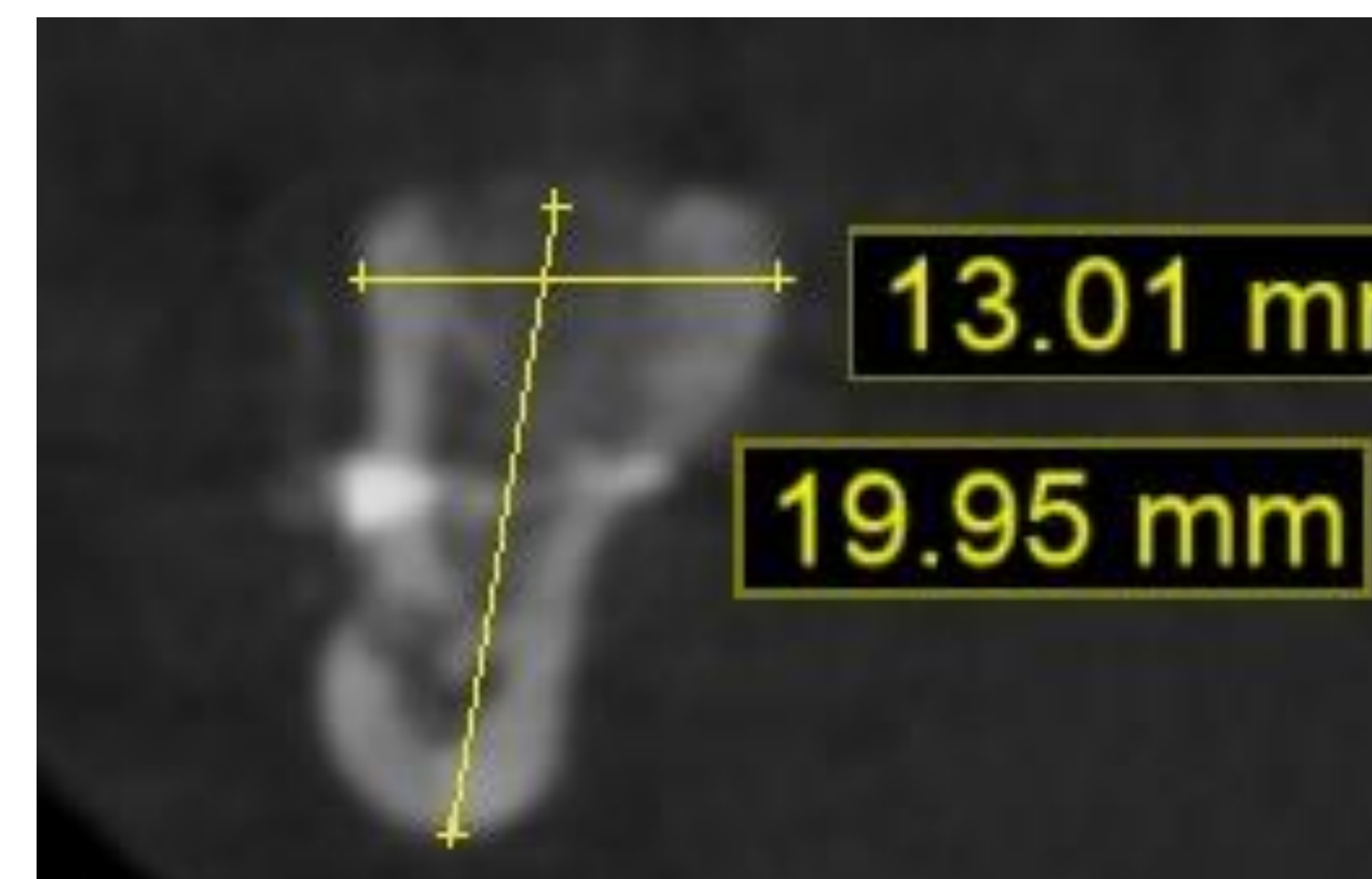
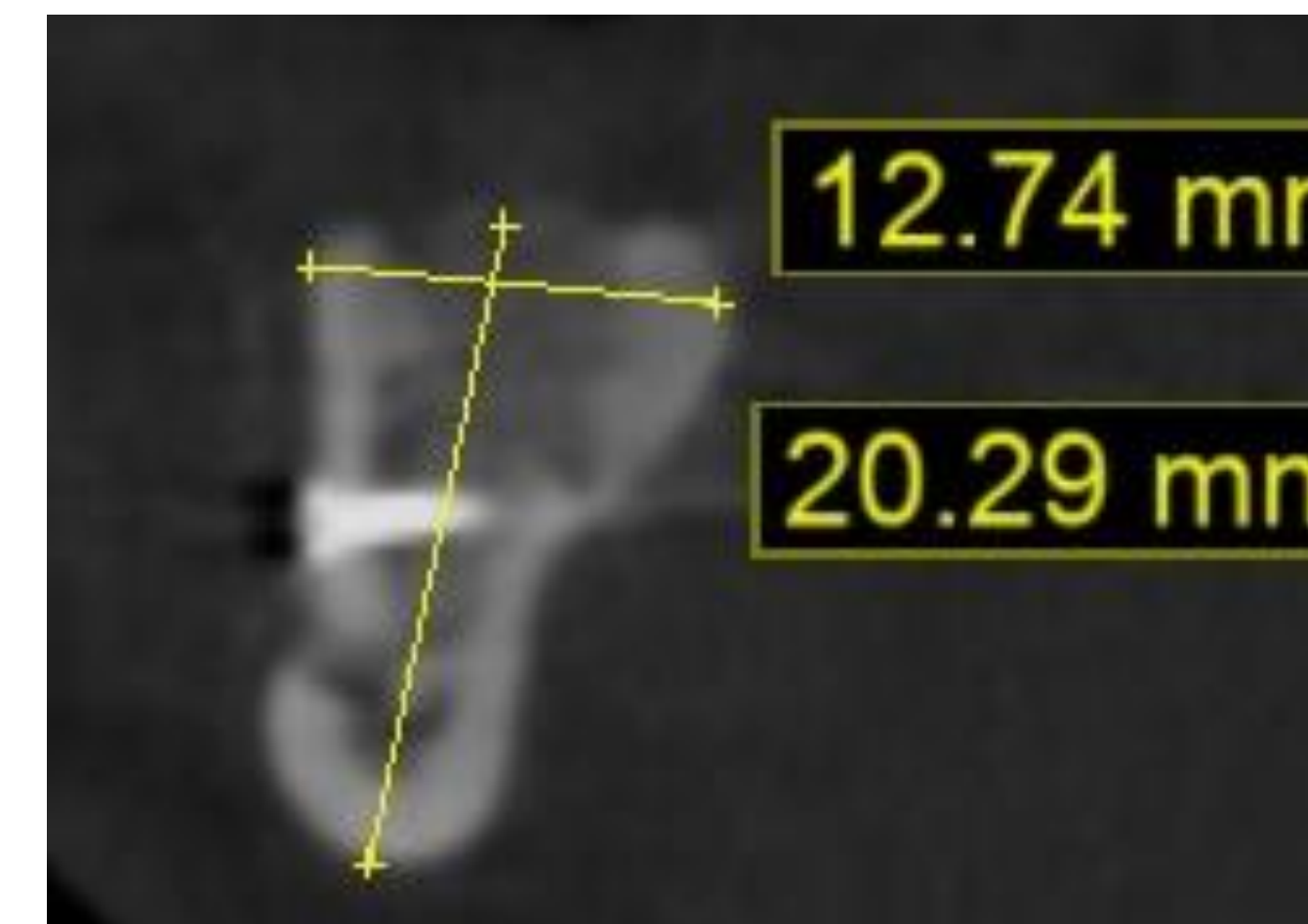


Fig. 1: Preoperative CBCT cross section.



Results: All cases showed uneventful healing postoperative with no complications regarding wound dehiscence, infection or neurosensory recovery except for single patient that exhibited complete recovery after 14 weeks . Four months postoperatively, all the patients showed significant amount of bone gain , consolidated cortical windows and newly distalized mental foramen that allowed successful dental implants placement. The average bucco-lingual dimension of the alveolar ridges six months postoperative was $13 \pm 1.8 \text{ mm}$ while vertical bone gain was ranging from 19-20 mm

Conclusion: Combined Ridge Splitting two stage mental foramen distalization is a predictable and safe technique for vertical and horizontal mandibular reconstruction .