

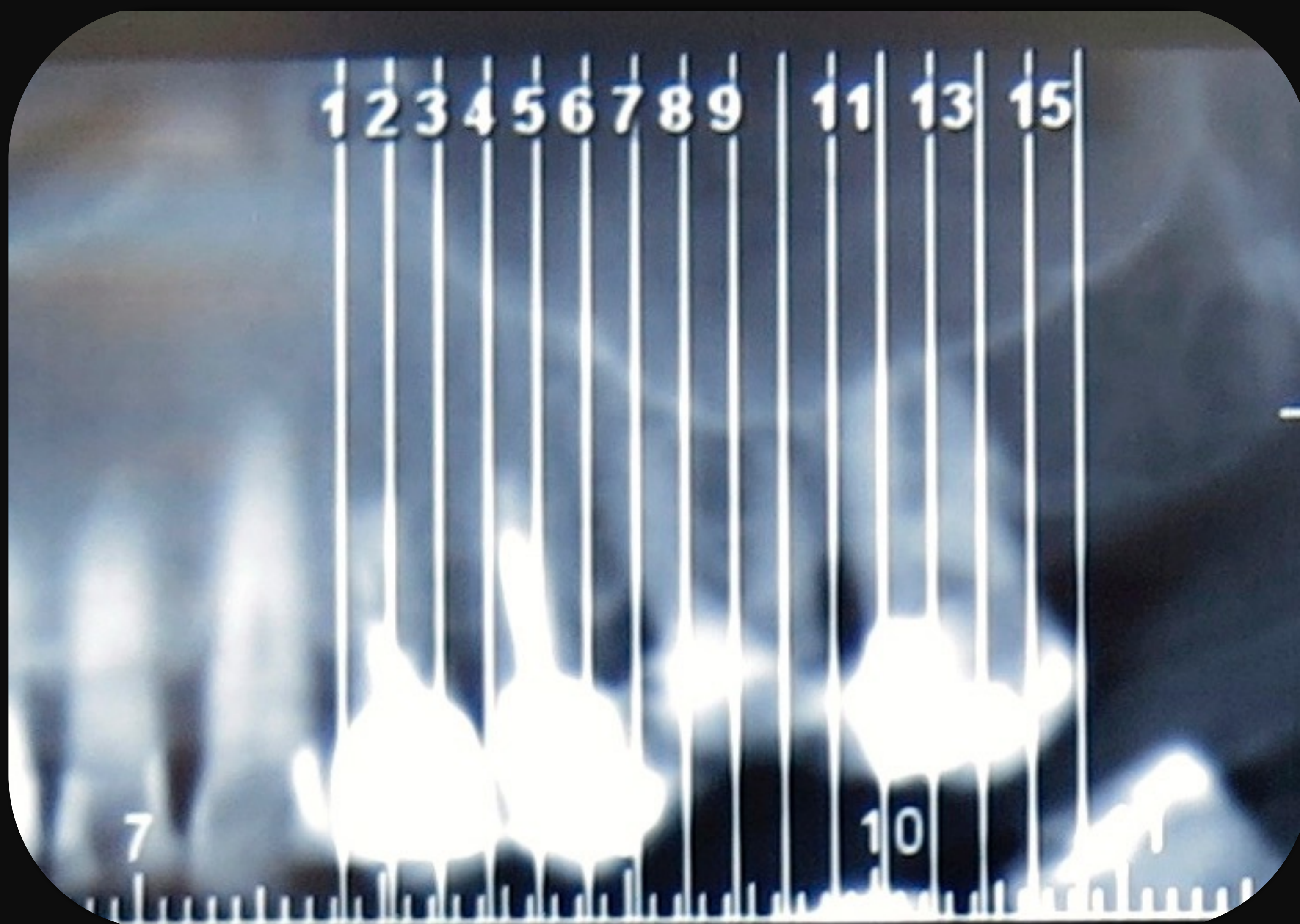
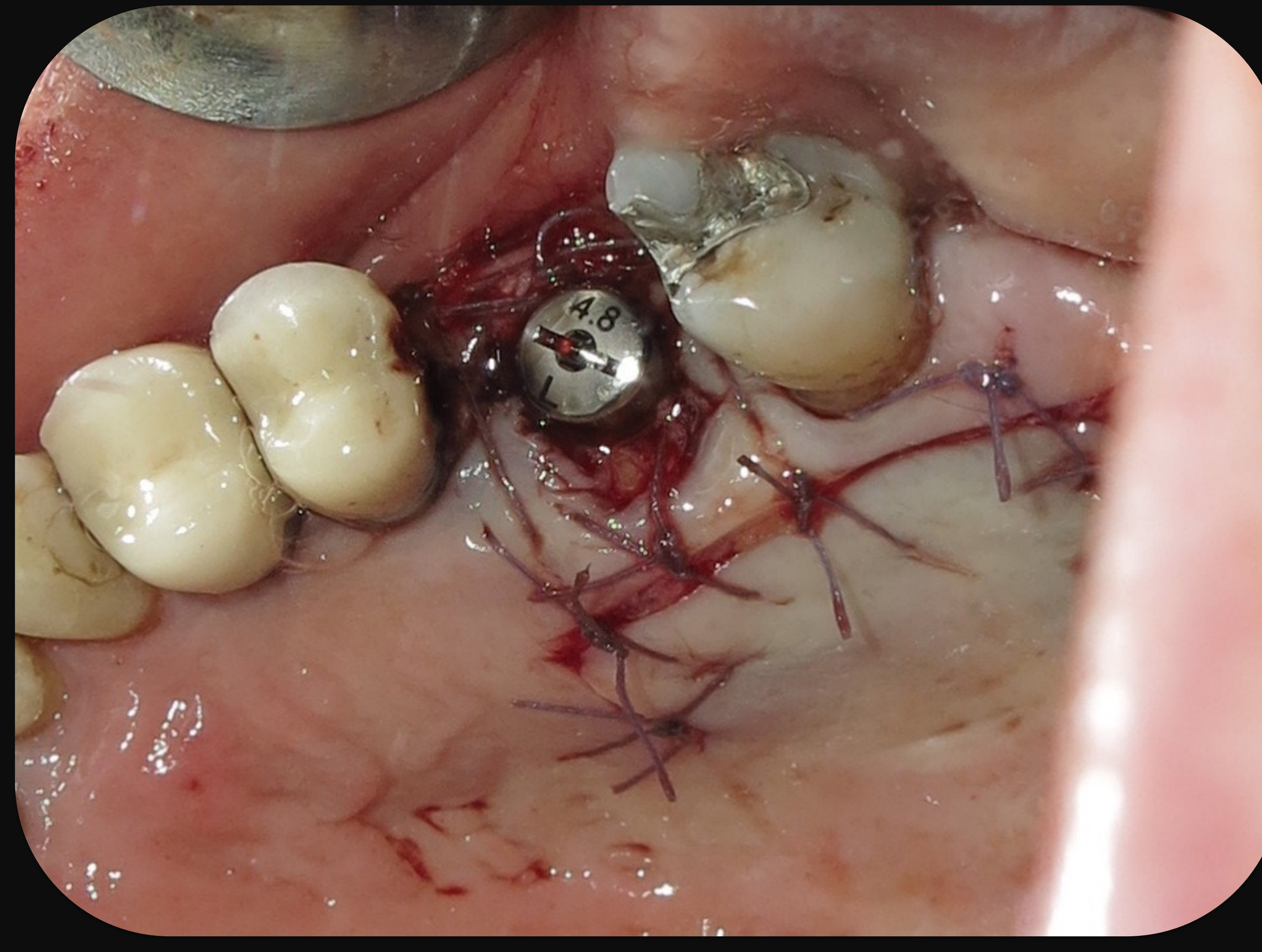
# Time and Tissue Saving with Trephine in Immediate Implant Insertion without Soft Tissue Buccally Flap Advancement

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## INTRODUCTION

One of the basic and primary needs of implant placement is the presence of sufficient quantity and quality of bone to obtain initial stability. The most challenging area is the posterior of the maxilla because there is a possibility of pneumatization if there is a gap between the time of extraction and the replacement of the lost tooth. Mandibular dental implants have contributed to the re-establishment of masticatory function after tooth loss. Here, we describe a case of immediate implant insertion in the posterior maxilla and mandible using a novel technique.

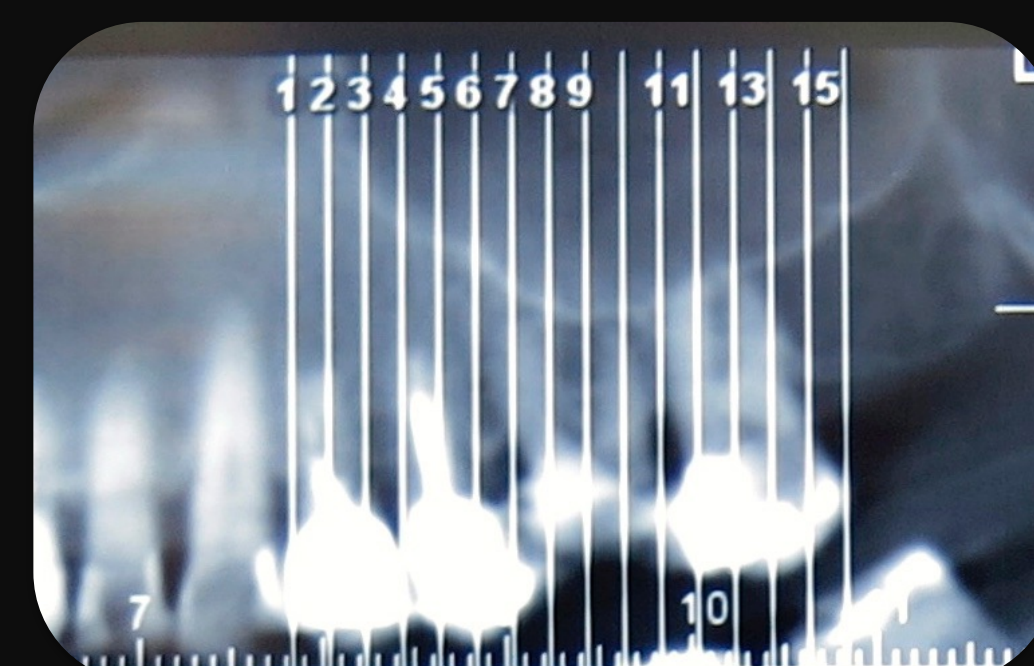




## METHODS

In some patients, the hopeless maxillary first molar was a candidate for extraction and implant placement was planned. CBCT was taken and the bone height between the roots was found insufficient for immediate placement of a standard implant. The tooth was extracted without trauma, and a trephine bur was used through the septal bone to the 1.5 mm below the sinus floor. The cut bone was pushed into the sinus using an osteotome and a 10 mm implant was inserted. Then, a pedicle connective tissue/gingival graft from the palatal side was rotated over the socket to the buccal side, and a healing abutment was inserted into the implant through the graft. In the mandible after atraumatic first molar extraction, there was enough bone for immediate implant placement, and the osteotomy was performed without using routine implant drills, only using trephine burs with a slightly smaller diameter than the desired implant diameter. In the mandible for hard tissue saving, different approaches were done.

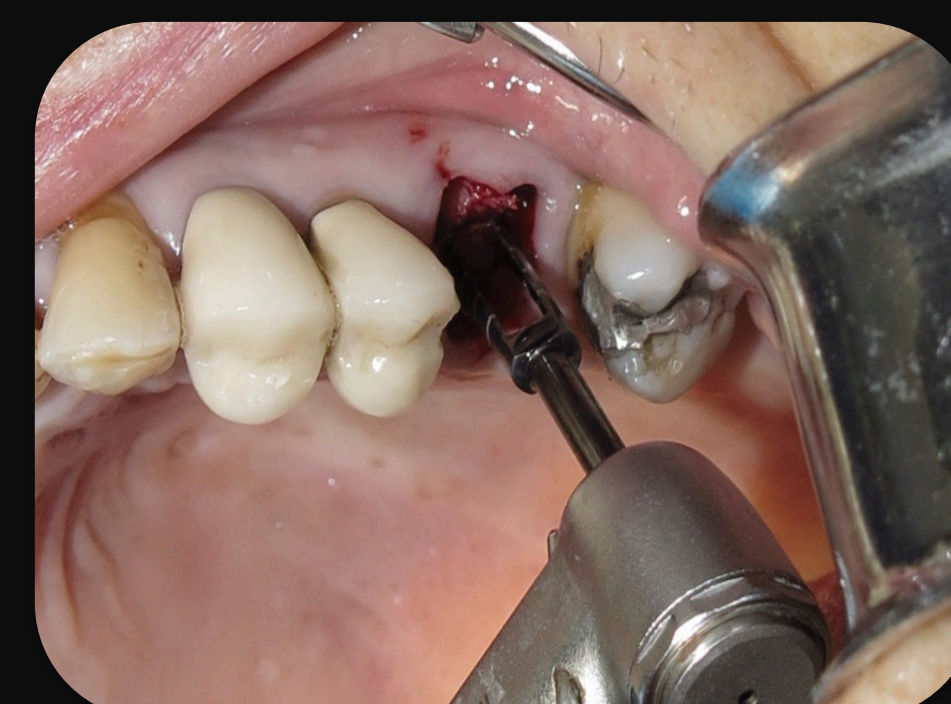
## Case 1



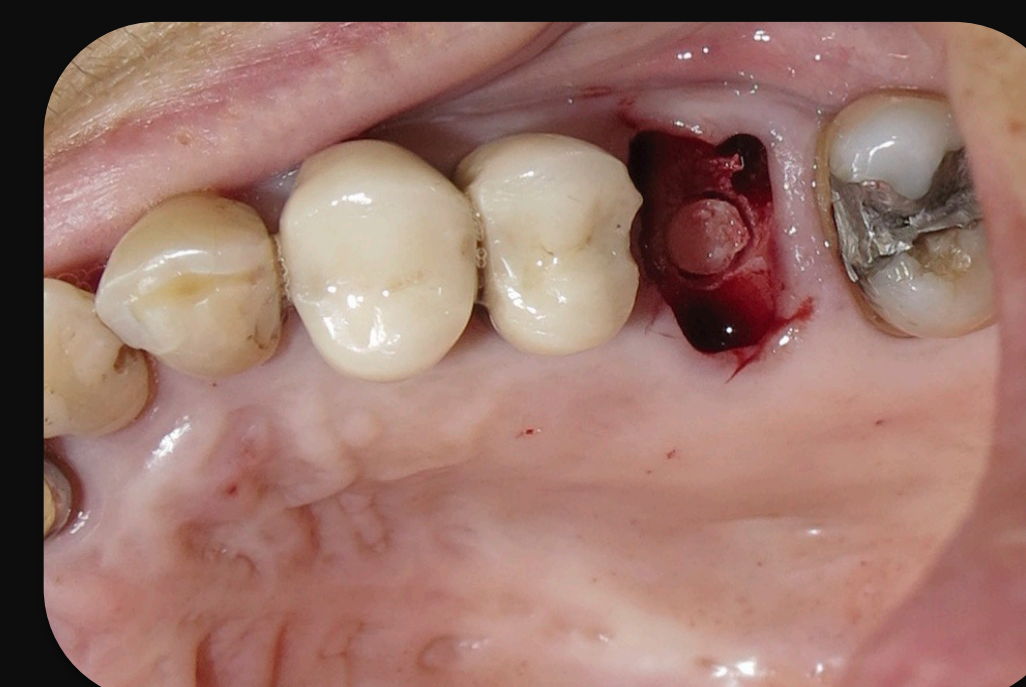
baseline CBCT



Hopeless Tooth



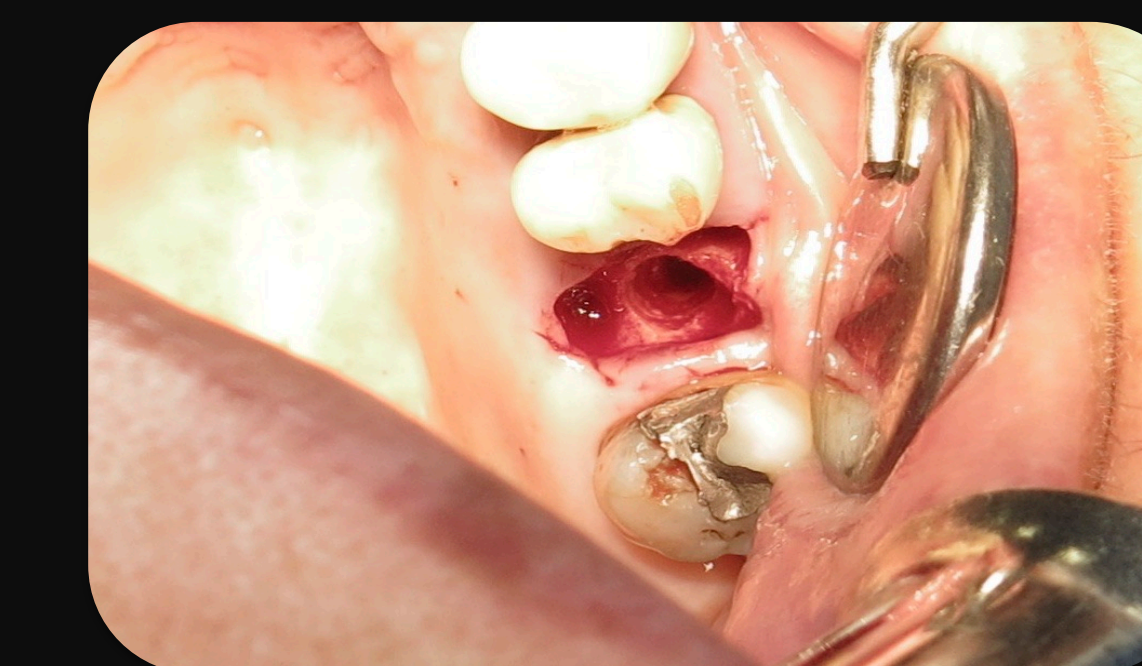
Using a trephine instead of drilling



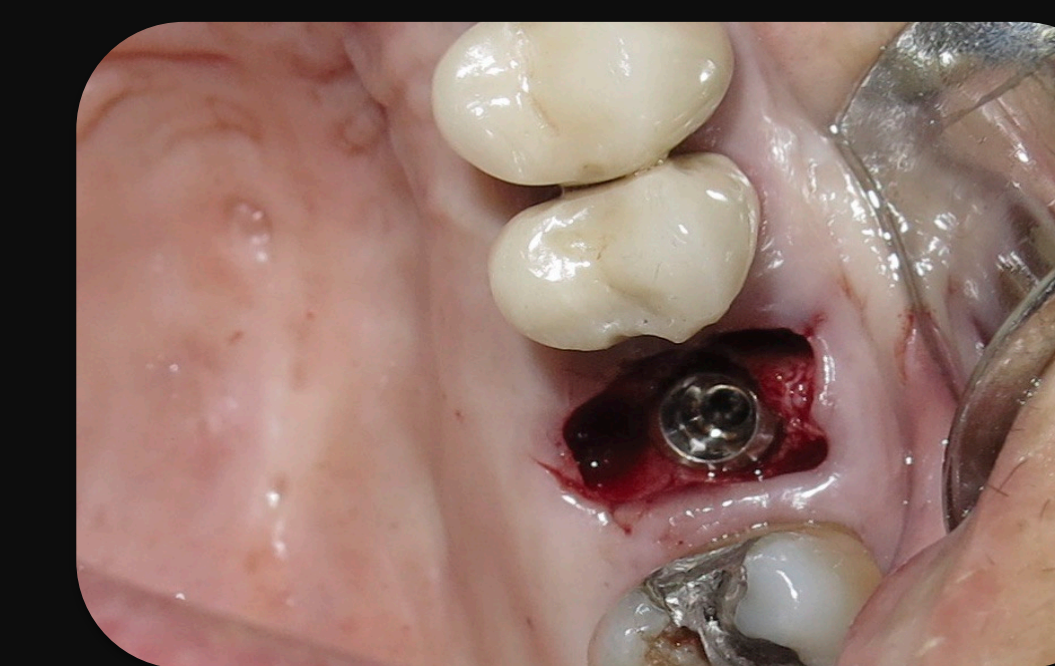
Cut bone after using trephine



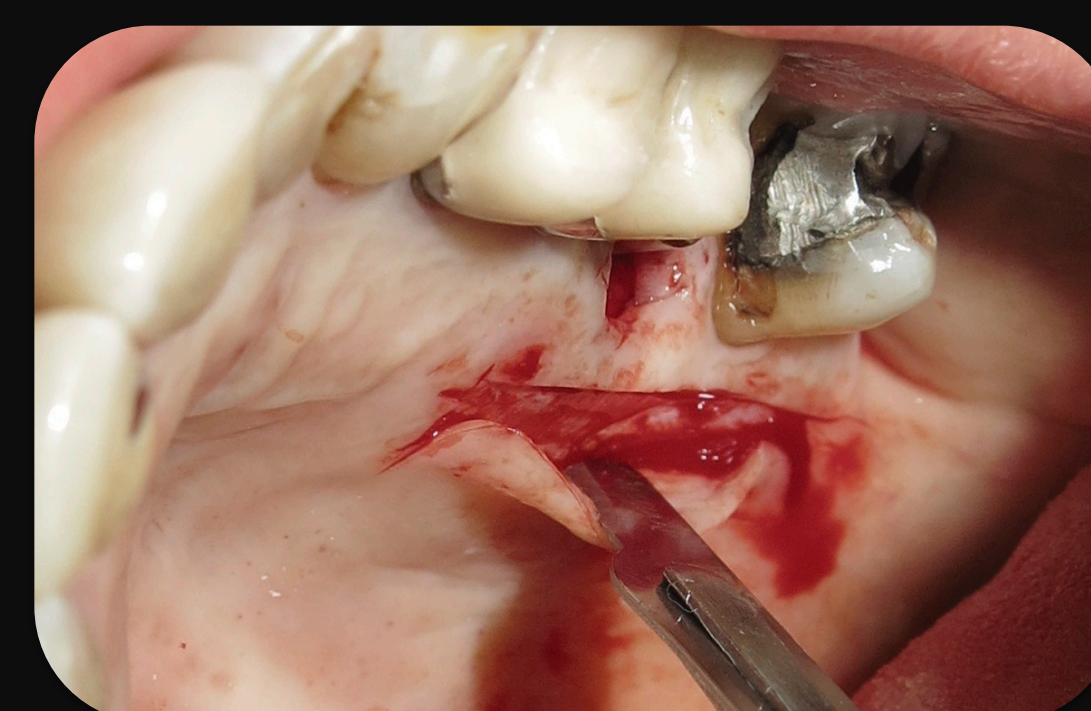
cut bone was pushed into the sinus using an osteotome



Final osteotomy hole



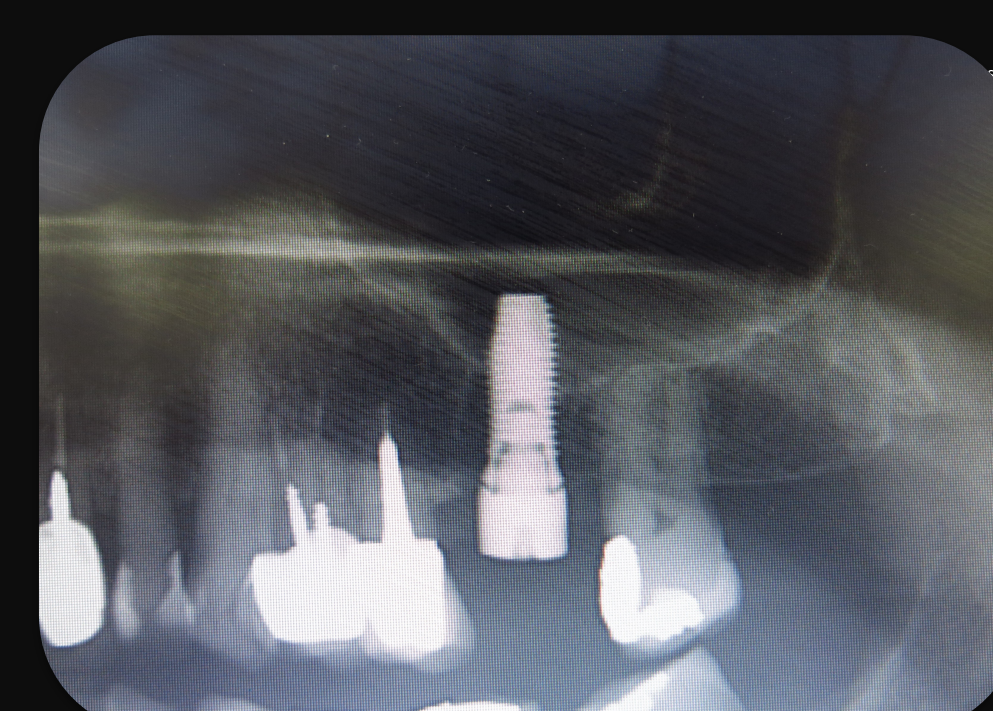
Implant inserted



Rotated palatal pedicle connective tissue graft



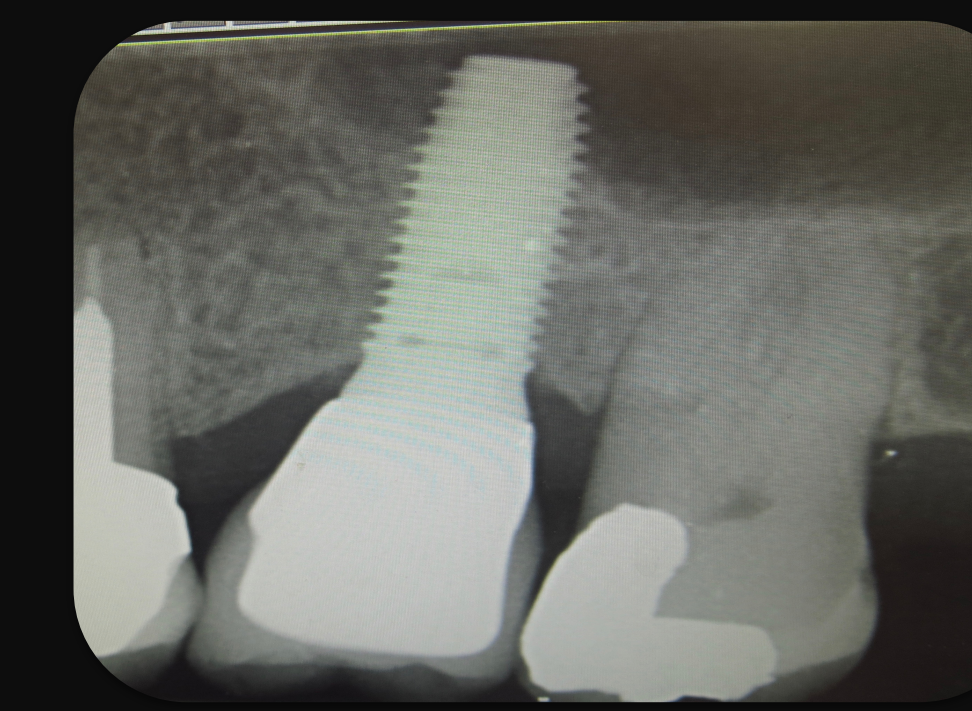
Graft fixation



Final radiography



3 month post-op



5 years follow up



5 years follow up



5 years follow up

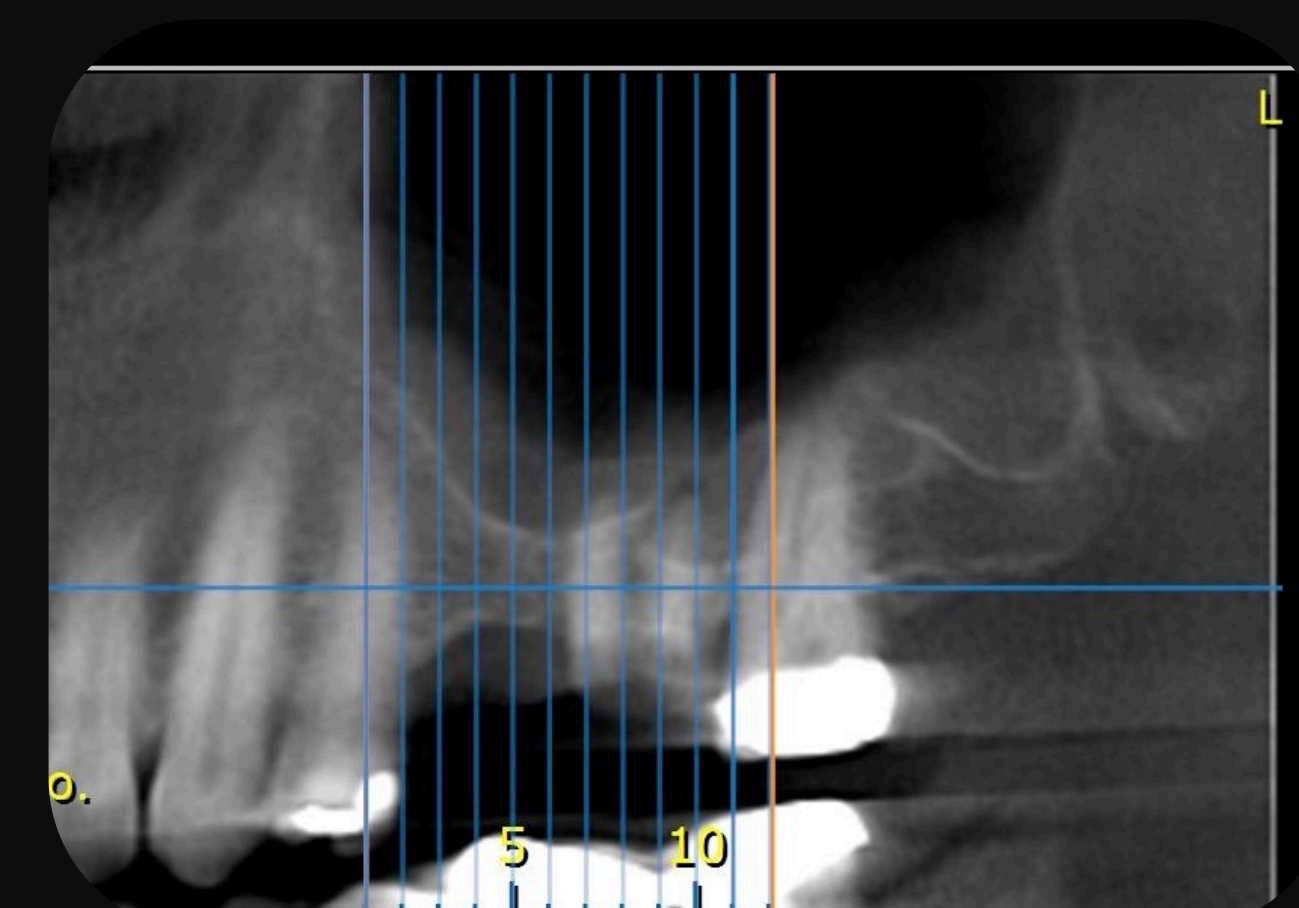


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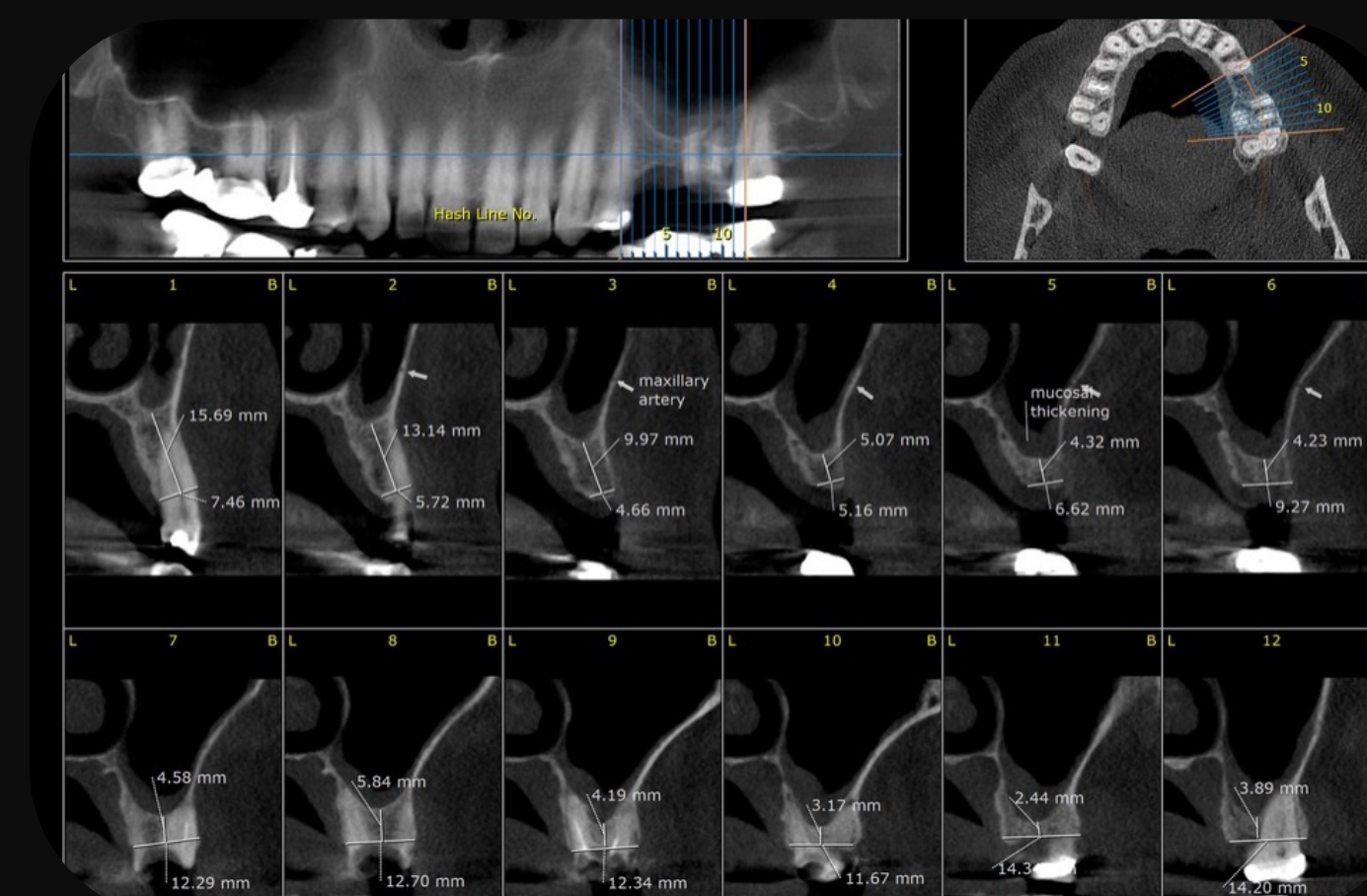
## Case 2



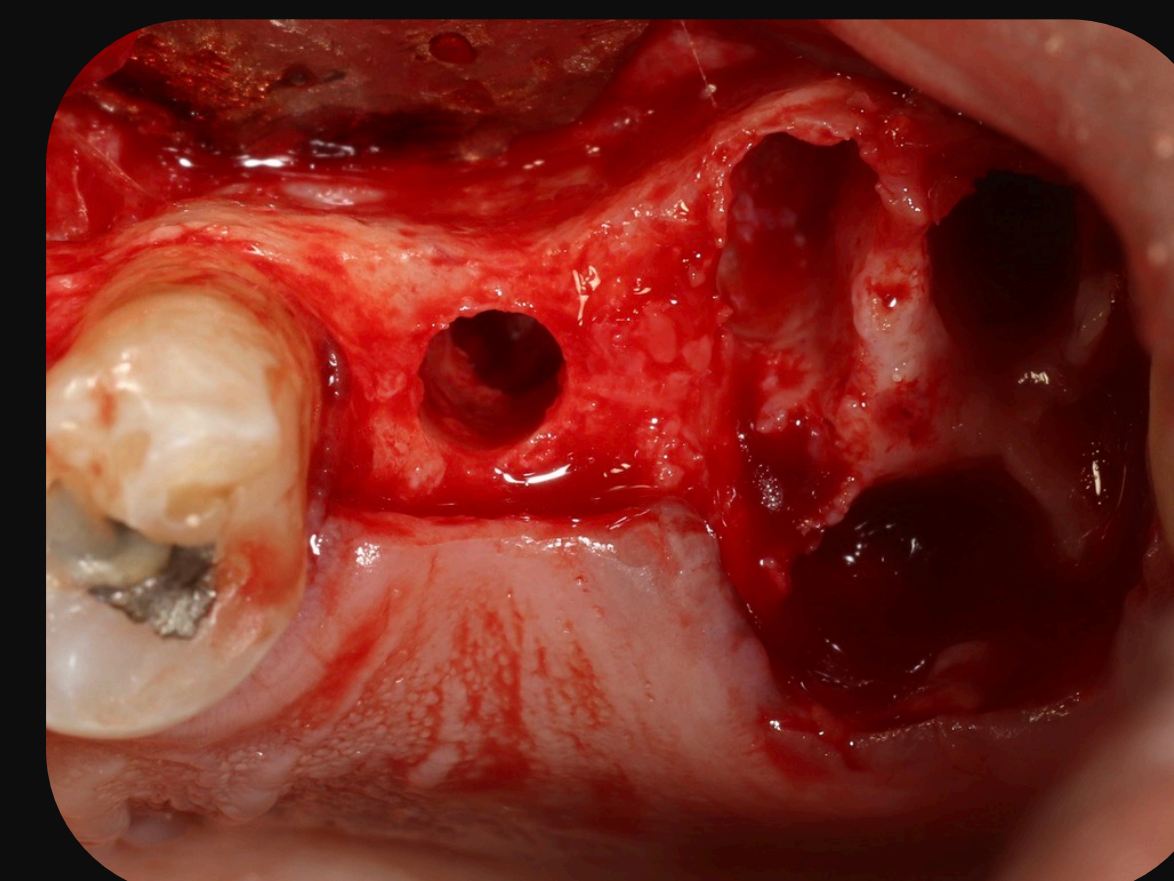
Hopeless Tooth



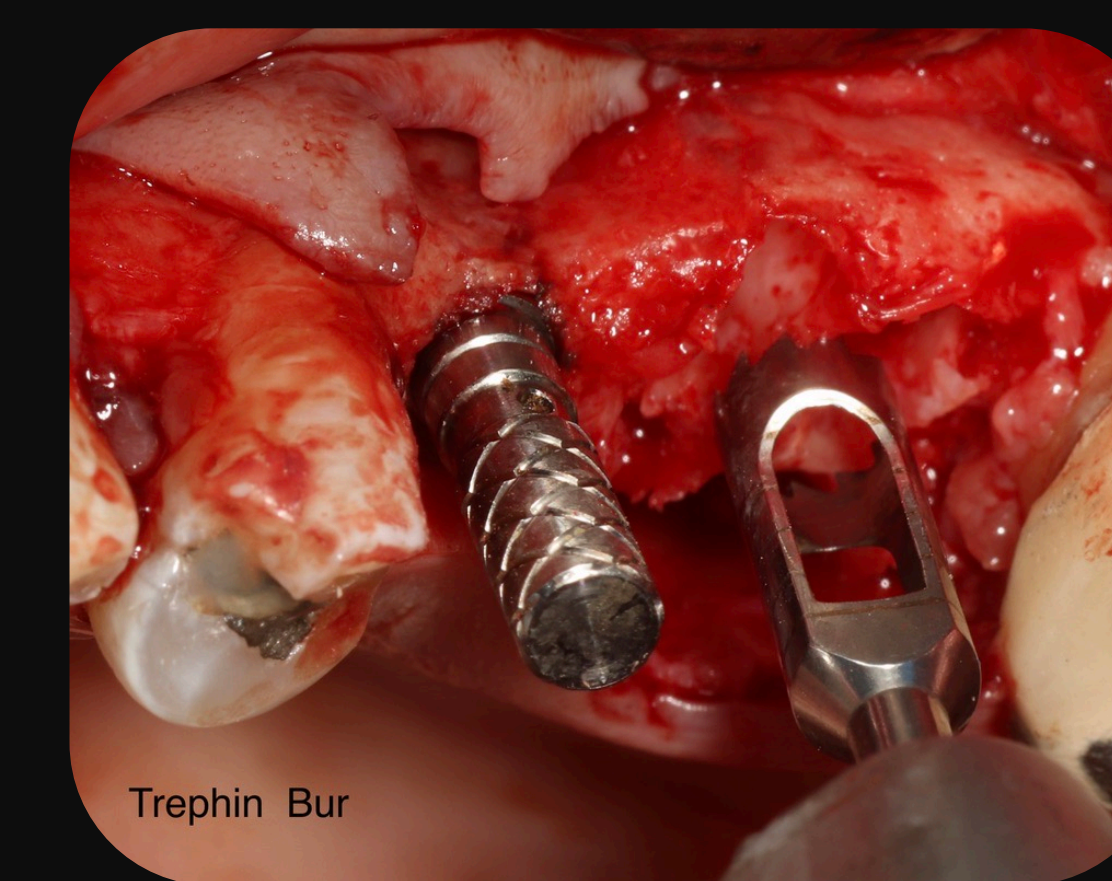
Baseline CBCT



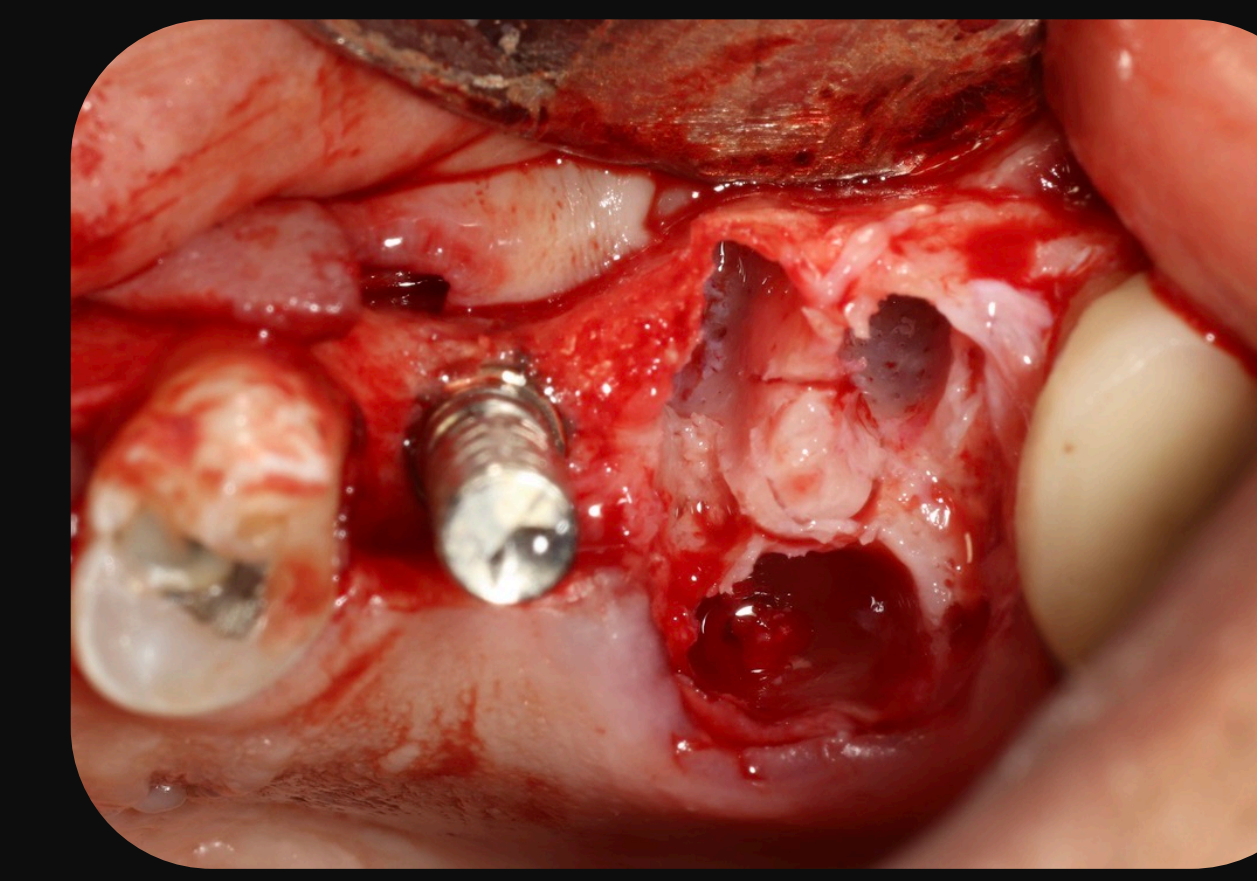
Baseline CBCT



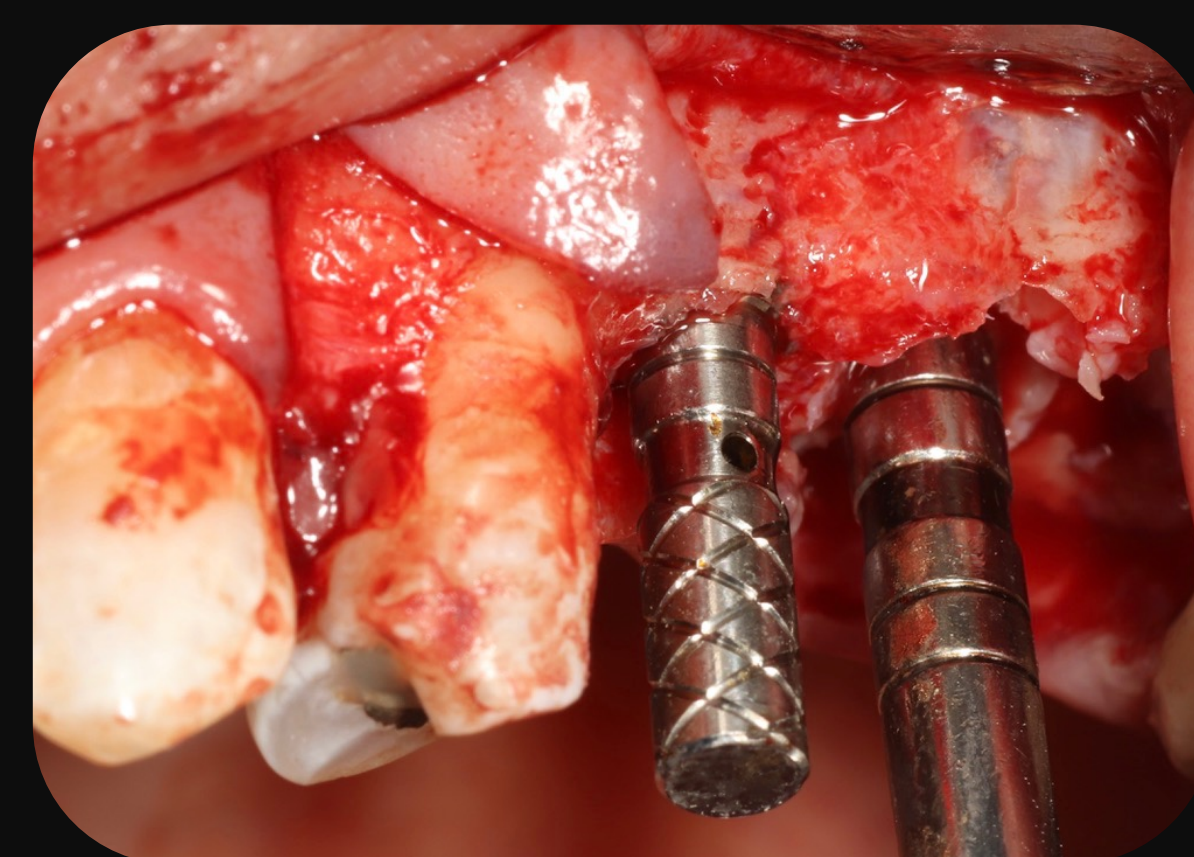
Teeth extracted



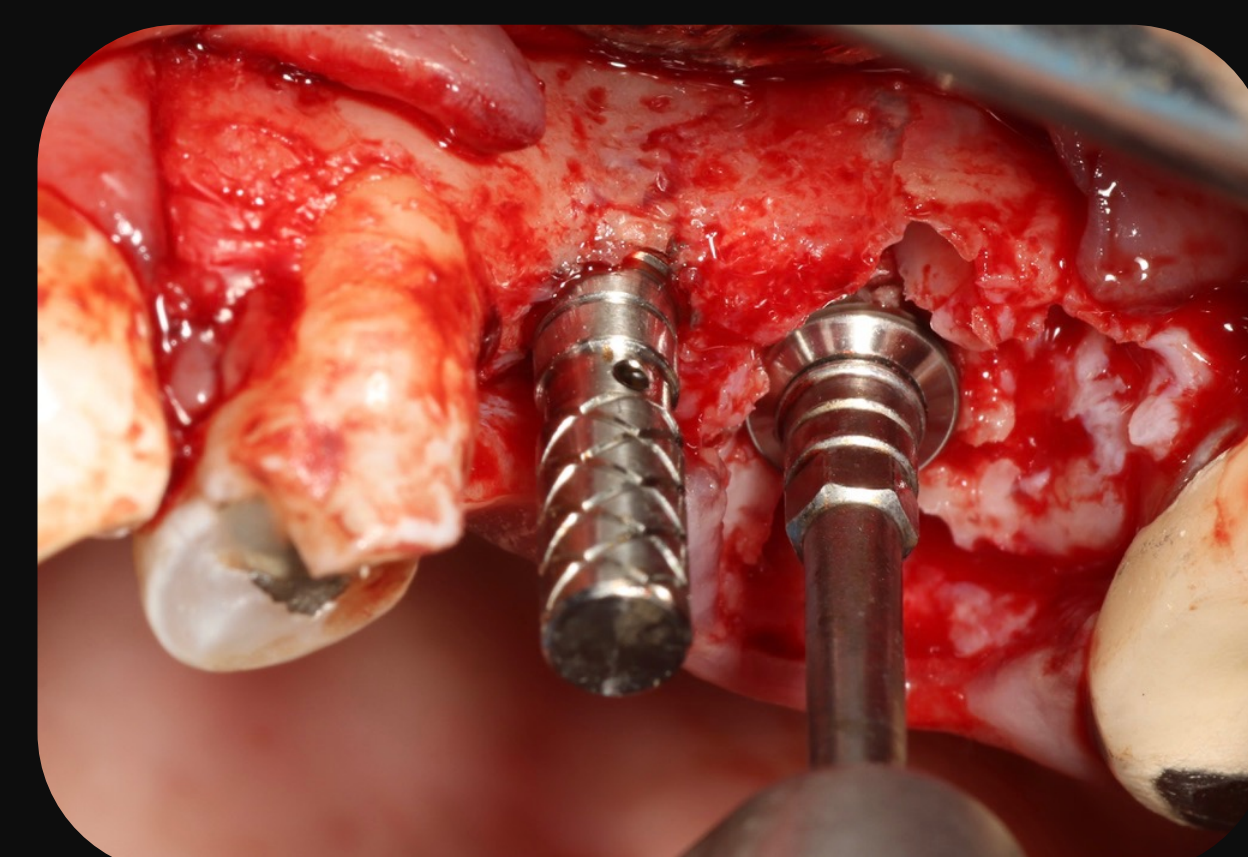
Using a trephine instead of drilling



Final osteotomy hole



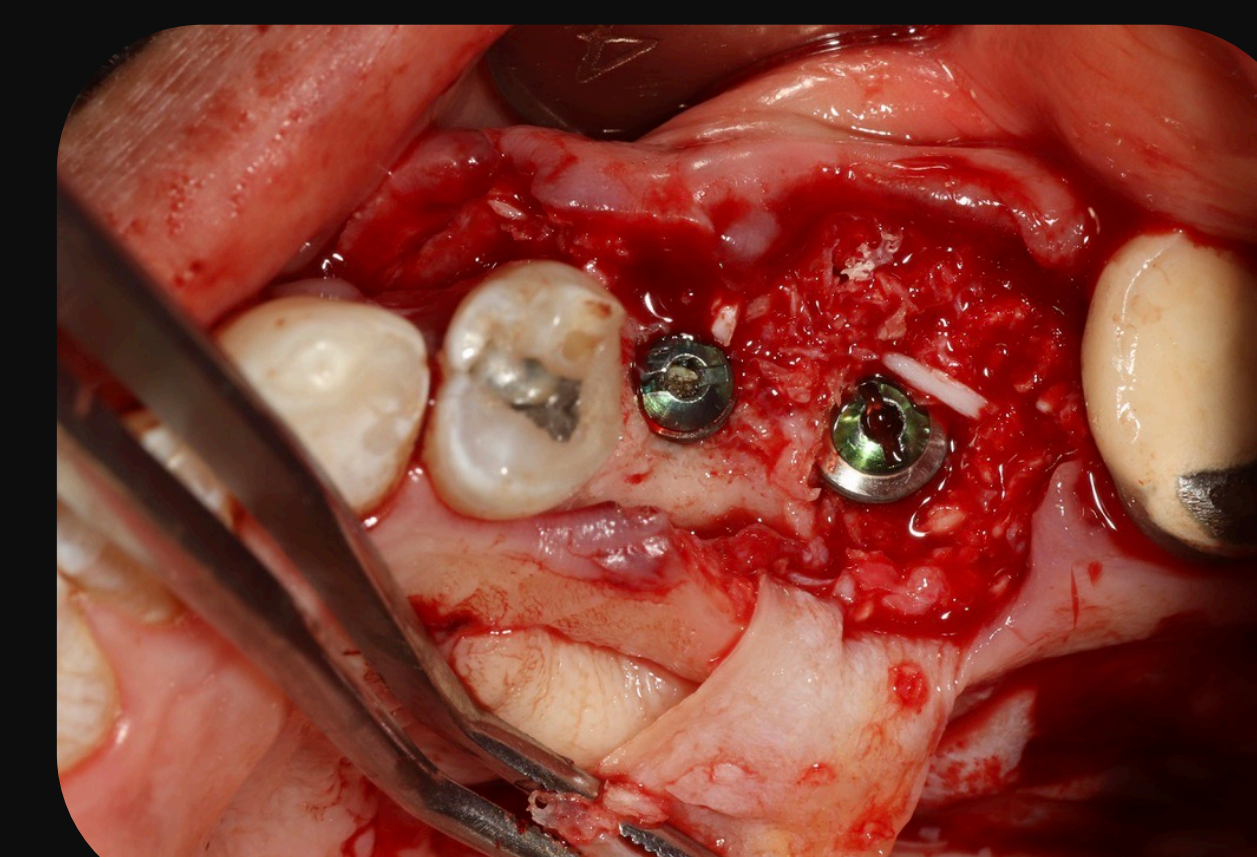
pushing the bony blade into the sinus with an osteotome



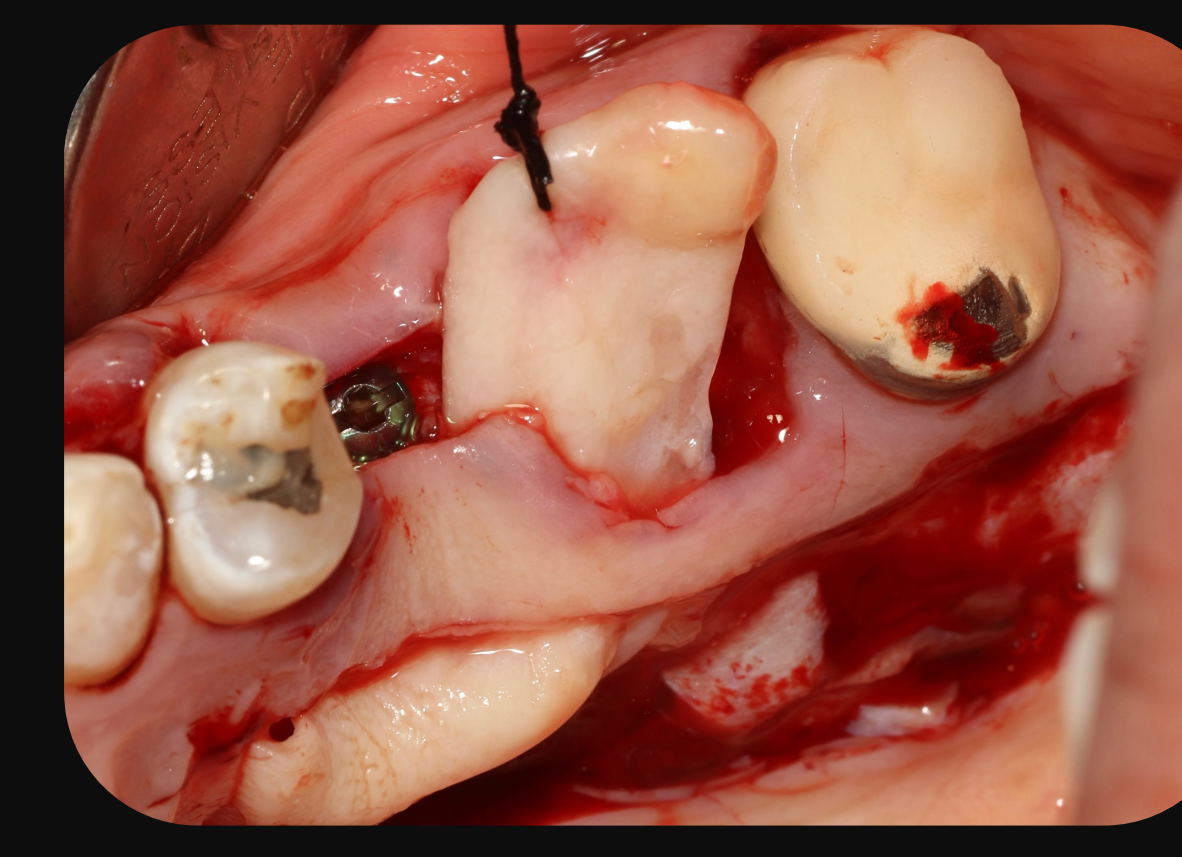
Implant inserted



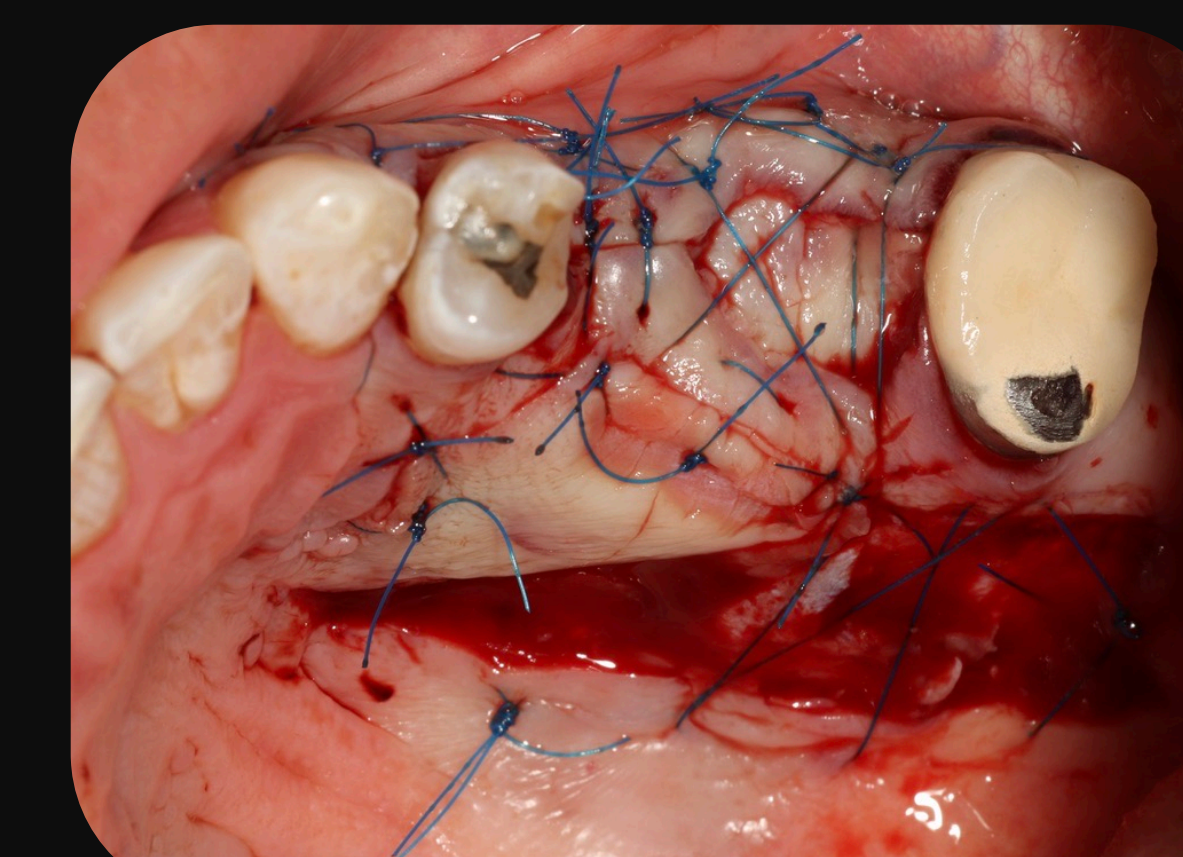
palatal pedicle gingival graft



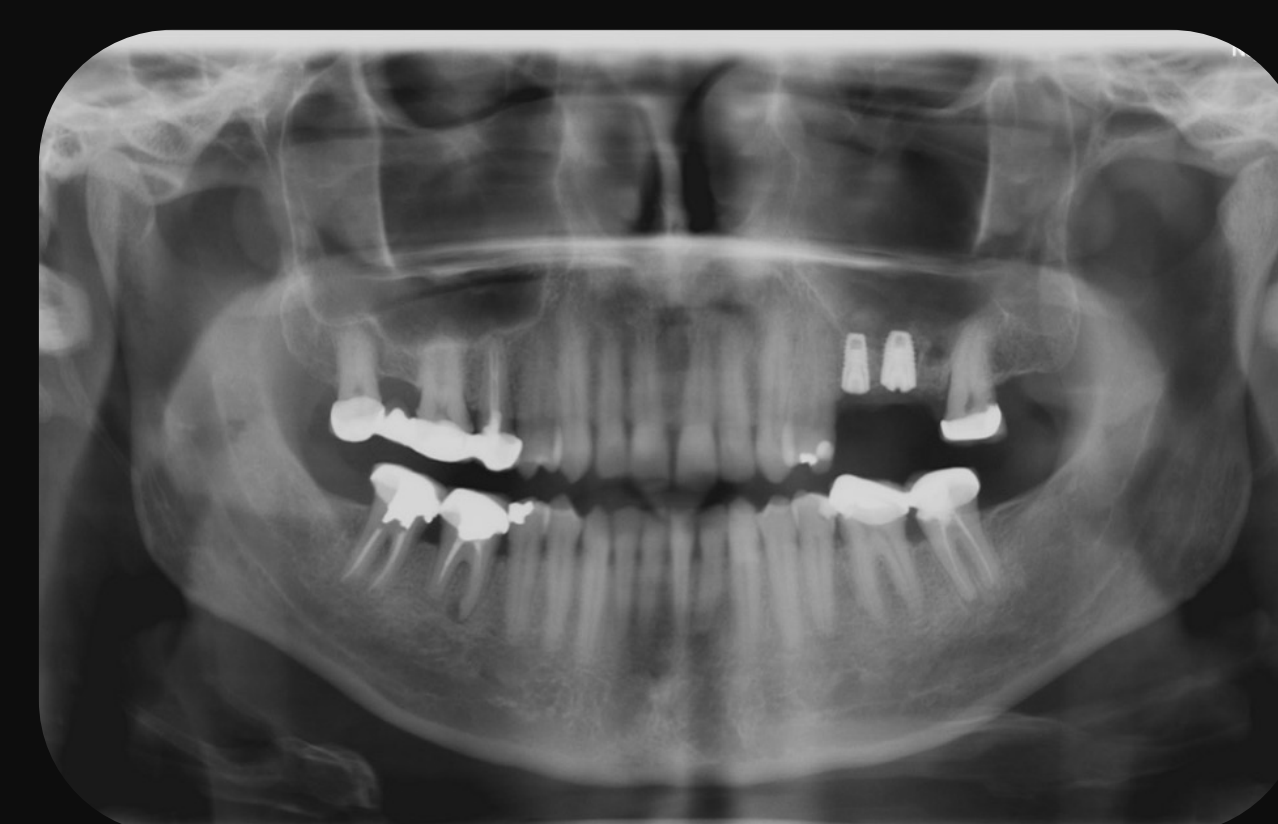
Rotated palatal pedicle gingival graft



Rolling the palatal gingival graft on the cover screw



Graft fixation



Final radiography



Rolling test after 3 month

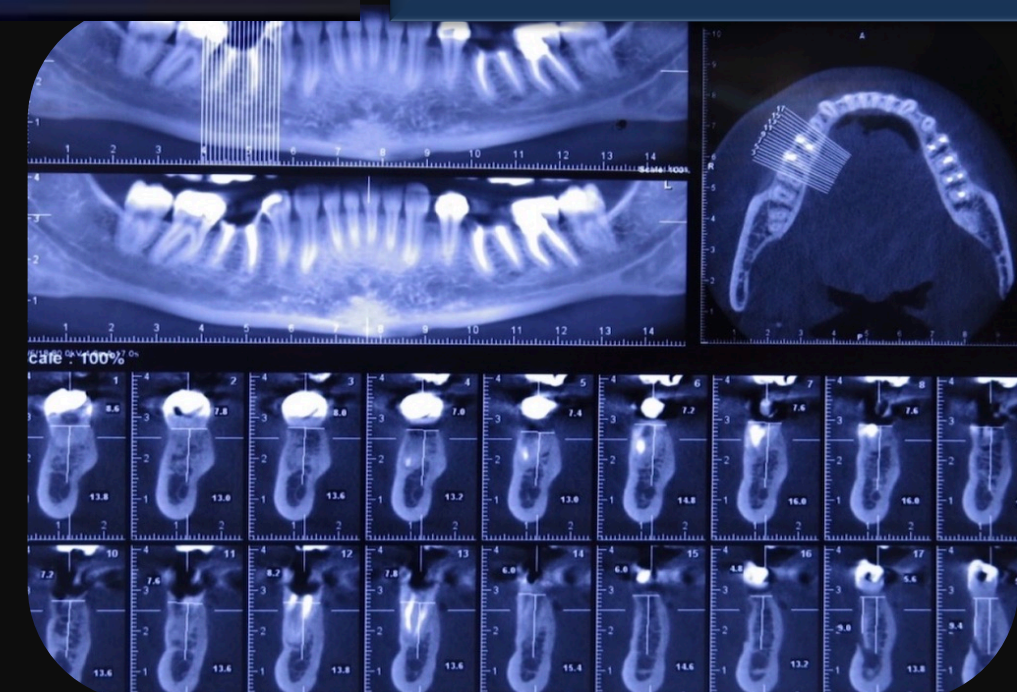


The healing abutment was tightened

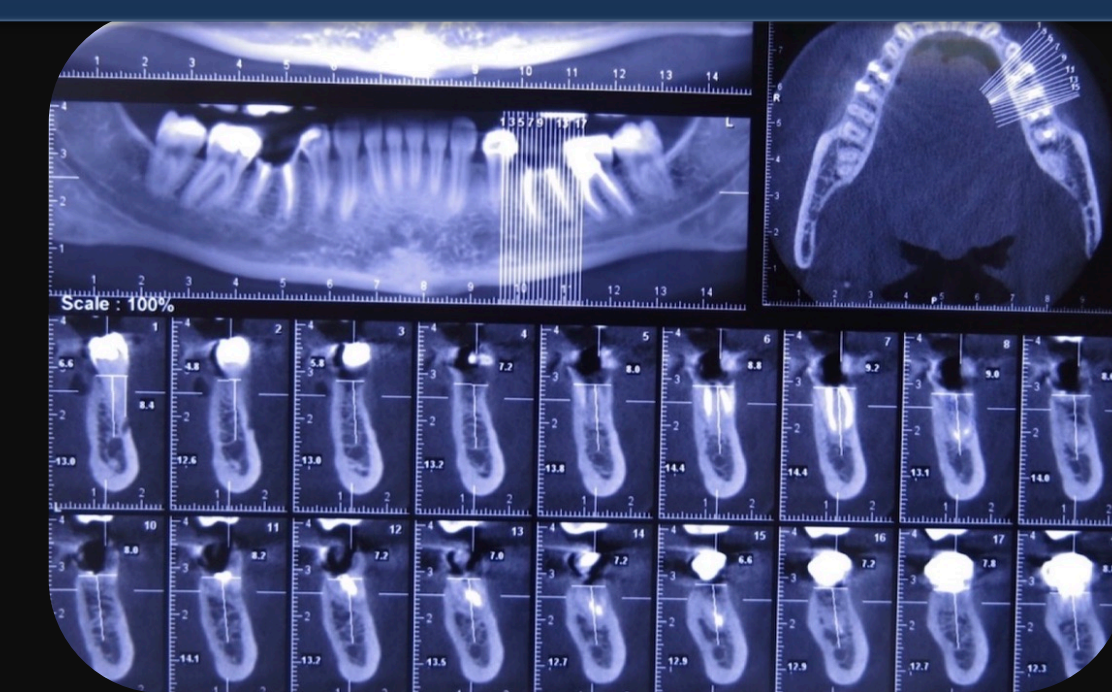


# Time and Tissue Saving with Trephine in Immediate Implant Insertion without Soft Tissue Buccally Flap Advancement

## Case 3



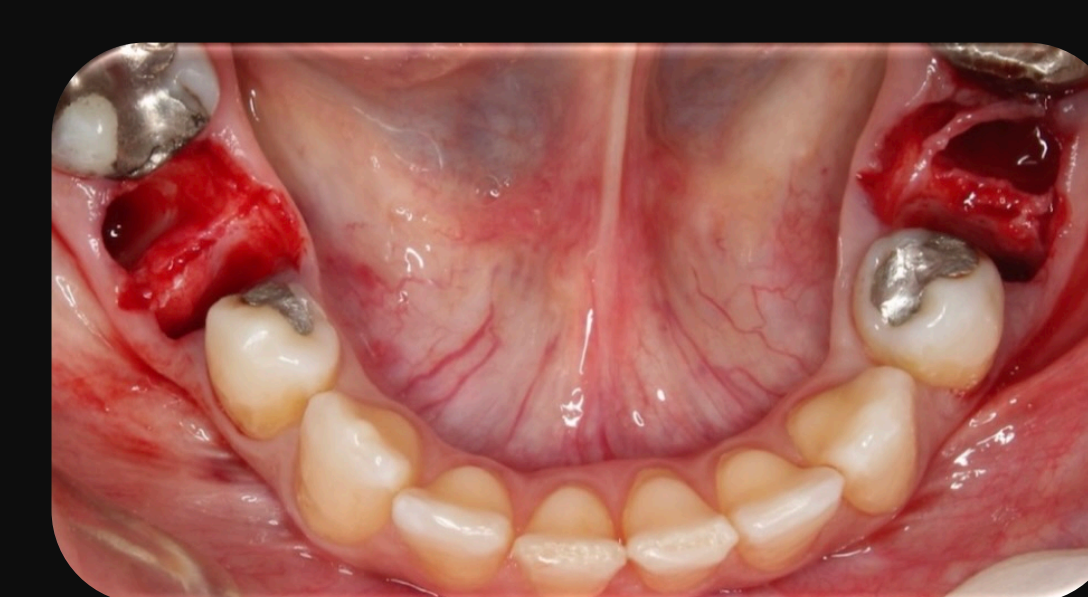
Baseline CBCT



Baseline CBCT



Hopeless Teeth



Teeth extracted



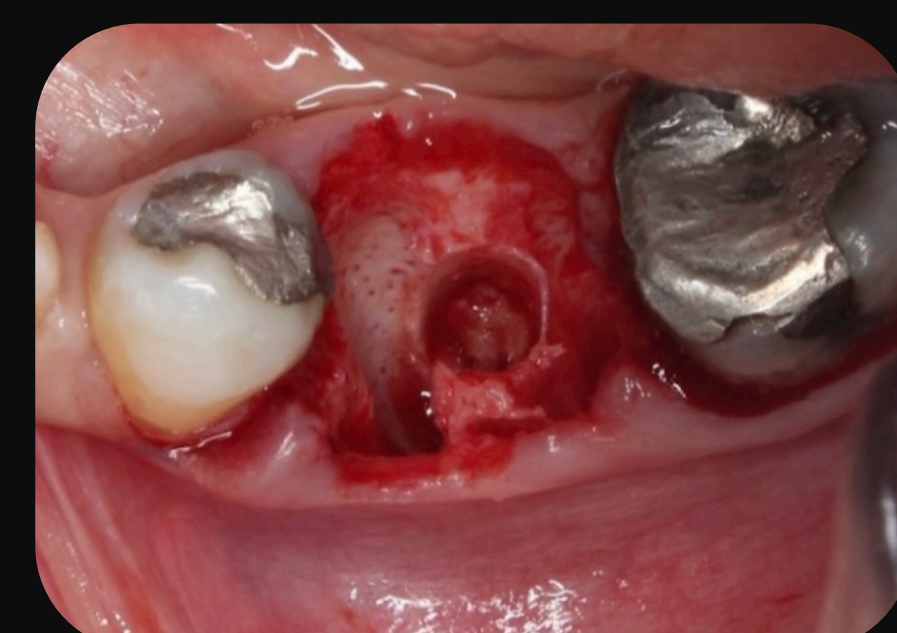
Extracted teeth



Using a trephine instead  
of drilling



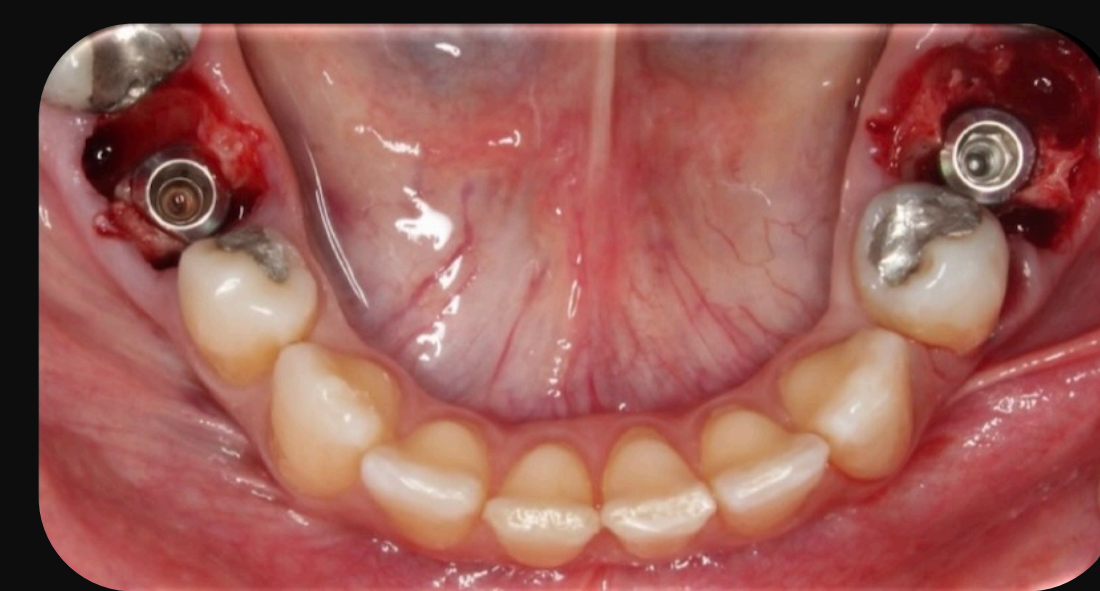
Cut bone removed by  
trephine bur



Final osteotomy hole



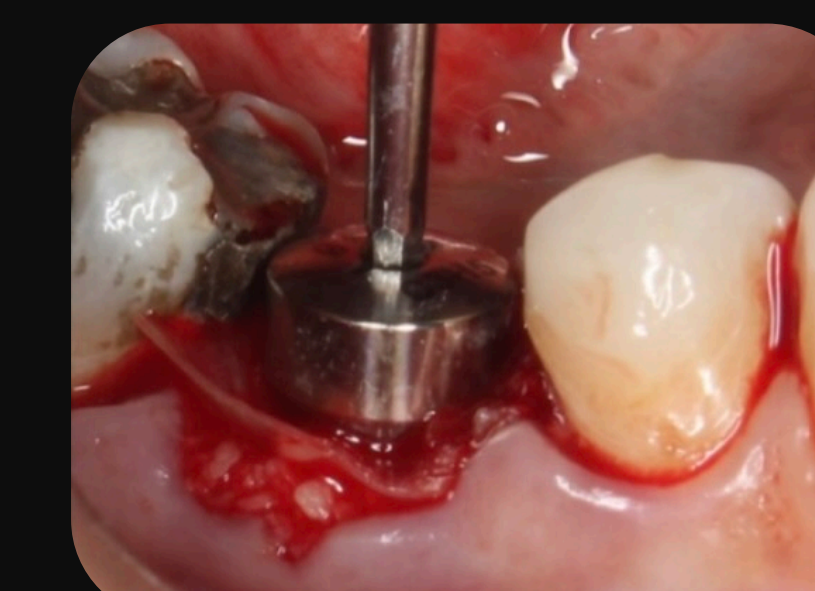
Implant inserted



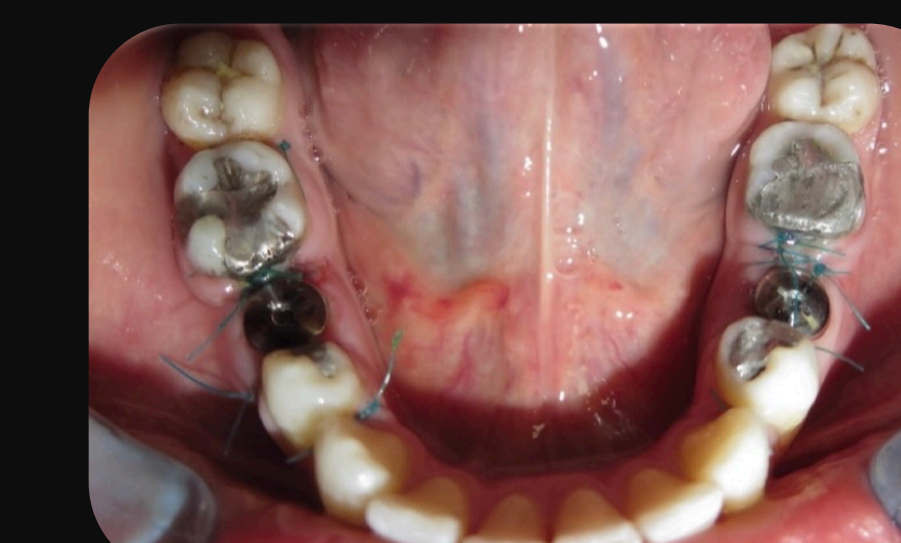
Implant inserted



Milled autogenous bone  
Allograft & Autograft mixed for GBR and



Healing abutment was  
tightened/GBR for hard  
tissue saving/ membrane  
fixed under the buccal flap



Flap closure after  
jumping gap filling and  
GBR

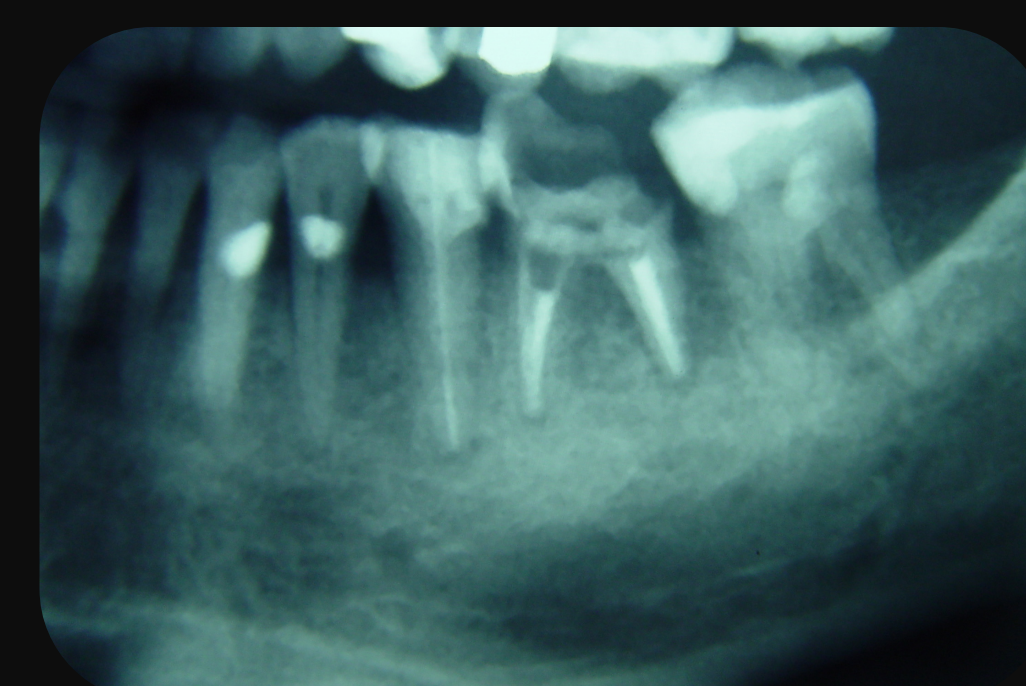


Final radiography

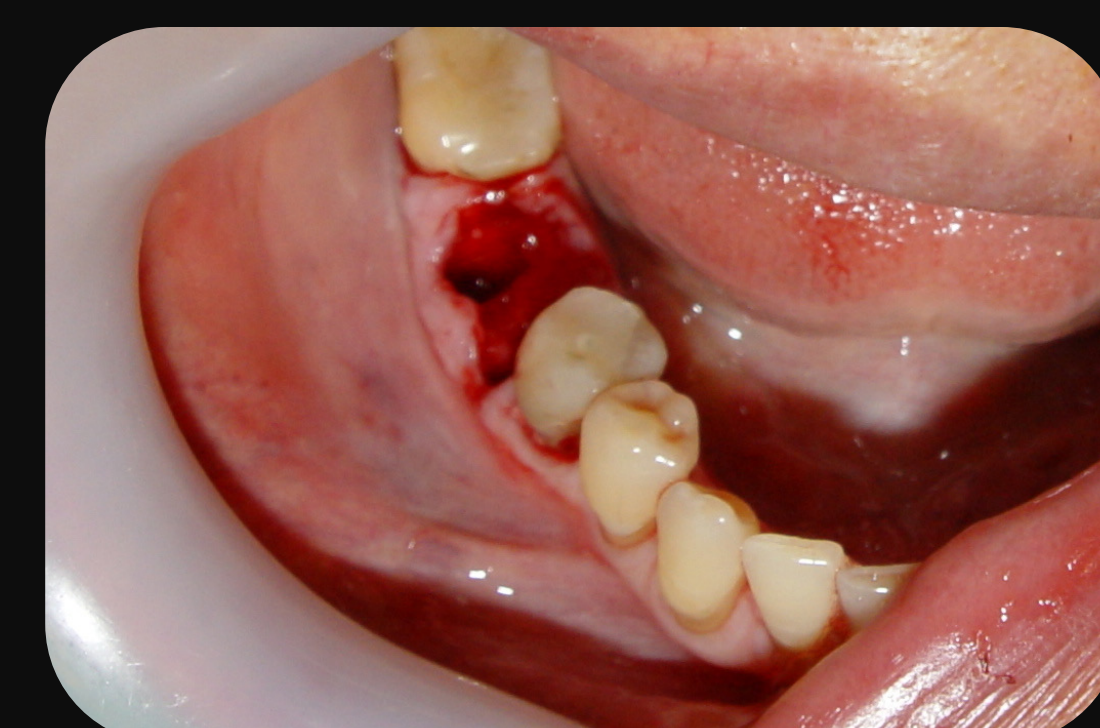
## Case 4



Hopeless Tooth



Baseline PA



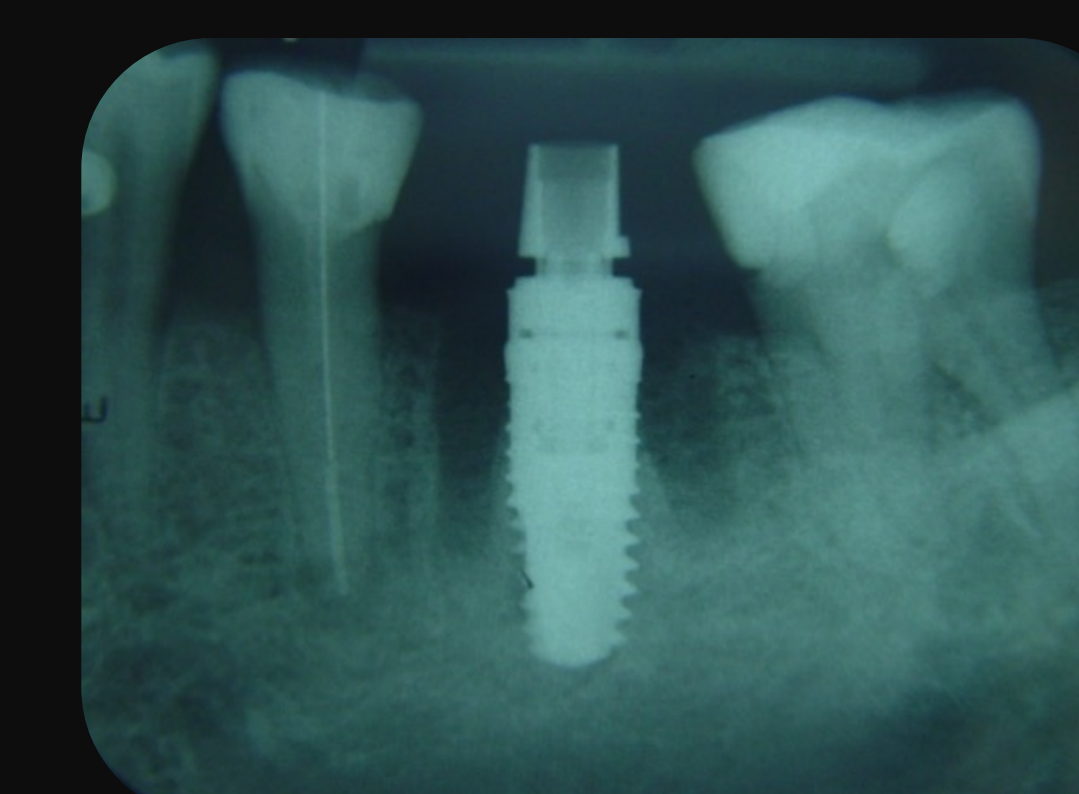
Tooth extracted



Trephine bur



Using a trephine instead of  
drilling



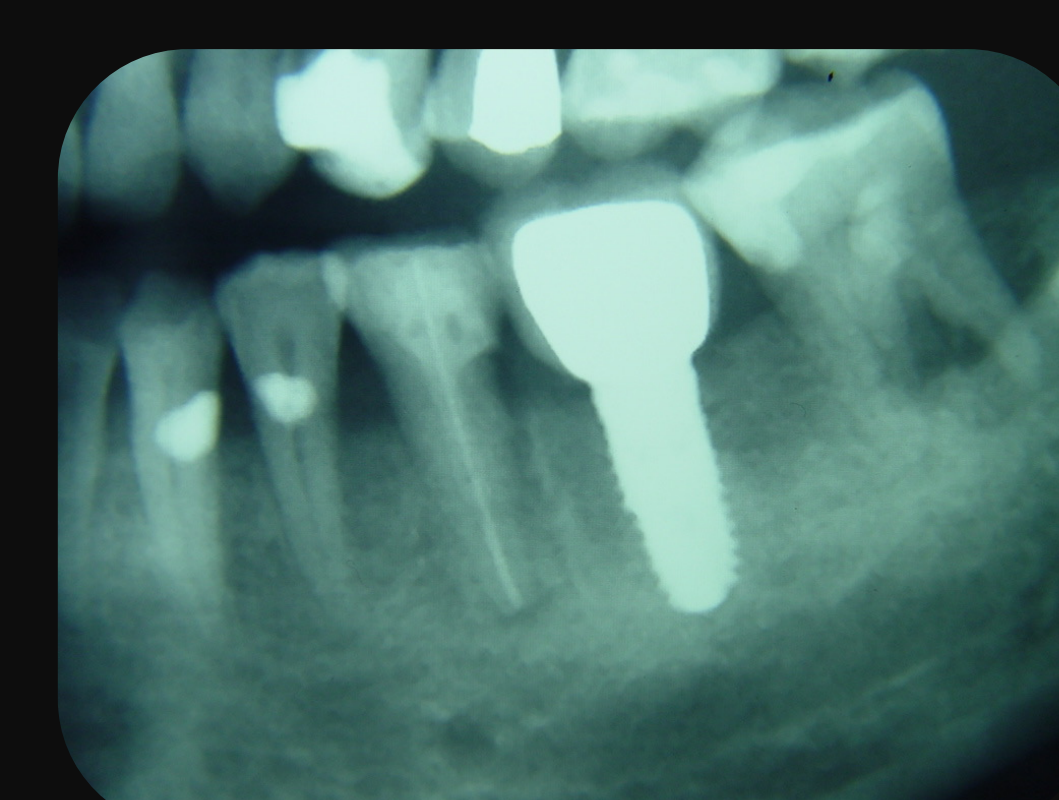
Final radiography



5 years follow up



interdental tooth brush



5 years follow up radiography  
follow-up



## RESULTS

The implant was inserted with excellent primary stability. The healing was uneventful. The radiograph after 4 months, showed new bone formation around the implant into the sinus. There was keratinized attached mucosa with adequate quantity and thickness buccal to the implant.

## CONCLUSION

Application of the novel introduced technique for immediate one-stage implant insertion not only reduces the time, the number of surgeries, and patient's morbidity but also saves more soft tissue. The pedicle soft tissue graft for covering the socket relieved the need for flap advancement; thus, no mucogingival problem nor shallow vestibule was encountered. This method is compatible with various implant systems as there are different diameters of trephine burs. Therefore, this technique promises plain and swift implant surgery in the maxilla and mandible.

## REFERENCES

1. Mahesh L, Kurtzman GM, Shukla S. Trephine core: An alternative sinus lift technique. Journal of Oral Implantology. 2014;40(S1):.6-391
2. hargava D, Thomas S, Pandey A, Deshpande A, Mishra SK. Comparative study to evaluate bone loss during osteotomy using standard drill, bone trephine, and alveolar expanders for implant placement. The Journal of the Indian Prosthodontic Society. 2018;18(3):.226
3. Hayacibara RM, Gonçalves CS, Garcez-Filho J, Magro-Filho O, Esper H, Hayacibara MF. The success rate of immediate implant placement of mandibular molars: a clinical and radiographic retrospective evaluation between 2 and 8 years. Clinical oral implants research. 2013