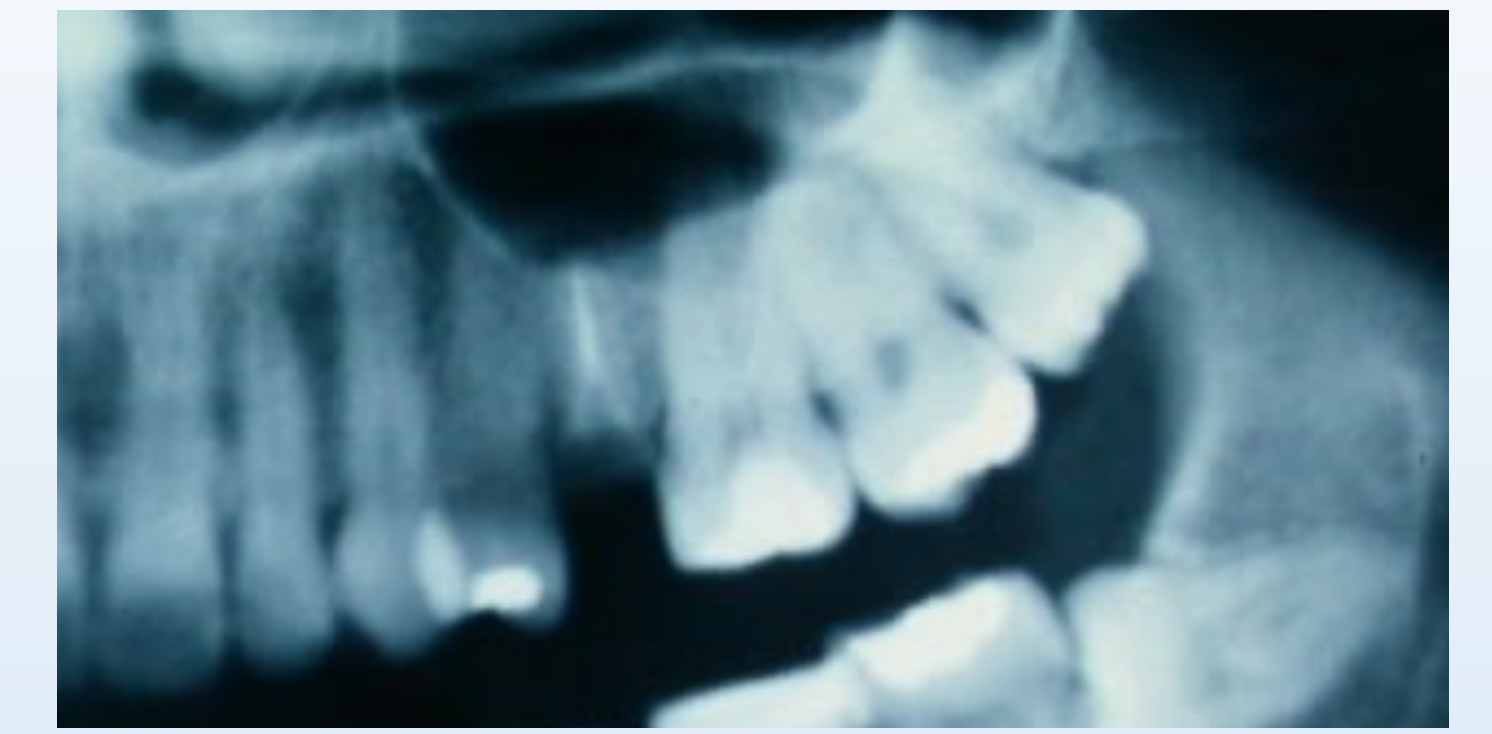


Forced Eruption (Orthodontic Extrusion) for Soft and Hard Tissue Formation Before Immediate Implant: A Case Report

Limberte, Renato¹; Maia, Marcelo do L. P.

¹ ASPID Student at Herman Ostrow Dental School in USC, Los Angeles California



ABSTRACT

Forced eruption or orthodontic extrusion is a safe and predictable procedure that can promote considerable changes both in hard and soft tissue at the tooth site where the immediate dental implant will be installed. The principles of orthodontics are based on slow torque movements that create areas of compression and traction forces on the periodontal ligament. Those forces contribute for bone resorption and bone deposit and consequently can change the anatomy and configuration of the alveolar socket. A new three-dimensional bone topography is created and, as a result, can contribute for the primary stability of the implant during its installation. In addition, forced eruption can improve the free and attached gingiva contour enhancing the final prosthetic result. The main benefits with the use of tooth extrusion during orthodontic treatment were apical bone formation, inflammation reduction, alveolar socket preservation and optimization of conditions for immediate implant installation.

MATERIALS AND METHODS

In this case report, a post with active retention threads (Flexi-post-EDS) was screwed and cemented in a compromised submerged root in a 26-year-old female patient. Activations of 1mm were applied with a period of 30 days wait between the appointments. After the formation of 3mm of apical bone, no forces were applied, and a 30 days wait was indicated for bone maturation. A 13 x 3.75mm external hex Titamax Porous (Neodent/Straumann) implant was immediately placed after the extraction combined with atraumatic maxillary sinus elevation using Summers osteotomes. Lateral bone densification and alveolar height augmentation were obtained, and the implant was placed in an ideal position with torque of 32N. After 6 months, the steps of second stage surgery, impression and provisional with soft tissue conditioning were performed. The final metal-free crown was cemented on a zirconia abutment.



Fig 1- Initial picture



Fig 2- Gingivectomy



Fig 3- Intraradicular prep drying

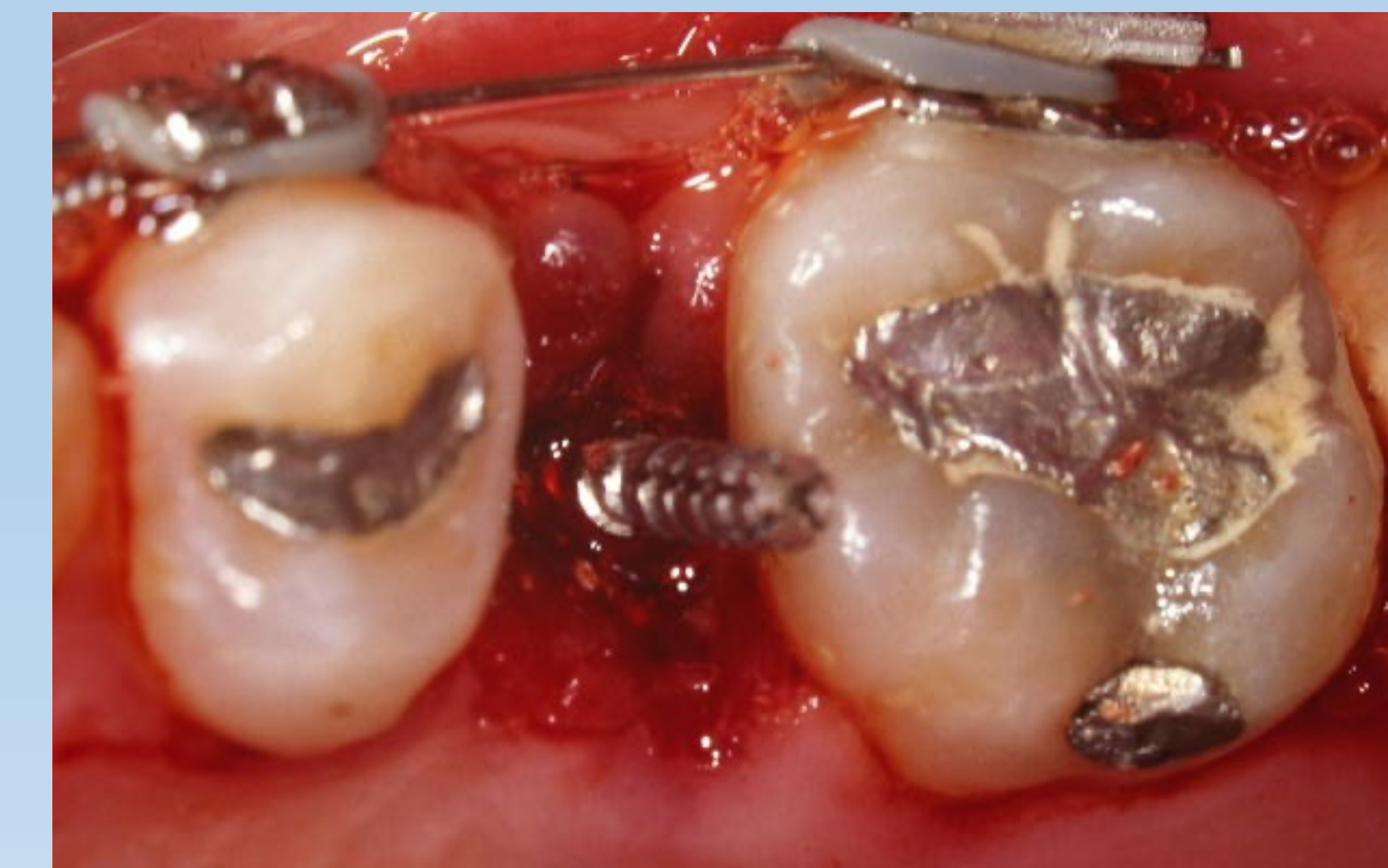


Fig 4- Screwed post



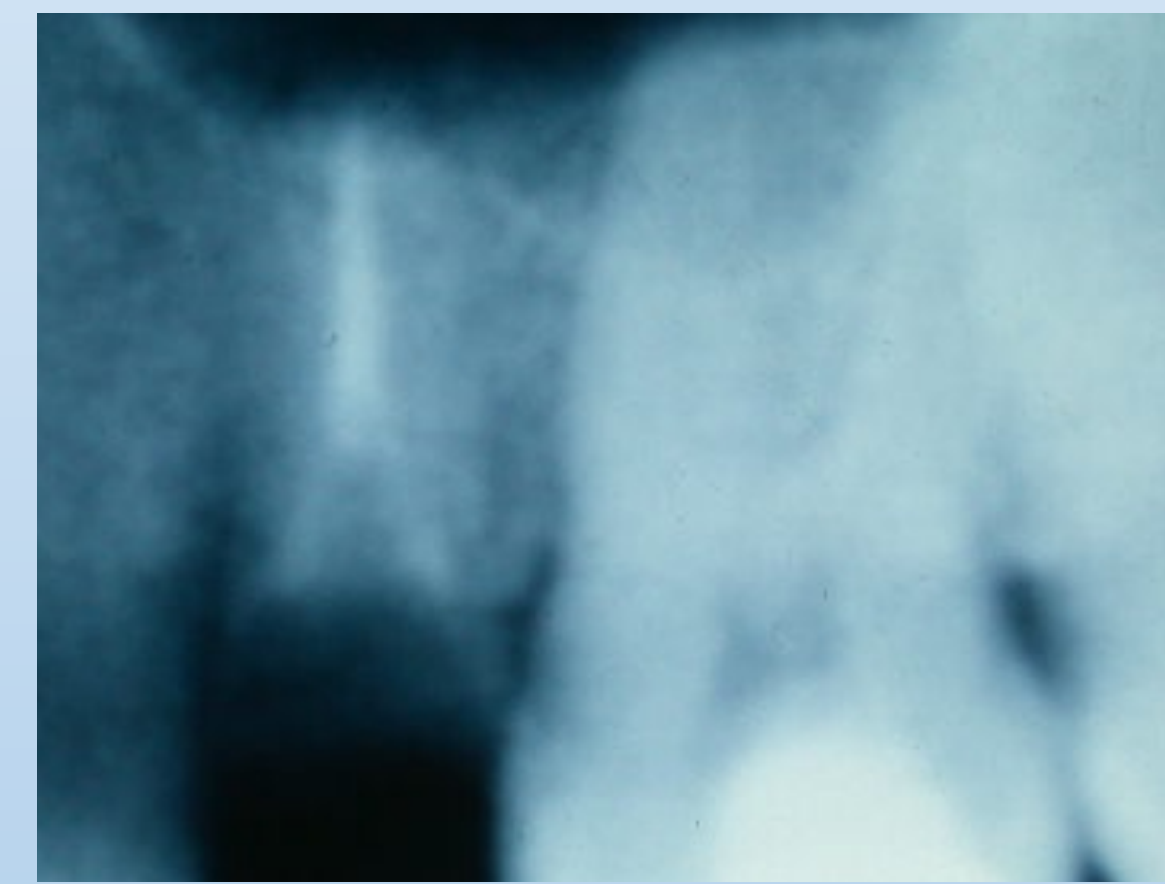
Fig 5- Core for the ortho appliance

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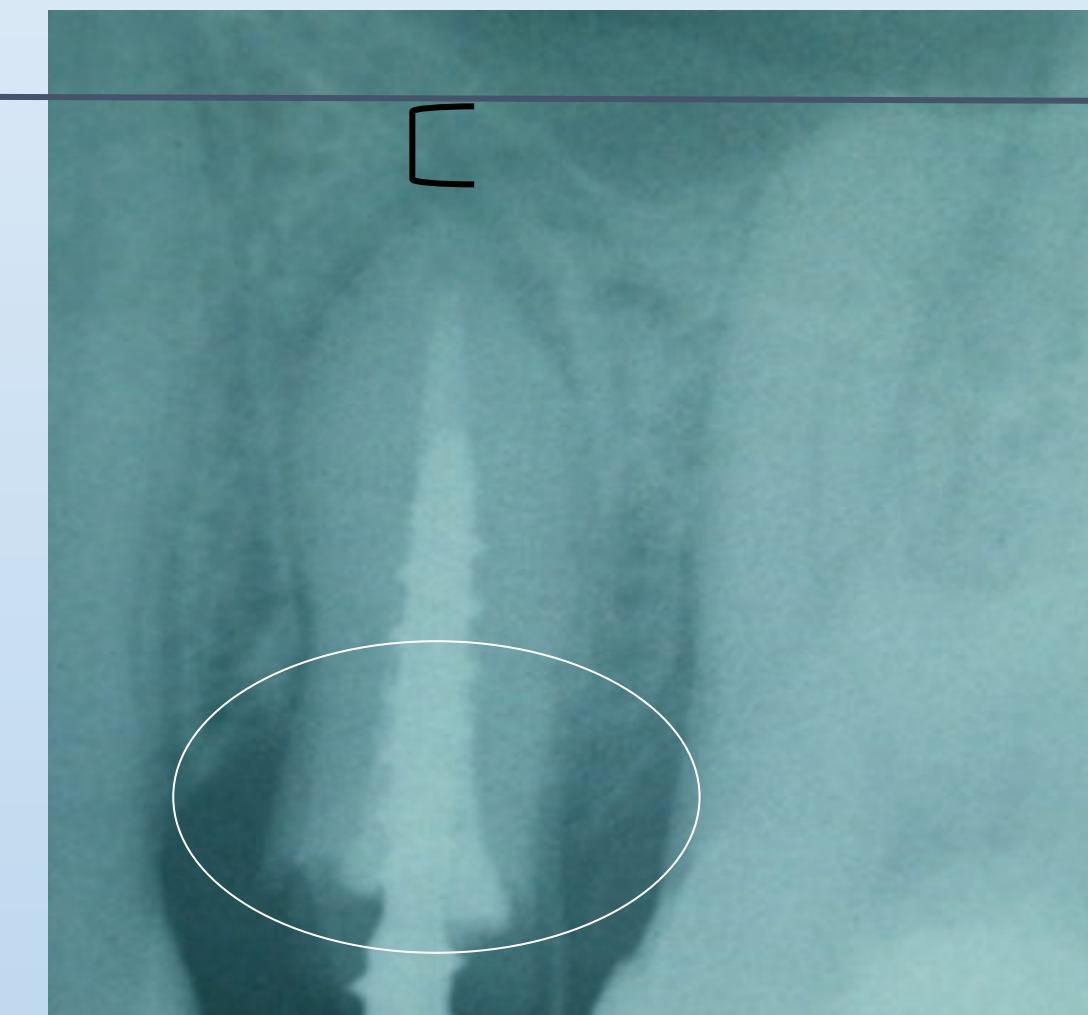
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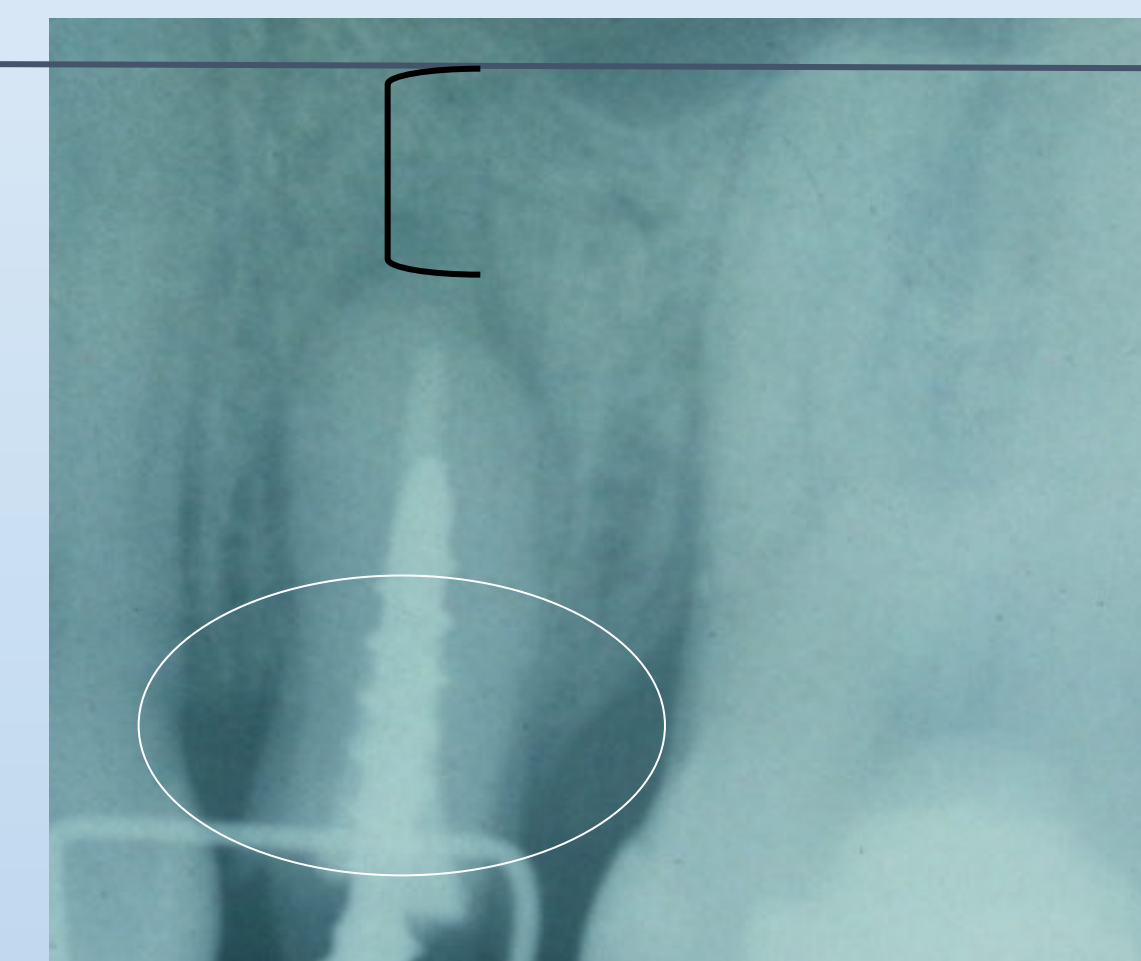
Inicial



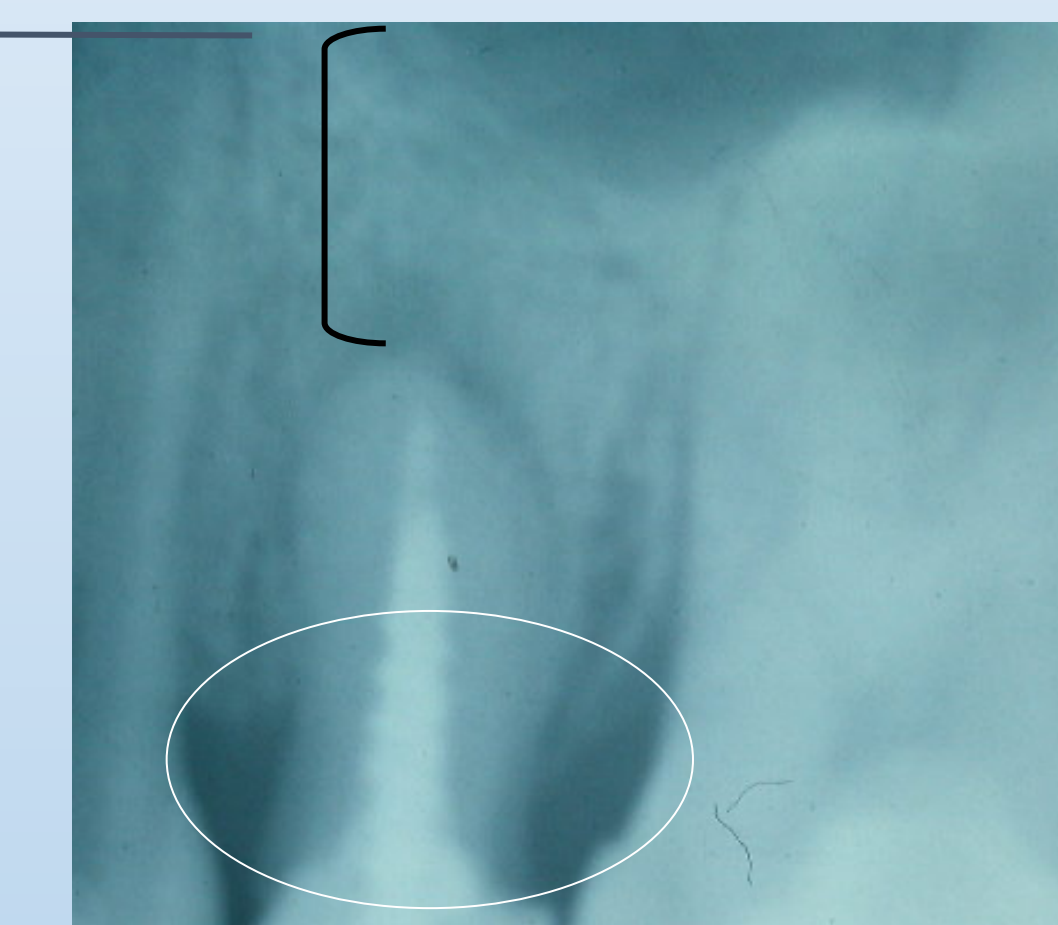
1 month



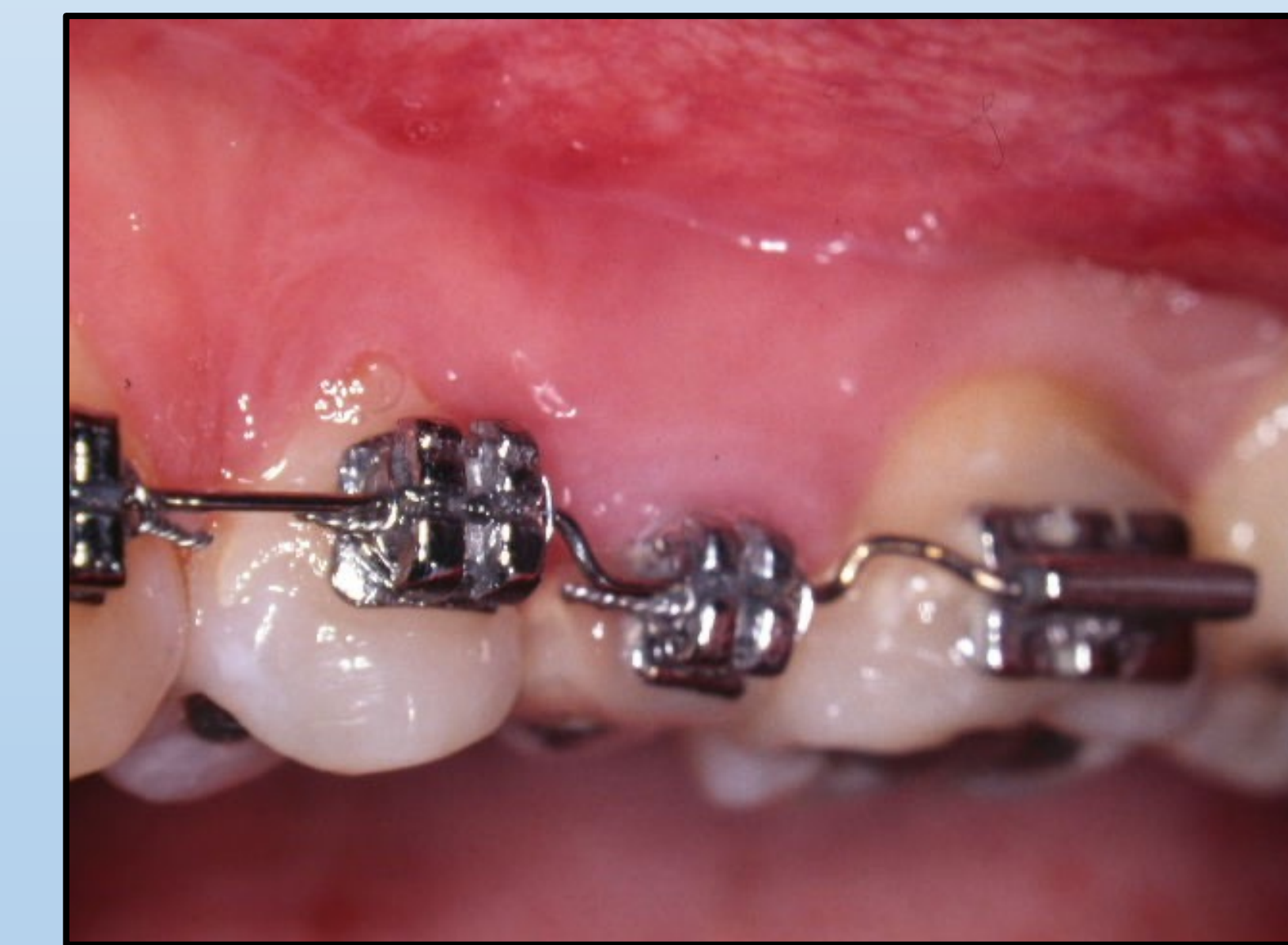
2 month



3 month



Prior to surgery



Surgery

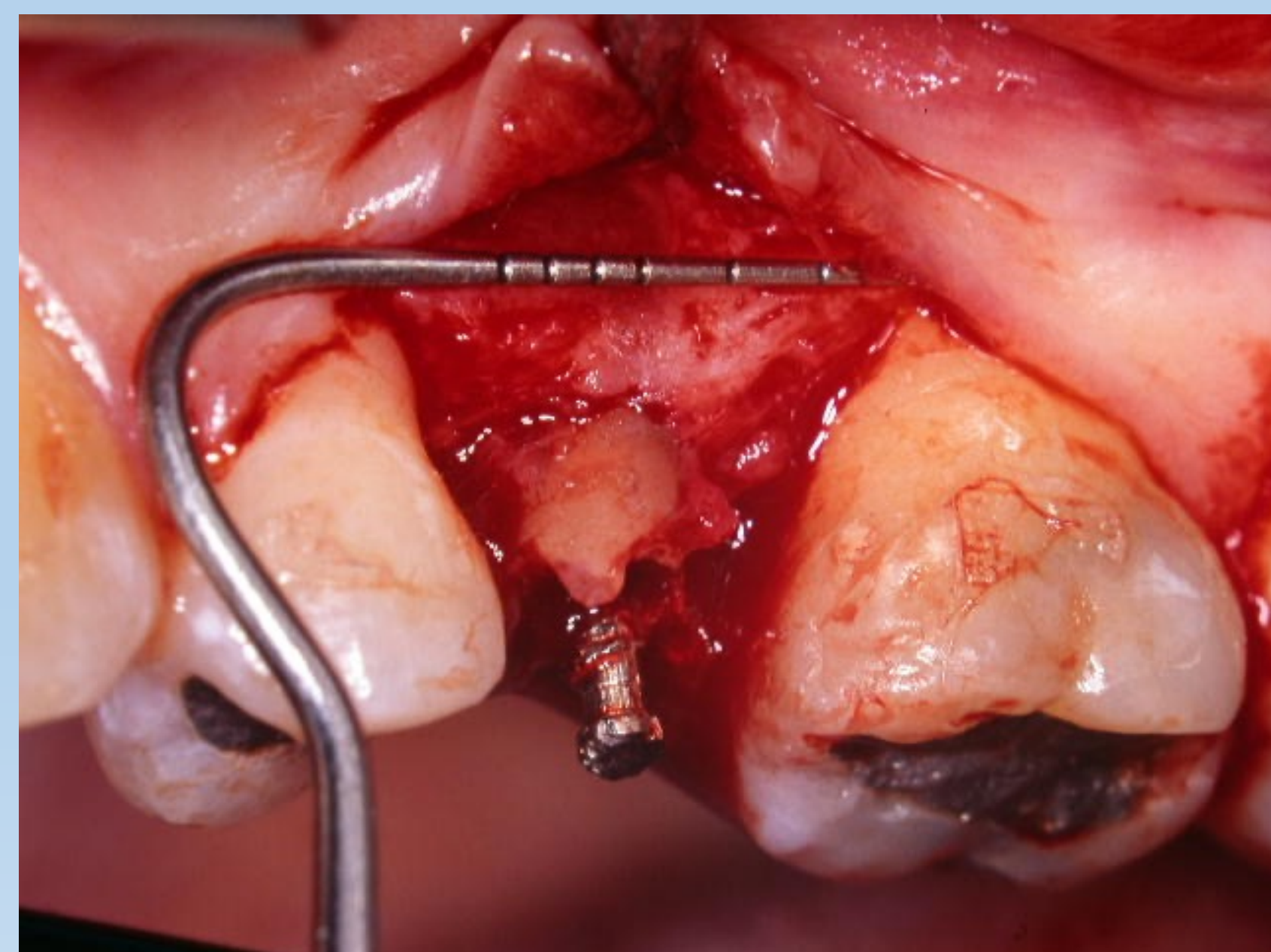


Fig 6- Bone formation

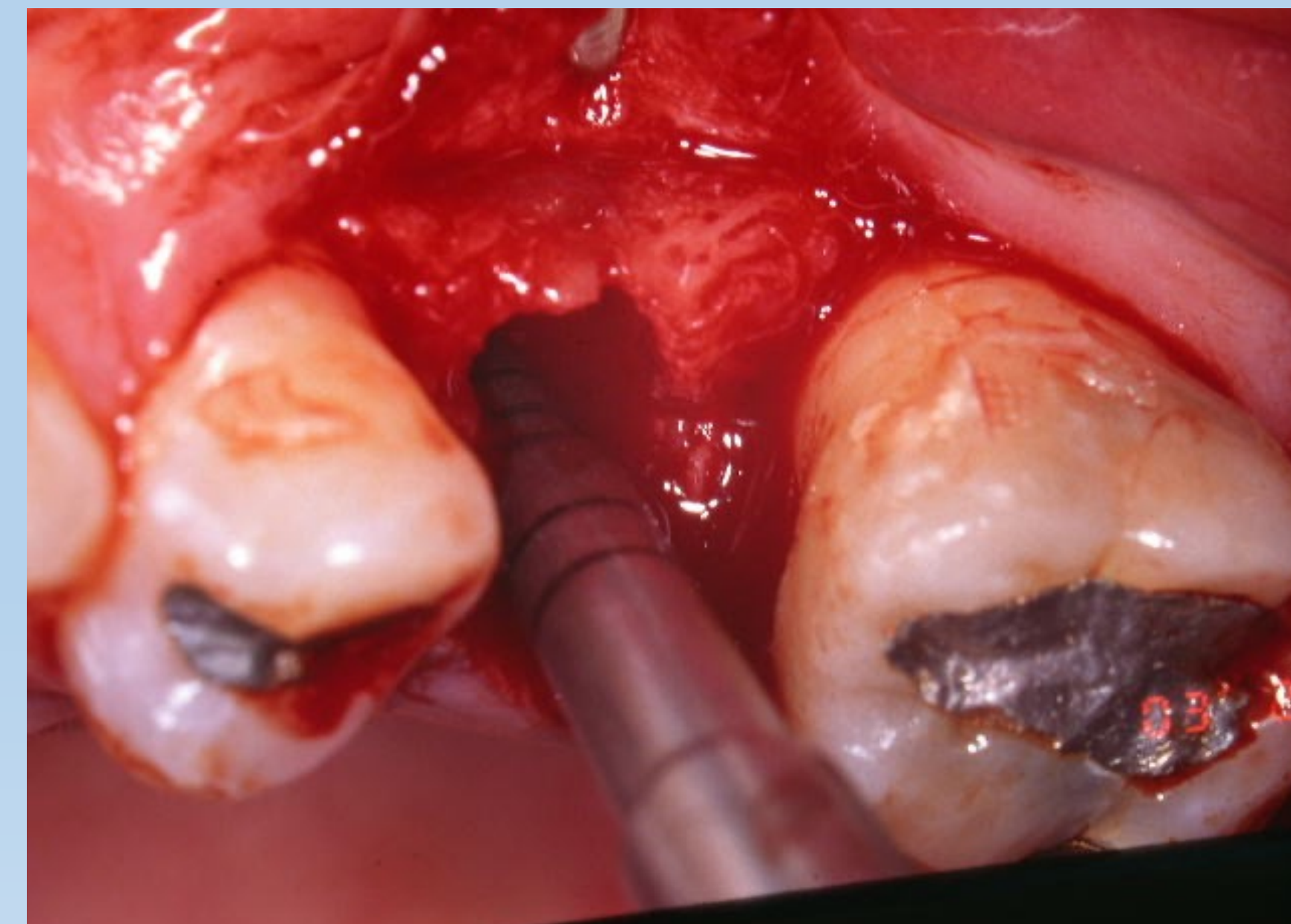


Fig 7- Use of Summers osteotome

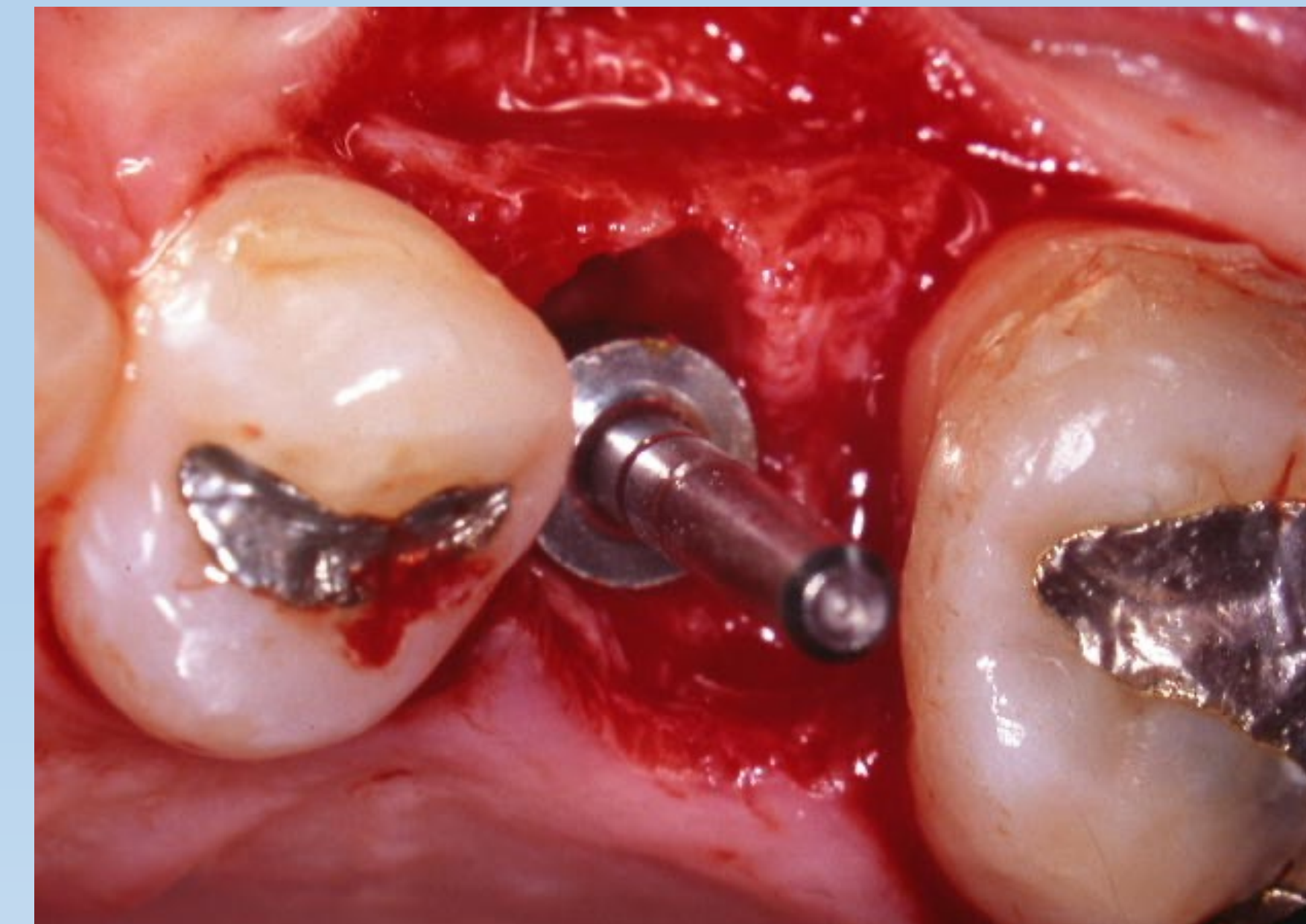


Fig 8- Parallelism indication

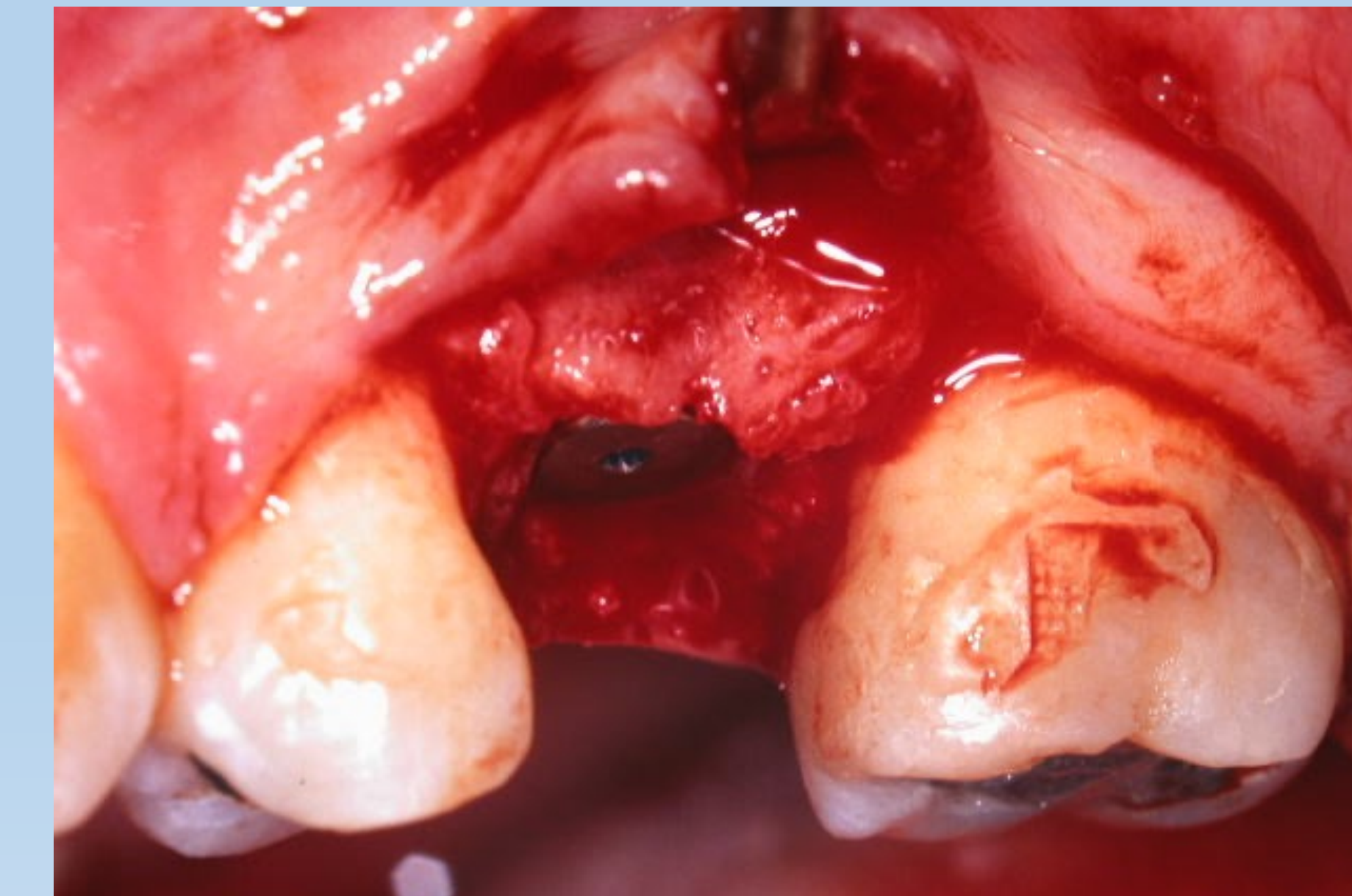


Fig 9- Implant with cover screw



Fig 10- Bone bormation

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Restorative procedures

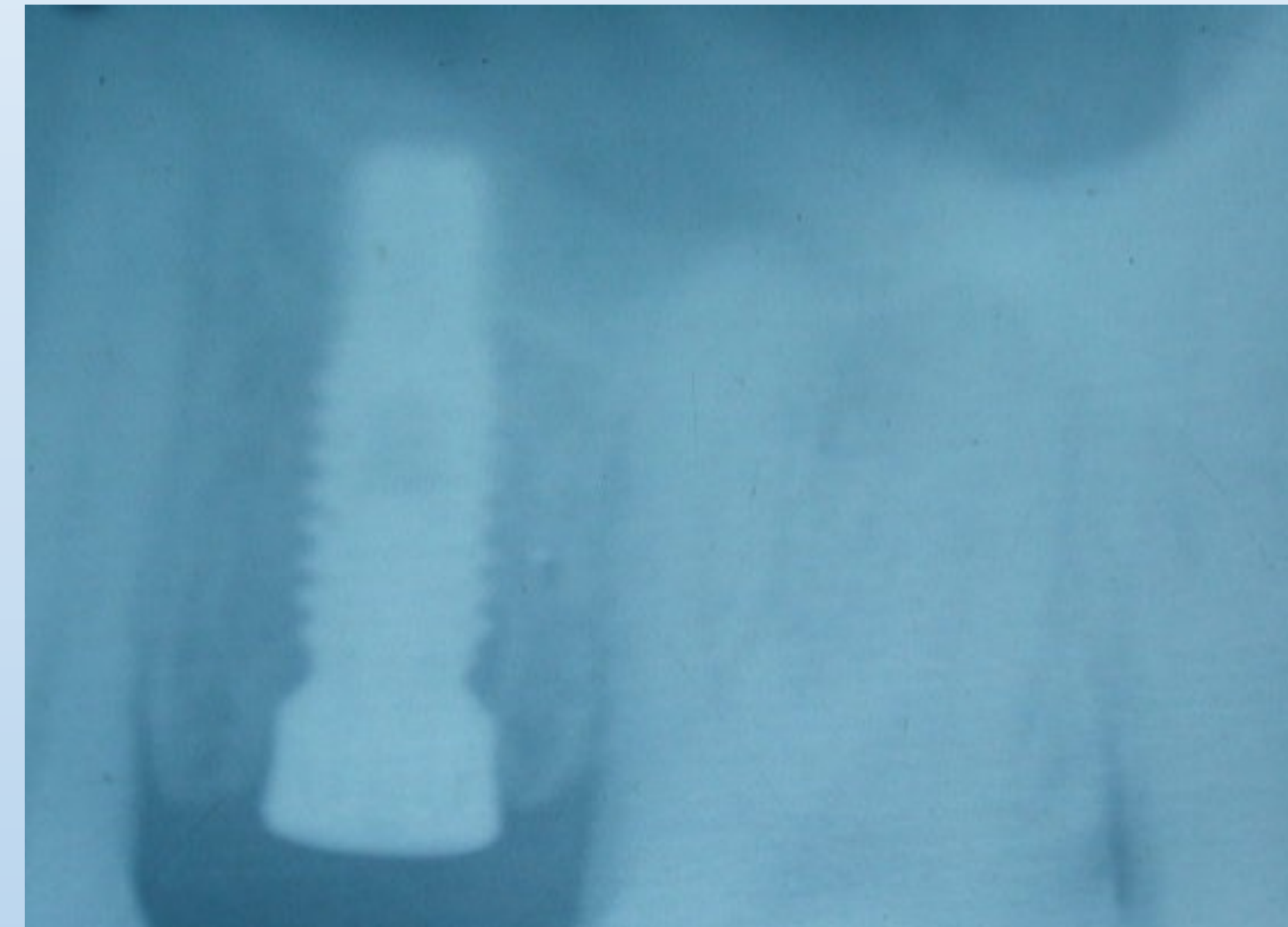


Fig 11- Implant radiograph



Fig 12- Healing abutment



Fig 13 Osseointegrated
Titamax (Neodent/Straumann)



Fig 14- Zirconia abutment



Fig 15- Cemented metal-free crown

ADVANTAGES OF FORCED ERUPTION PREVIOUS TO IMPLANT PLACEMENT

- *Formation of apical bone*
- *Interproximal bone crest height gain*
- *Elimination of periodontal pocket*
- *New gingiva contour*
- *Creation of soft tissue for no-tension suture*

CONCLUSION

The purpose of this poster is to illustrate that the forced eruption /orthodontic extrusion is an alternative technique for alveolar bone formation and gingival growth. It creates better condition for future implant placement.

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