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Custom Alveolar Ridge Splitting (CARS) Technique as a Predictable Horizontal Ridge Augmentation Procedure for Atrophic Ridges - Concept and Technique

Natacha Reis, Ludovic De Carle, Maryse Manasse, Stuart J Froum, Sang-Choon Cho
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INTRODUCTION

For a long-term survival and success rates of implant supported restorations, implants should be placed with at least 2 mm of surrounding bone in a three-dimension. According to the literature, there are several techniques to perform bone augmentation prior or simultaneous with implant placement, however, all of them has their own complications and limitations. Moreover, bone regeneration was shown to be more predictable and successful in intra-osseous defects than extra-osseous defects because it is a well contained defect with good blood and osteoblast supply. The CARS technique was developed based on the conventional alveolar ridge splitting technique, however trephine burs are being used in an implant site specific instead of the piezo machine in the entire quadrant.

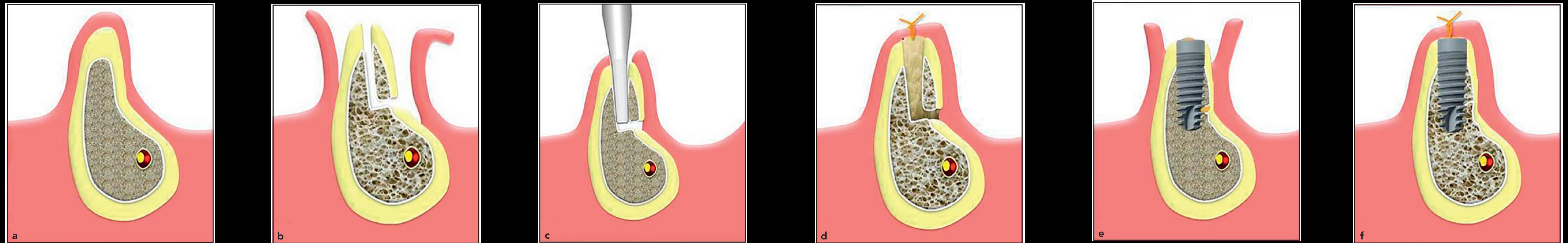
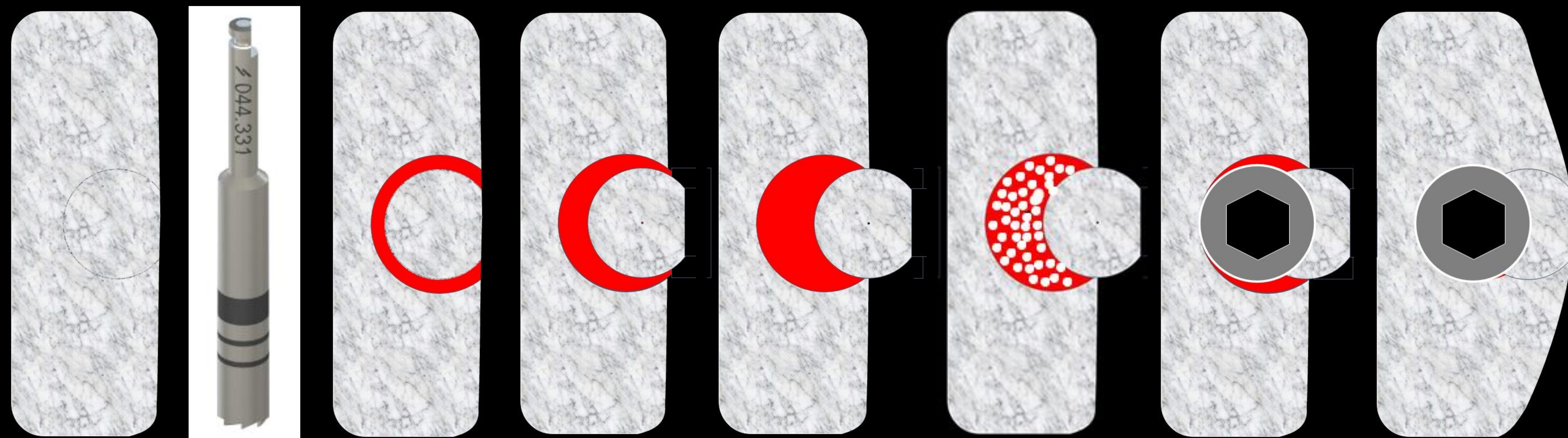
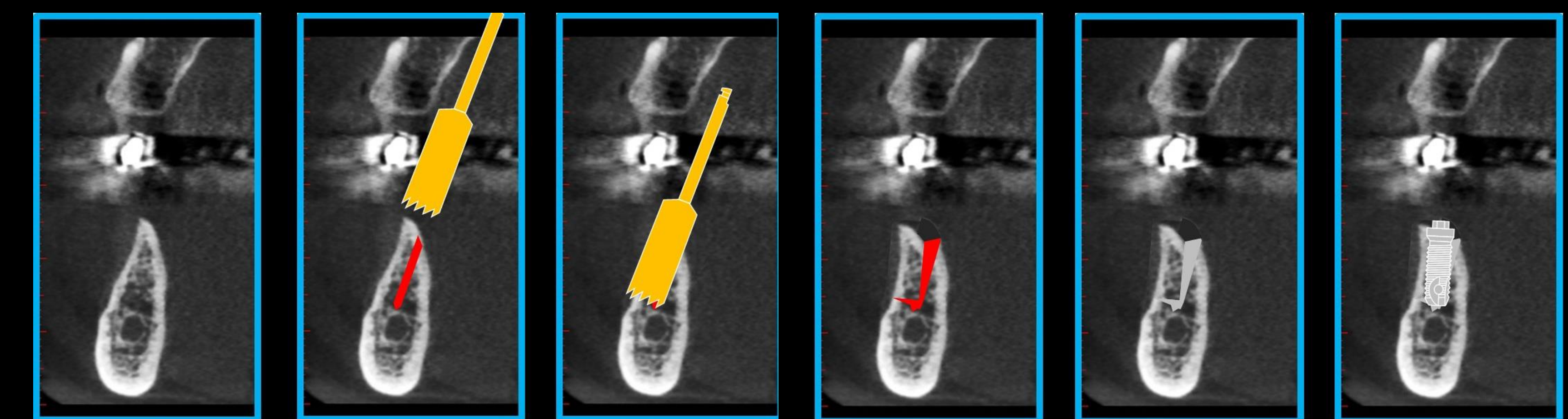
PURPOSE

The purpose of this poster presentation is to explain the concept and to demonstrate the step-by-step of the CARS technique. Moreover, comparison between the CARS technique and other bone augmentation techniques will be presented, including the indications, the advantages, the disadvantages and the limitations.

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Conventional Ridge Splitting Technique vs CARS Technique



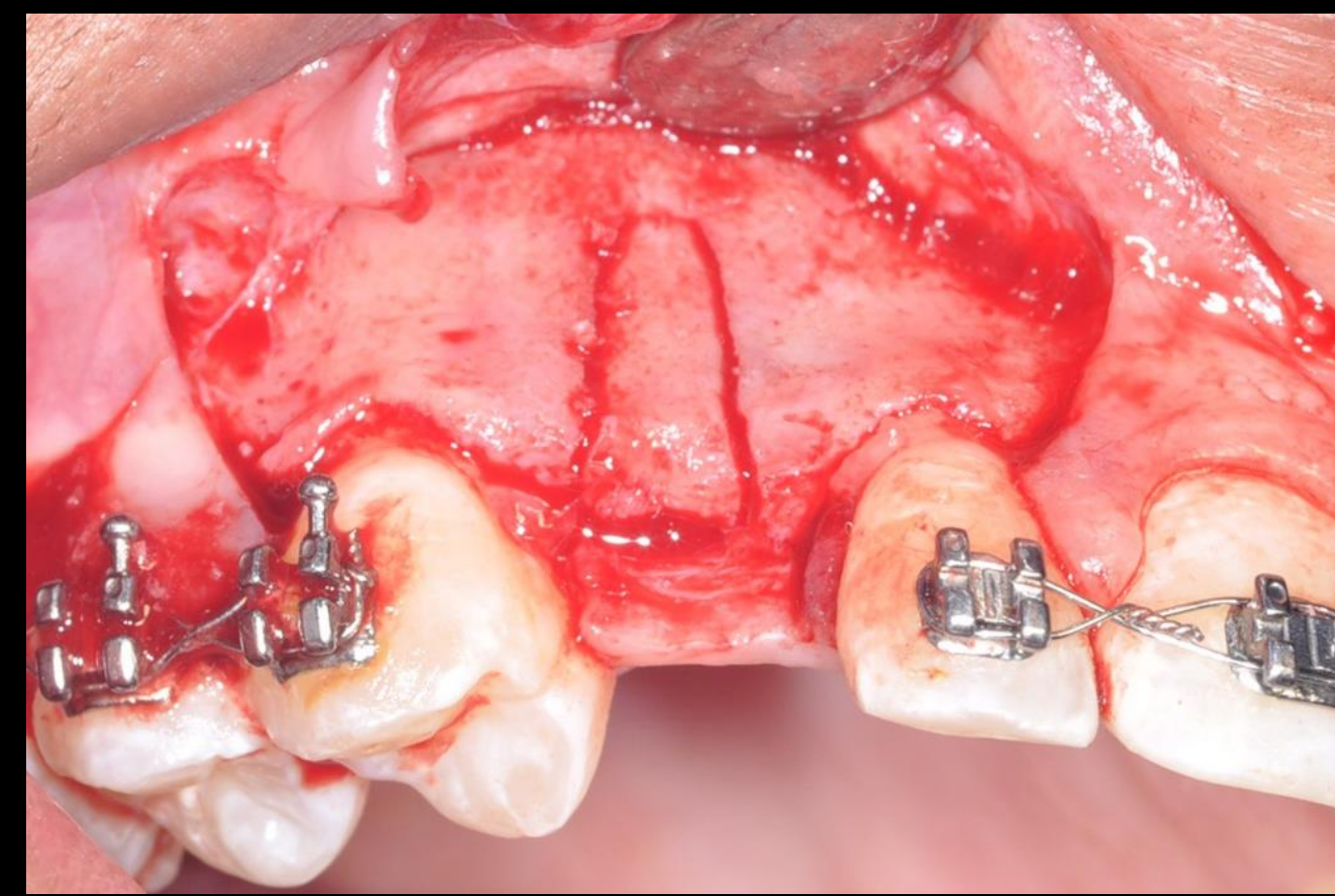
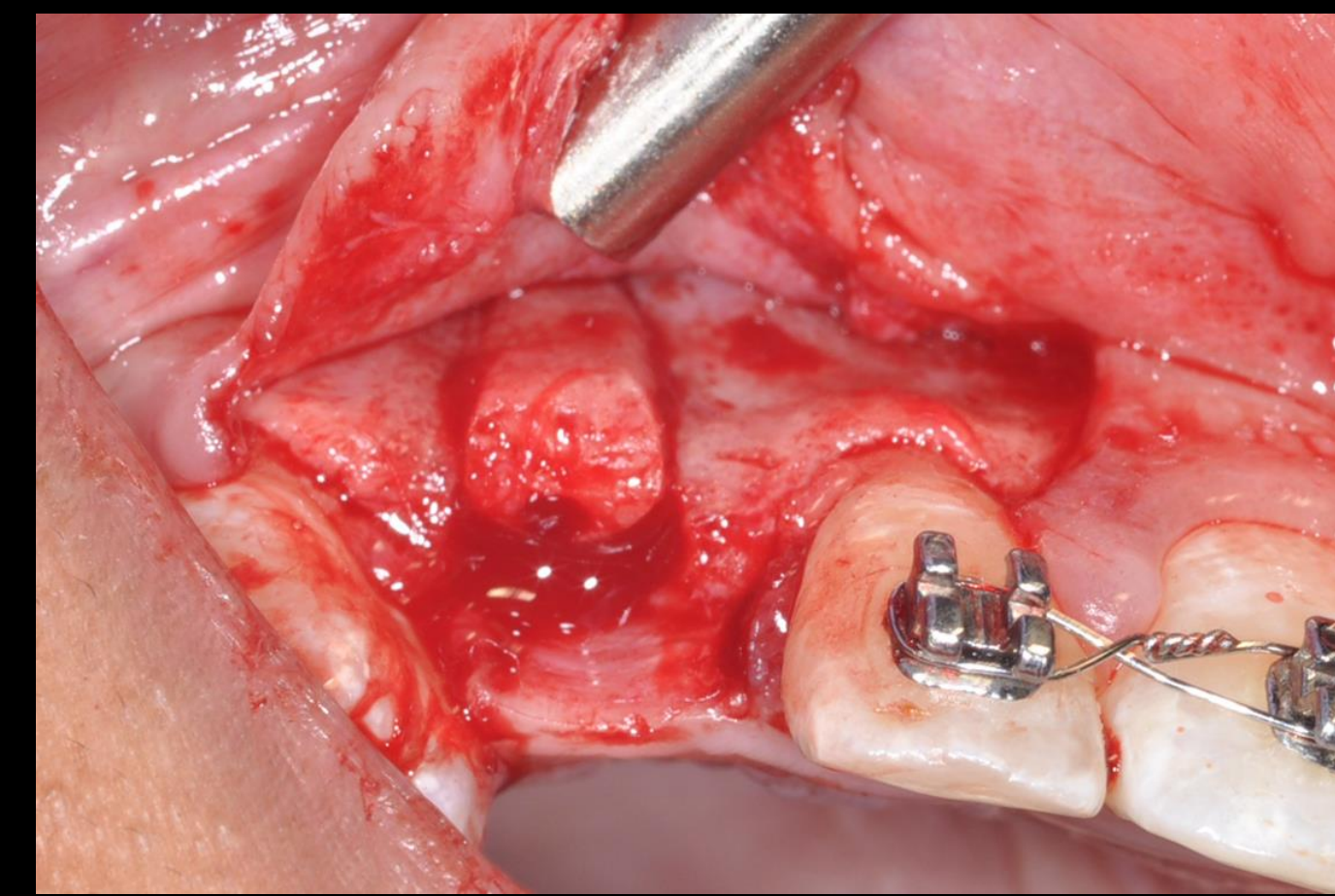
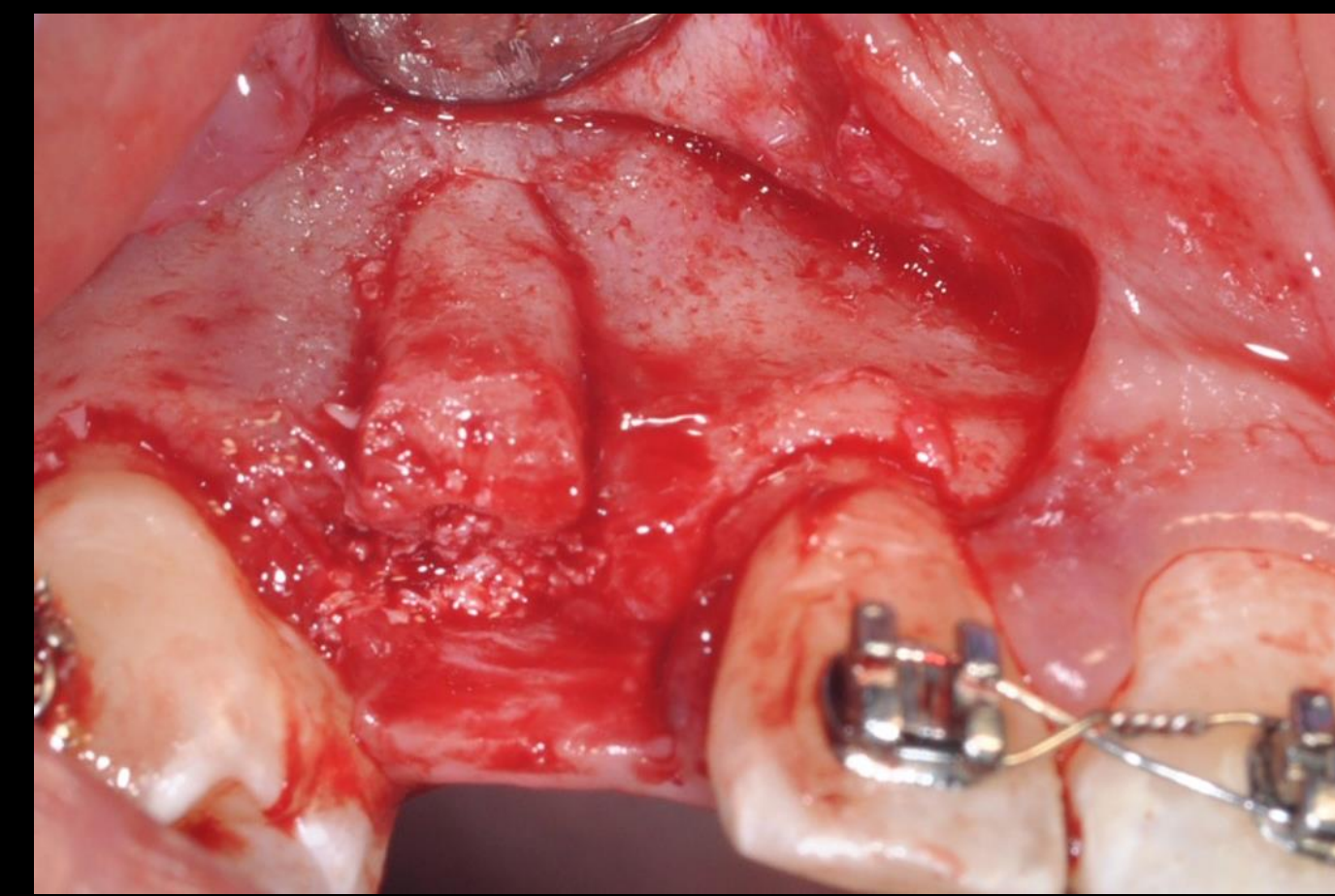
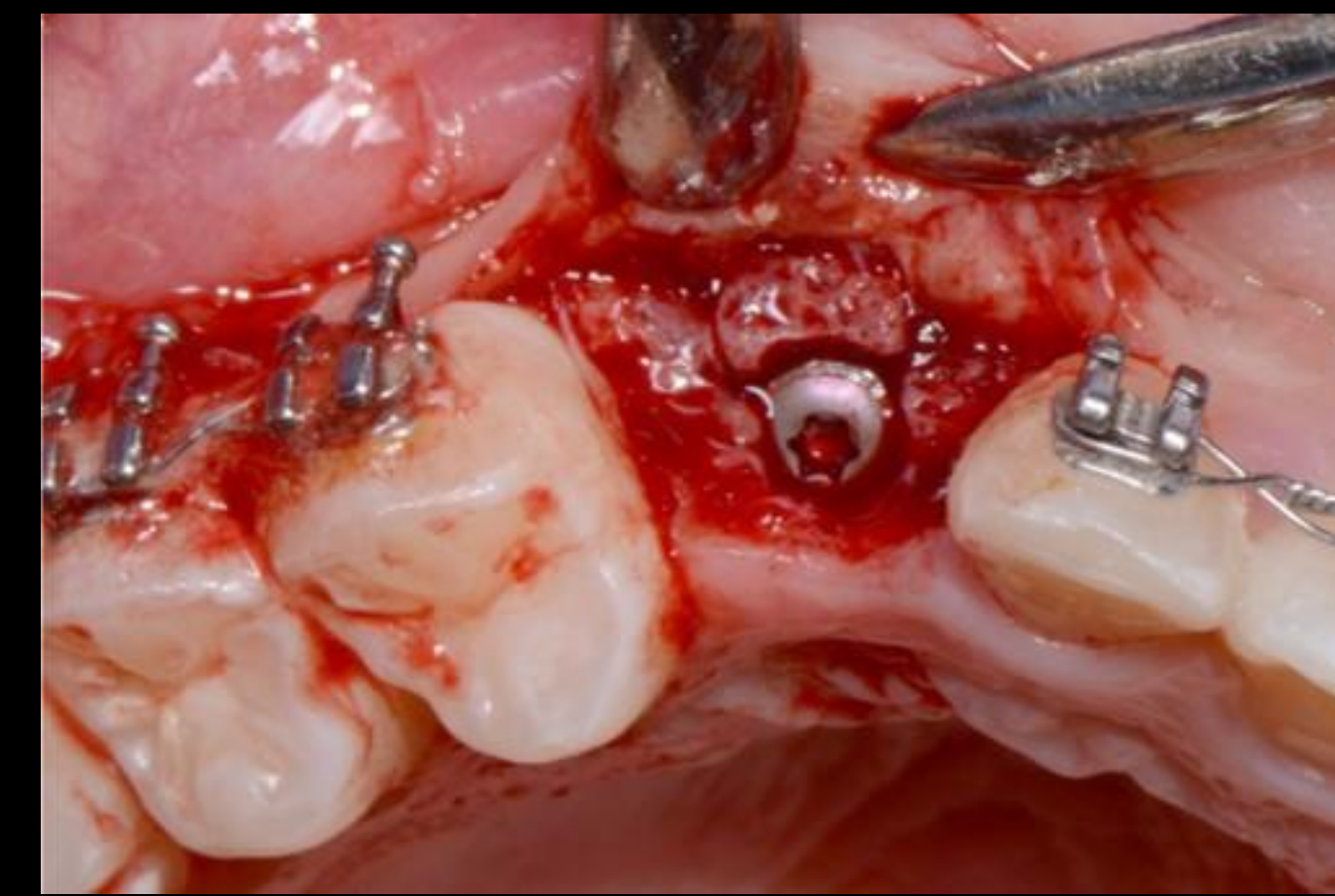
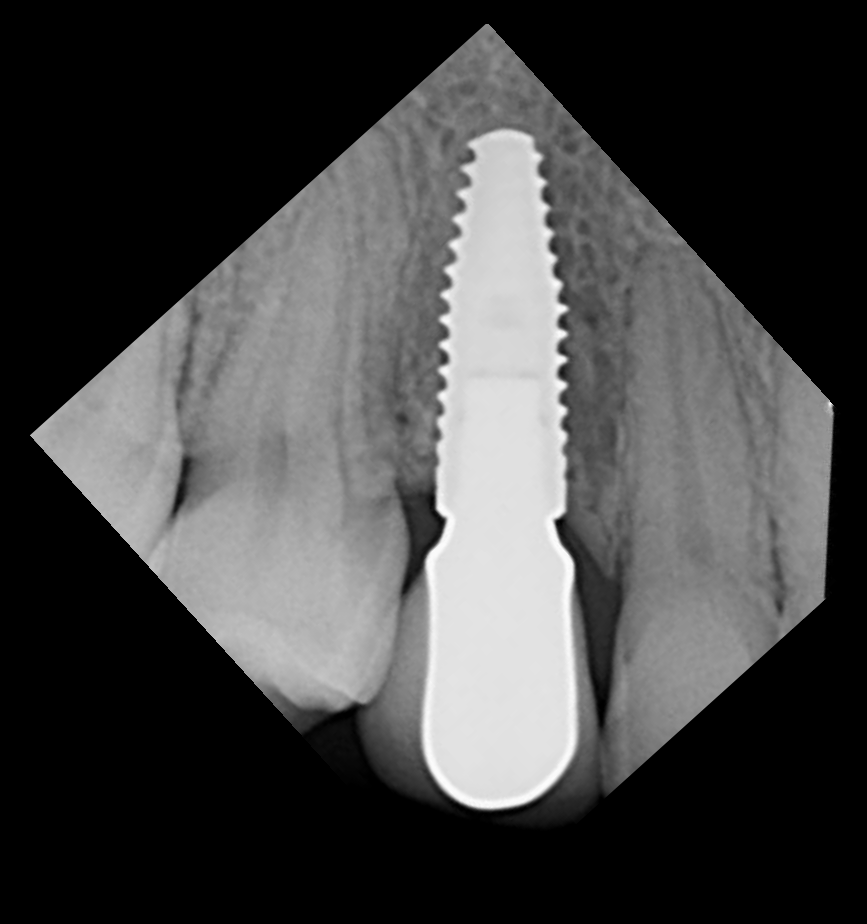
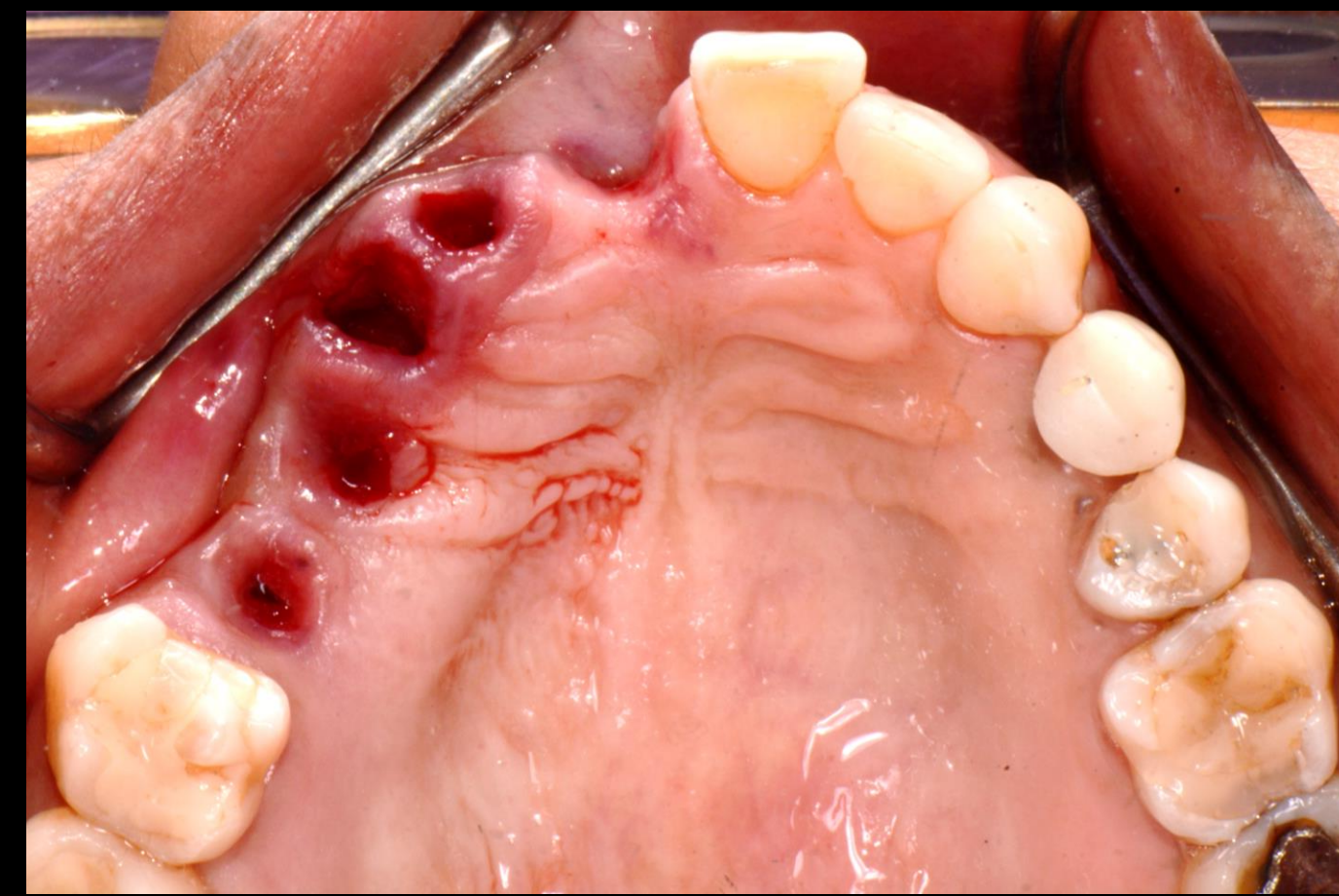
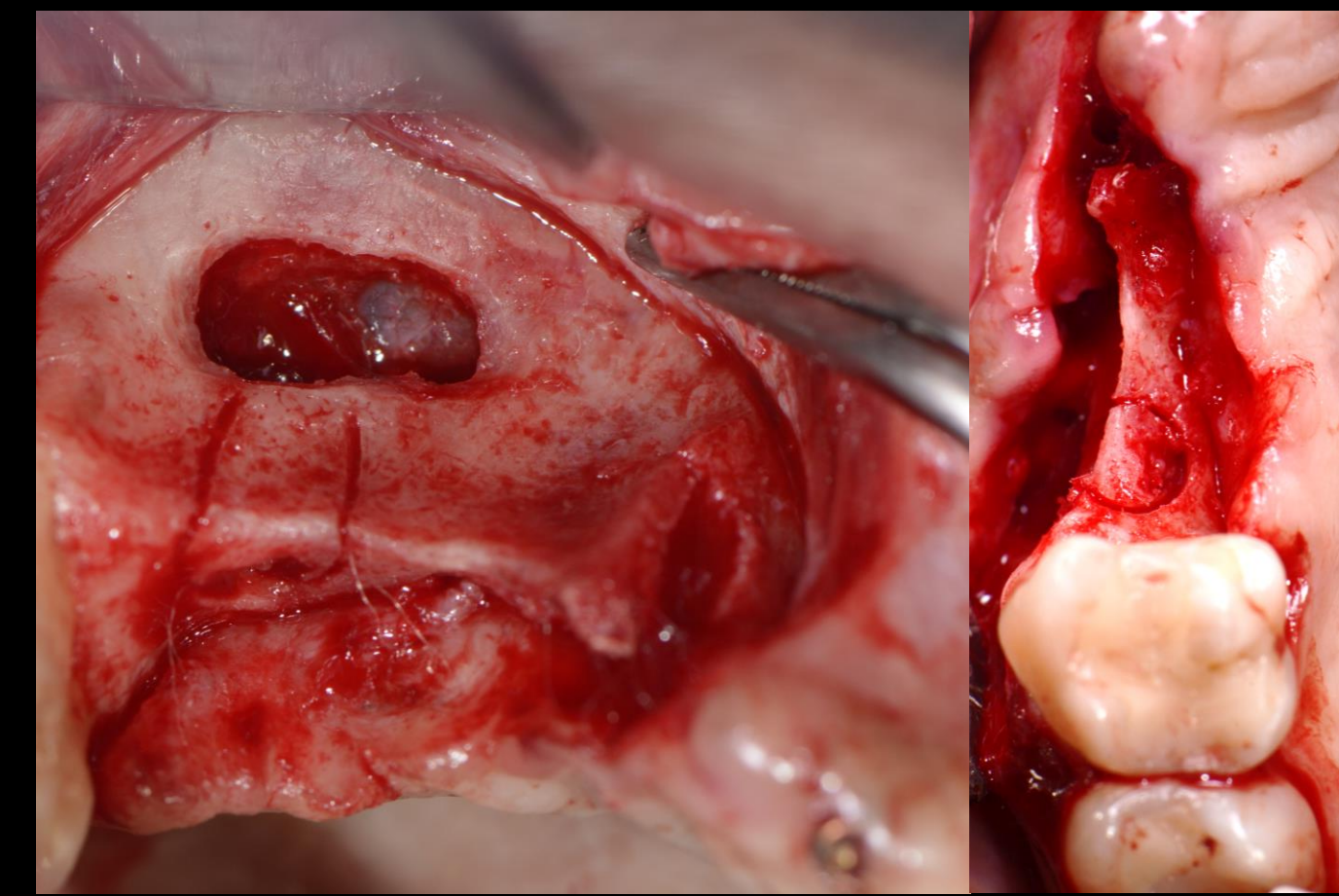
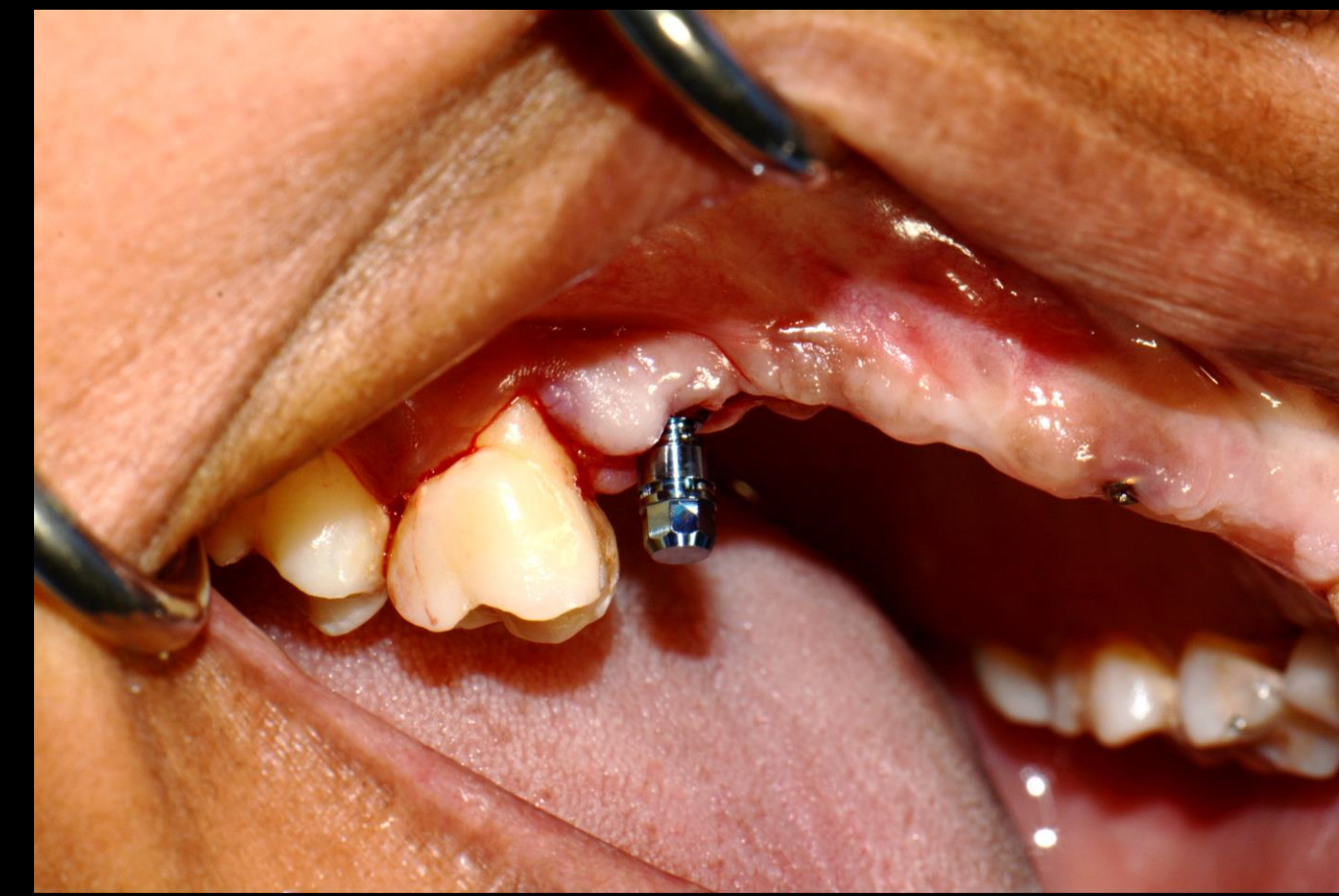
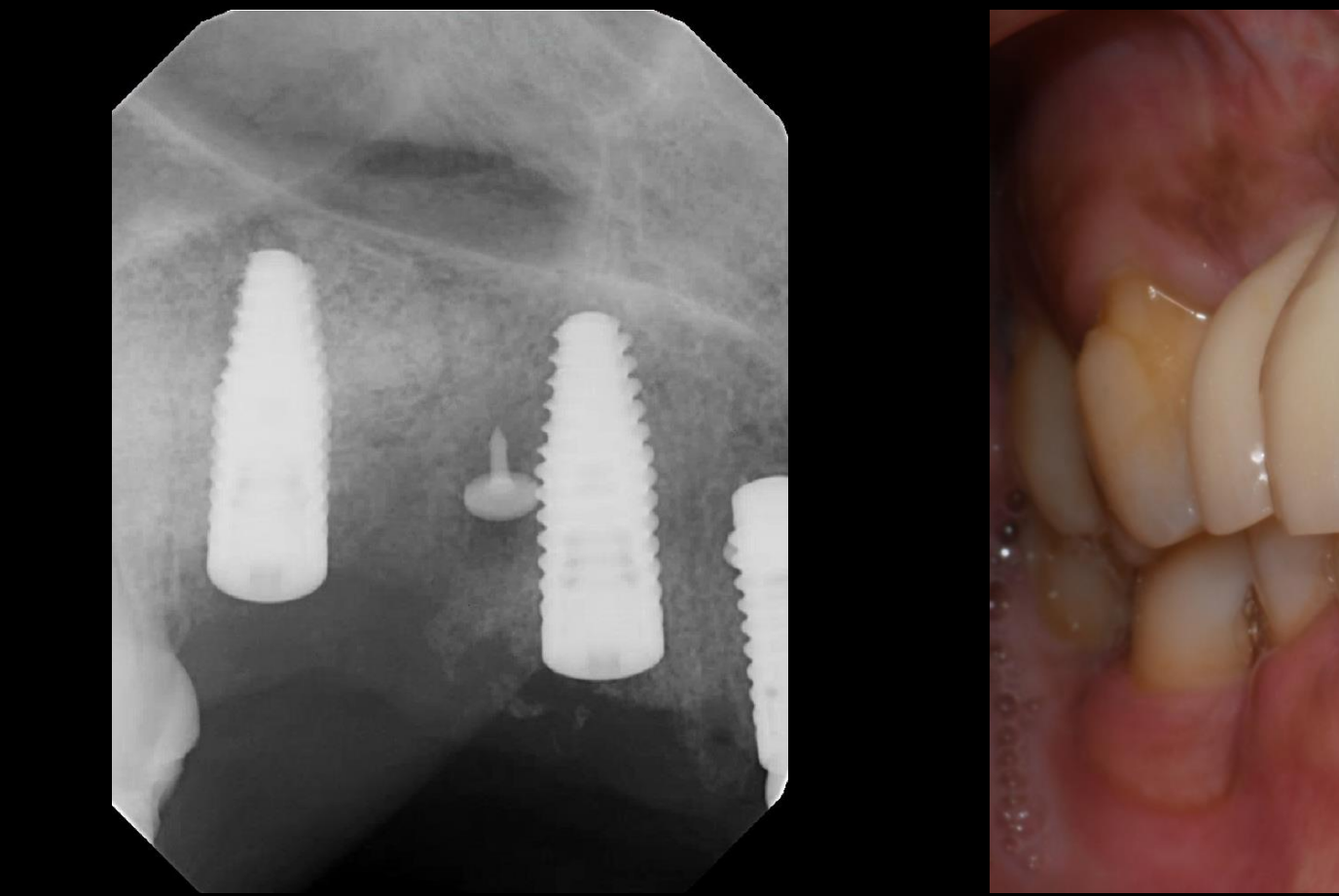
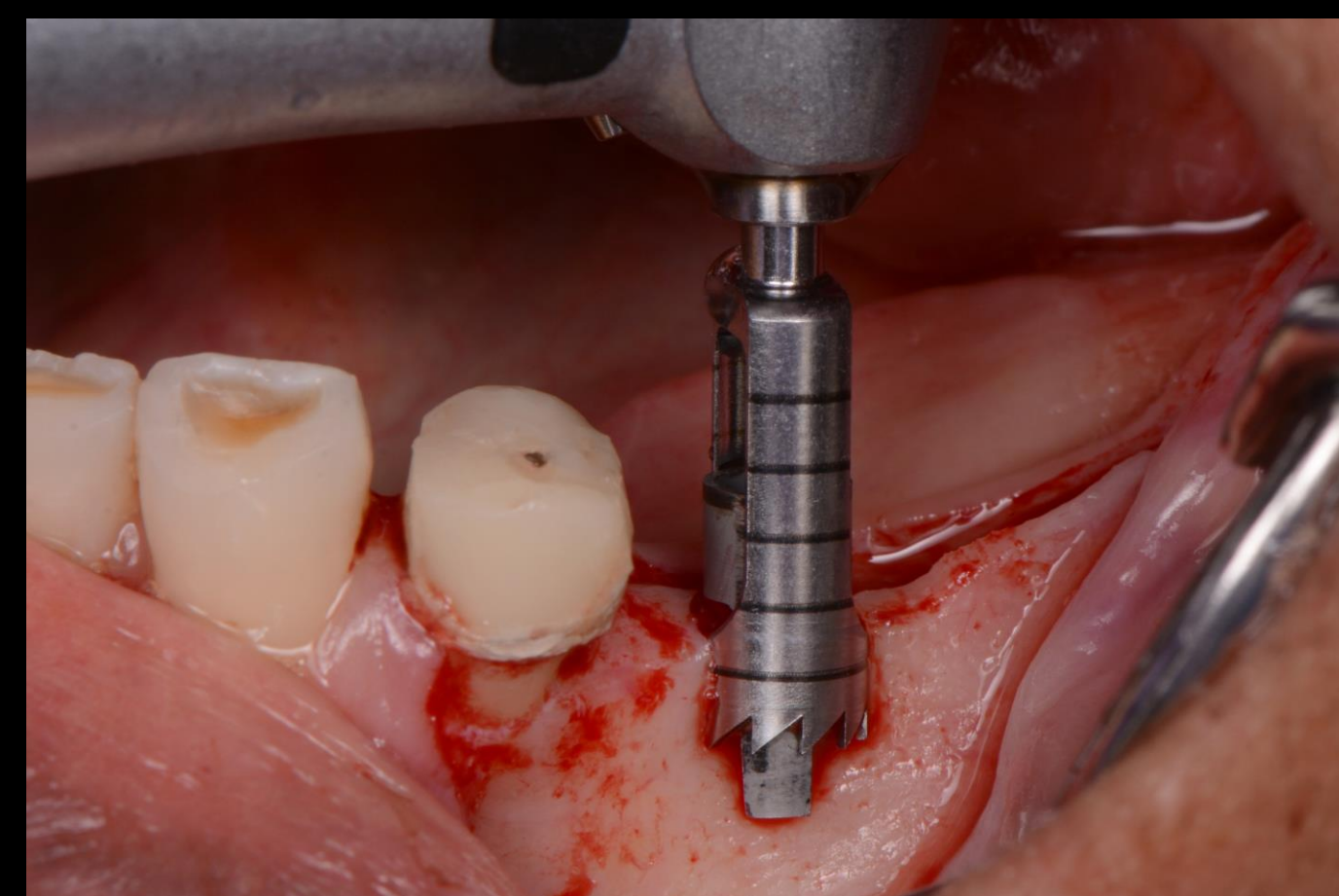
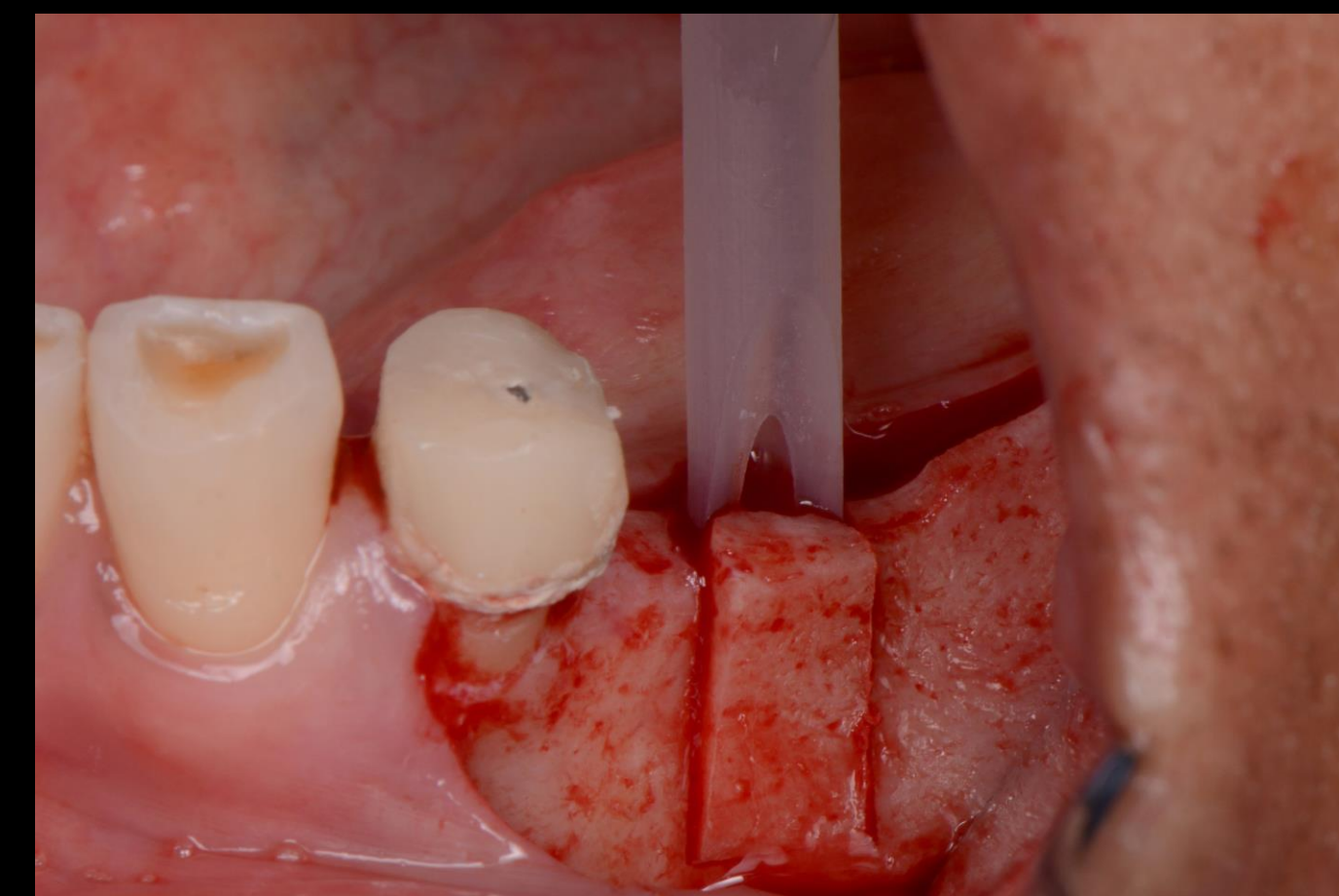
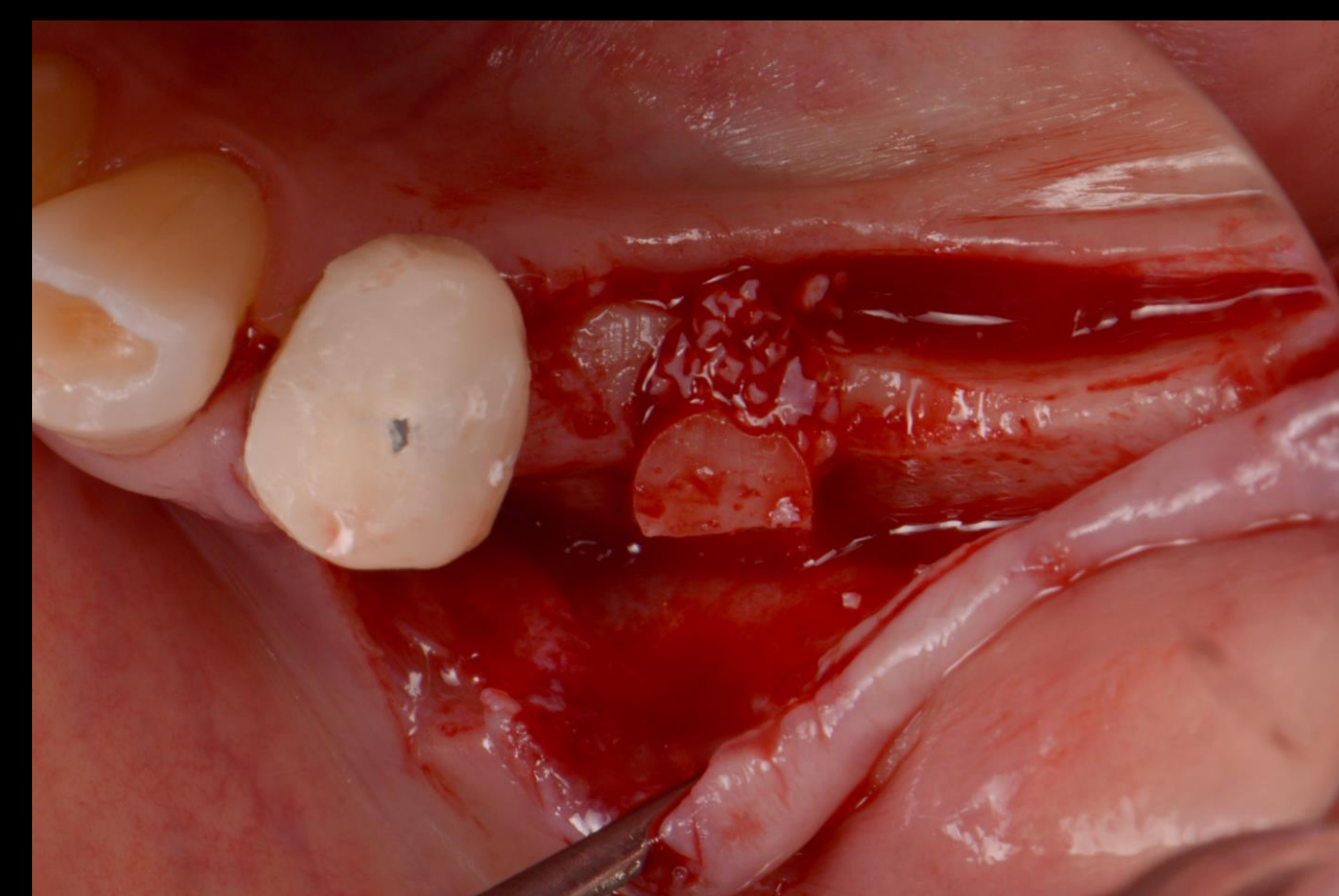
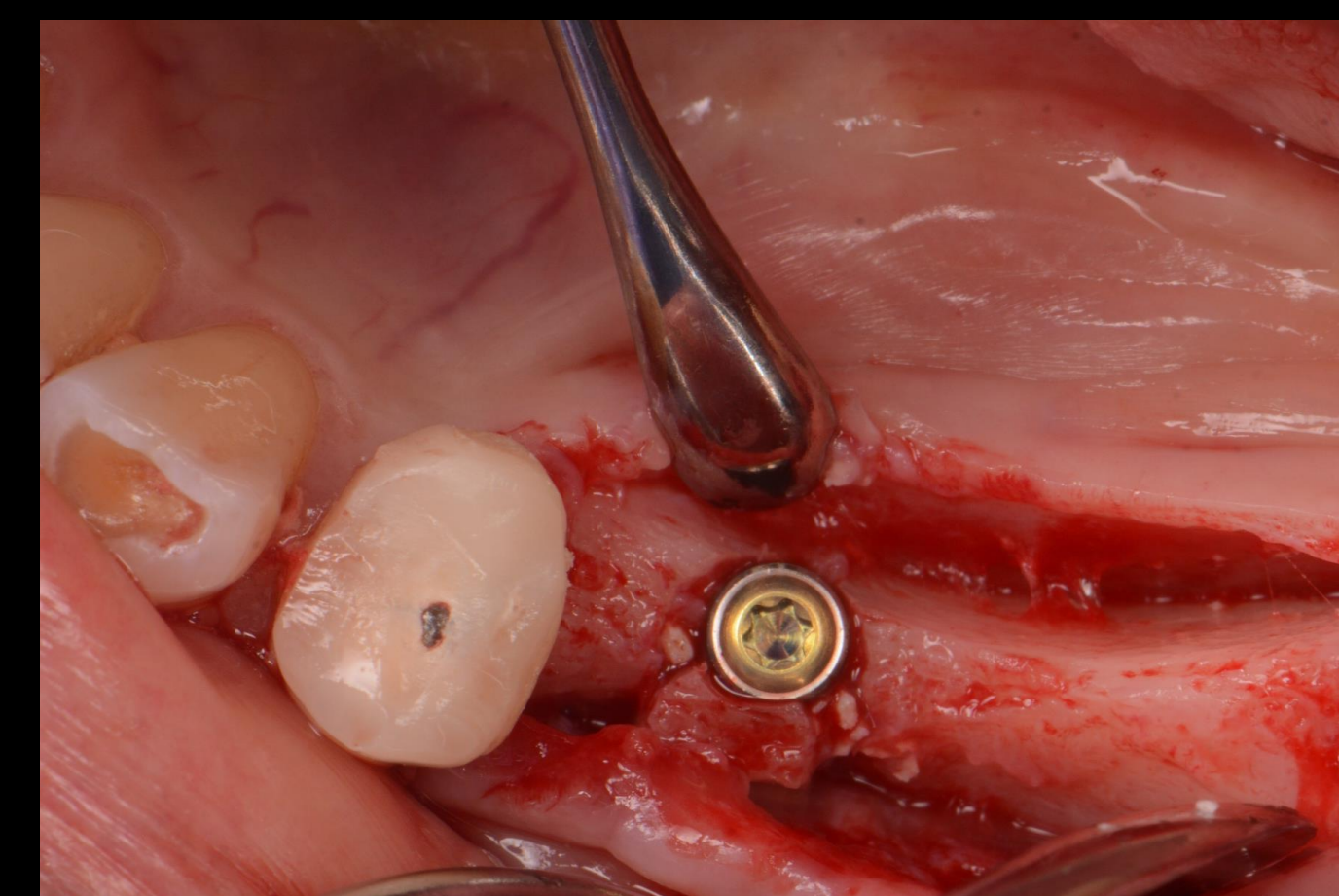
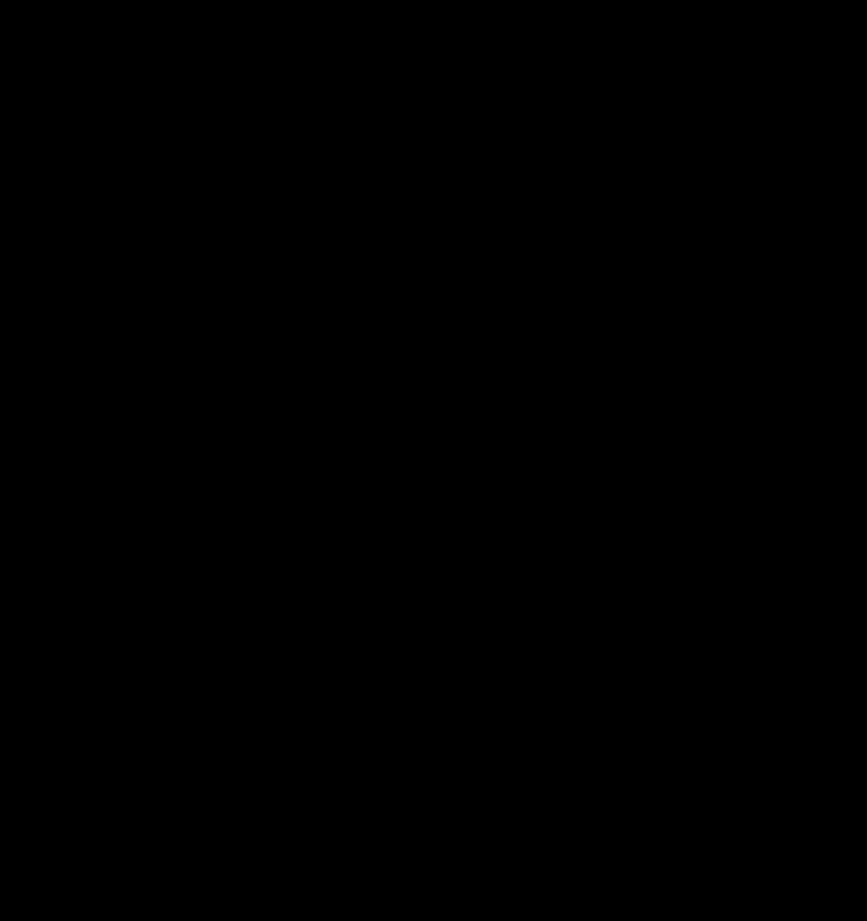


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RESULTS: CLINICAL CASES





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DISCUSSION

Comparison between other bone augmentation techniques and CARS technique:	
Advantages	<div>No membrane is needed;</div> <div>Less time consuming;</div> <div>Less traumatic;</div> <div>Less postoperative complications (possibly);</div> <div>Creation of an intraosseous defect;</div> <div>Implant surrounded by natural bone;</div> <div>No need for additional grafting.</div>
Disadvantages	<div>Buccal plate fracture;</div> <div>Bone Block exposure;</div> <div>More than one surgery needed.</div>
Limitations	<div>Technique sensitive;</div> <div>Steep learning curve;</div> <div>Low documentation;</div> <div>No bone height gain.</div>
Indications	<div>Bone width gain needed.</div>



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CONCLUSIONS

The CARS technique is a viable alternative treatment option in cases of atrophic alveolar ridges when horizontal ridge augmentation is needed prior to implant placement. Nevertheless, more clinical research and long-term follow-up are needed to validate the use of this technique in the future.

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