

EXPECT THE UNEXPECTED: LINGUAL BONE PERFORATION DURING IMPLANT PLACEMENT

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Introduction

Complications during implant placement
(Misch and Wang 2008)

Implant complications
(Hämmerle and Tarnow 2017, Romanos *et al* 2019)

Biological

Treatment plan related

Procedure related

Surgical

Anatomy related

Prosthetic

Other

Objective

To discuss lingual bone perforation during implant placement on lower left posterior region and its management.

3.4mm implant width and 9.5mm implant length + adjunct concentrated growth factor (CGF).

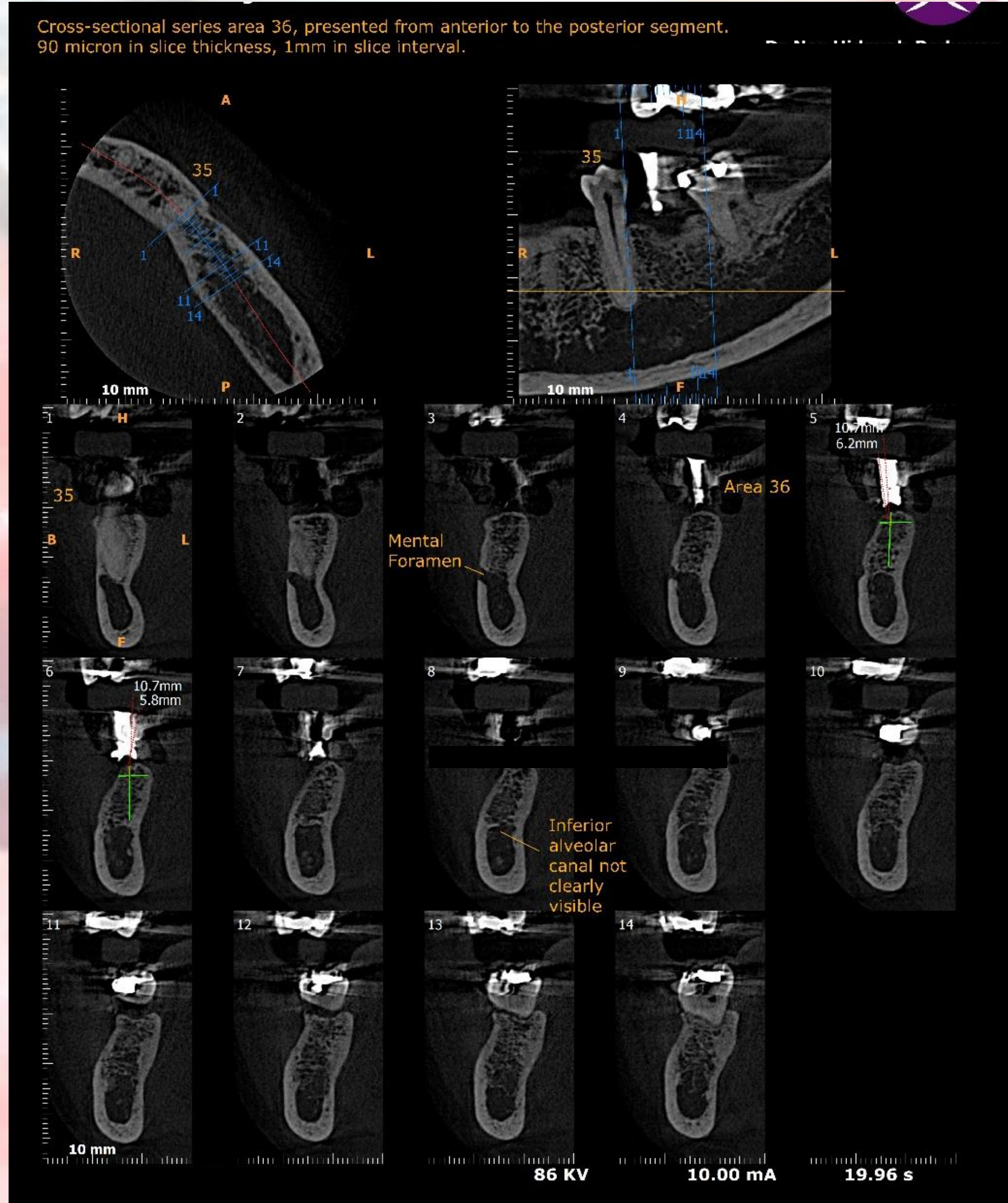
Case report

53-year-old, lady

Pre-operative

Plan

- Individual surgical stent.
- Cone beam computed tomography.



Intra-operative

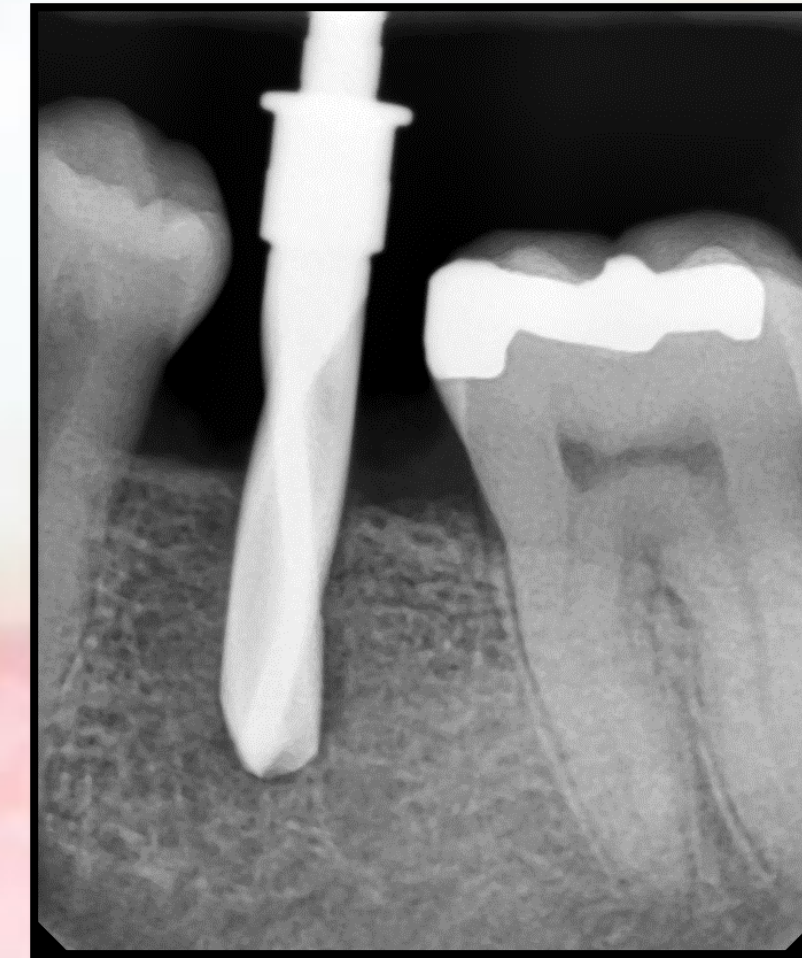
1



A full thickness flap was elevated.

2

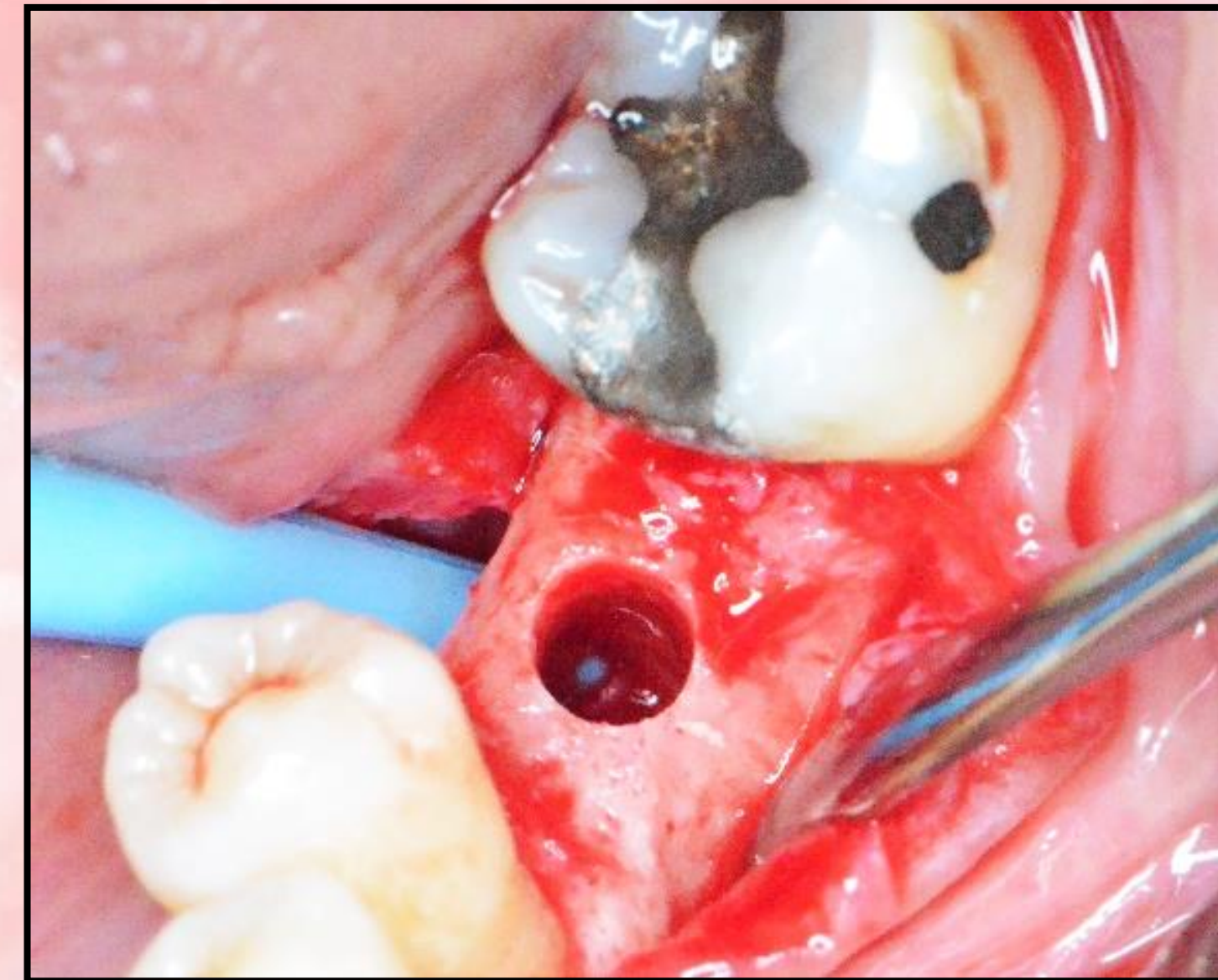
The surgery was initiated with a 2mm pilot marking drill up to 7.5mm in depth.



3

Drilling was performed sequentially to 9.5mm depth.

4



A lingual bone fenestration was observed.

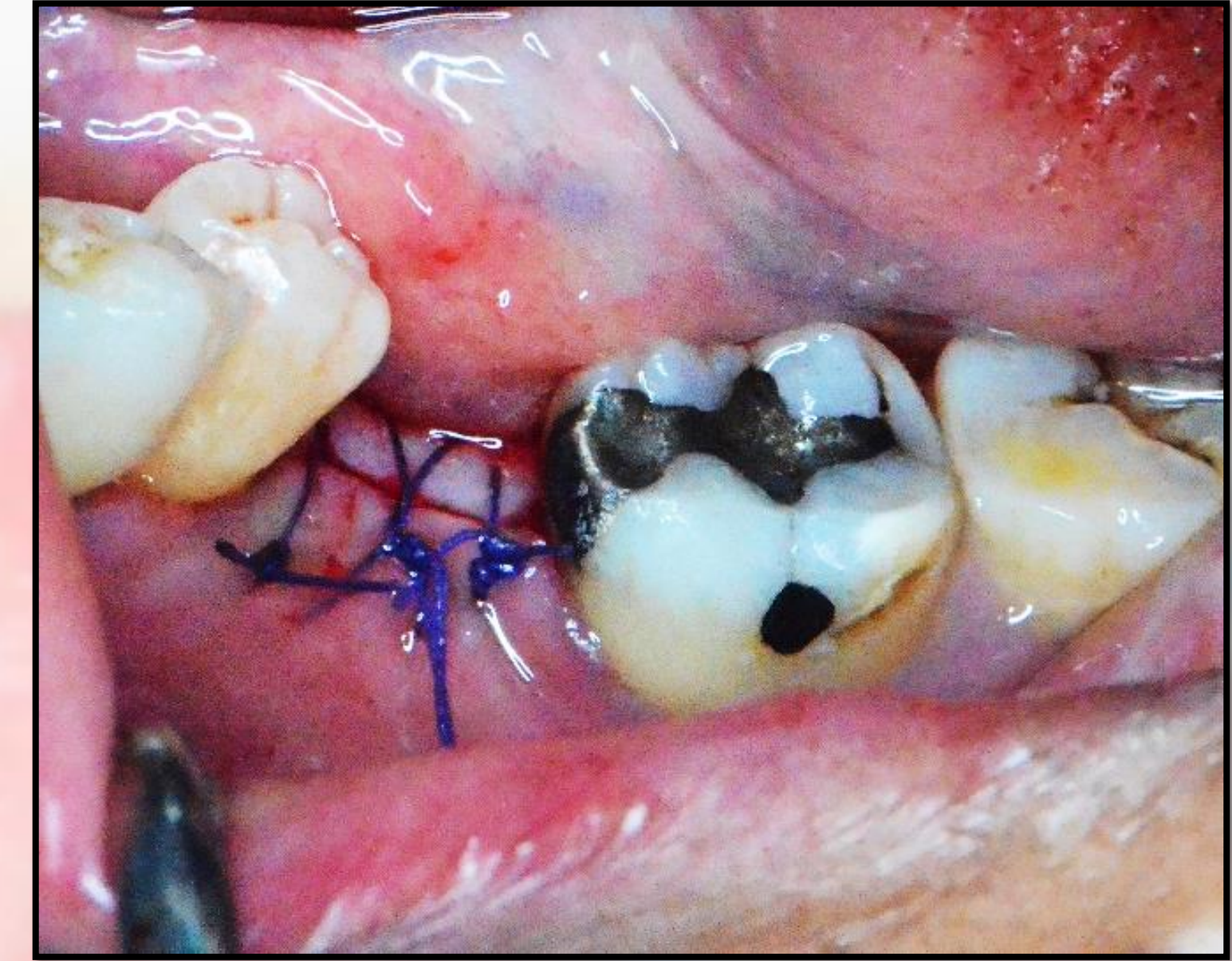
5 Guided bone regeneration procedure was performed.



Bone substitutes were condensed into the implant cavity and covered with a layer of collagen membrane.



Placement of CGF membrane prior to flap approximation.

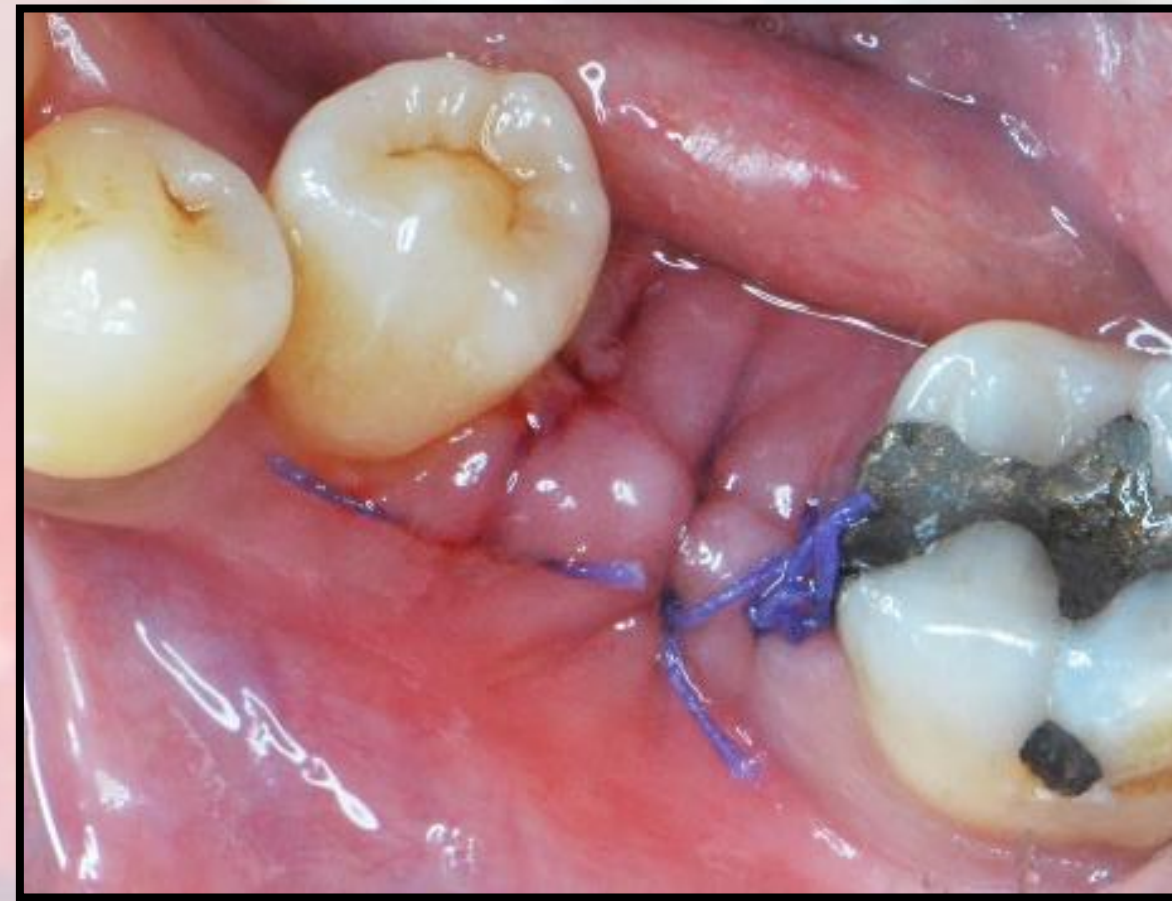


Flap approximation.

Post-operative



Three-day review.



One-week review.



Two-week review.



Two-month review.



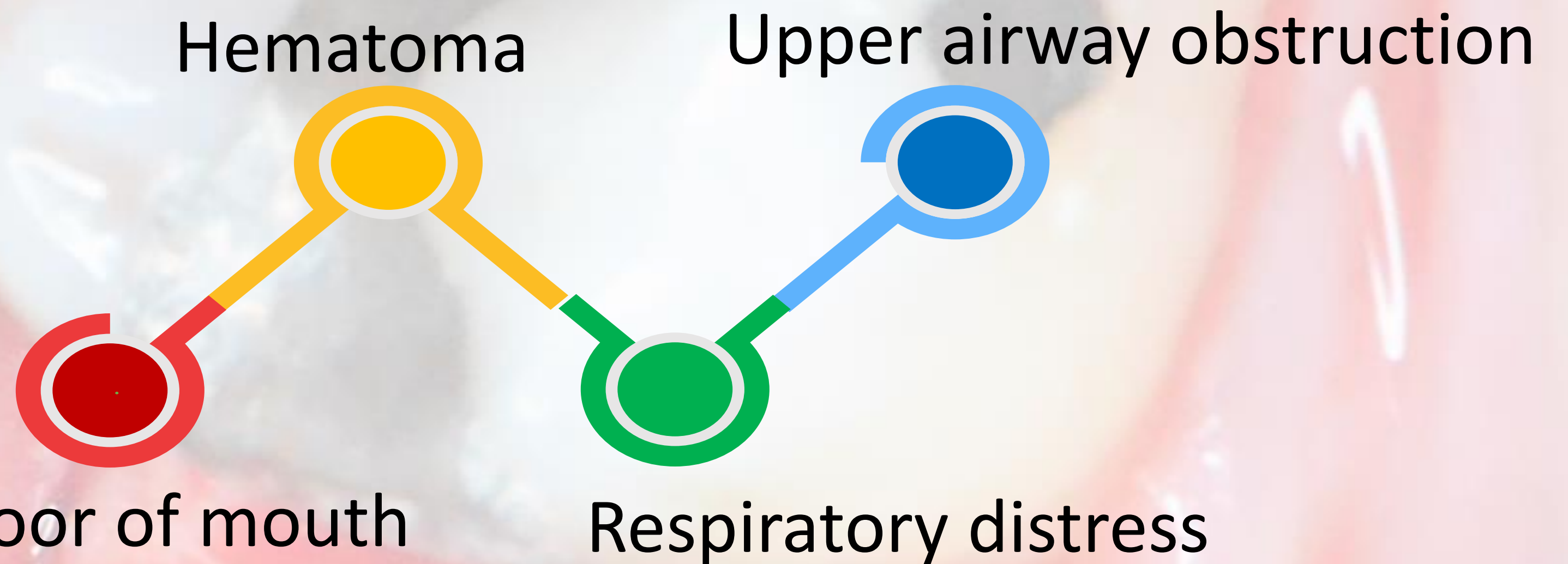
One-year review.

Discussion

Lingual bone perforation

(Kalpidis and Konstantinidis 2005, Dubois *et al* 2010).

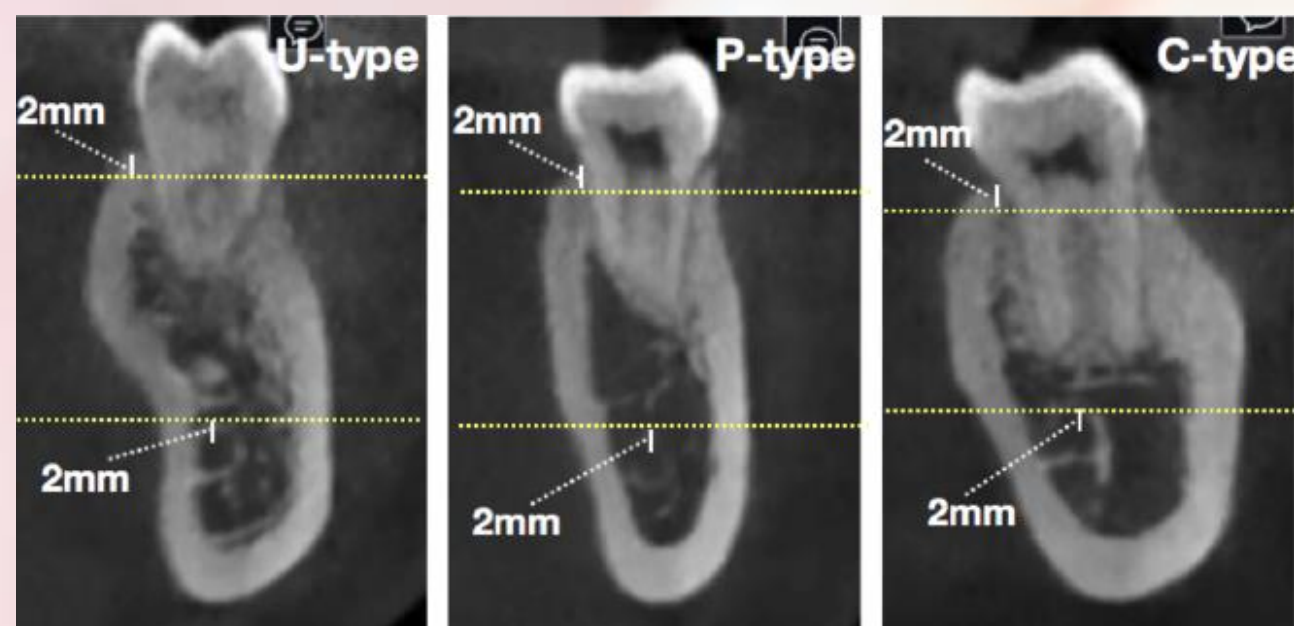
Hemorrhage in the floor of mouth



Risk of lingual bone perforation

Premolar and molar areas of the mandible are often affected by **lingual undercuts** (Hämmerle and Tarnow 2017).

Edentulous posterior mandibles are at greater risk of lingual cortical plate fenestration or perforation due to **lingual concavity** (Leong *et al* 2011).



A higher risk of lingual plate perforation in posterior mandible is associated with **U-type cross section** of implantation site (Sun *et al* 2023).

A close-up photograph of a dental procedure. A tooth with a white crown is visible. A surgical instrument is being used to work on the gum tissue around the base of the crown. The background is a soft, pinkish-red color, likely the patient's oral tissue.

Conclusion

Although a case can be relatively straightforward with proper surgical planning, clinicians need to always be prepared for the unexpected event.

References

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A close-up photograph of a surgical procedure. The central focus is a circular opening in a pinkish-red, moist tissue. A pair of surgical forceps is visible on the right side, holding the tissue. In the upper right, there is a white, circular object with a dark spot, possibly a surgical instrument or a piece of equipment. The overall scene is brightly lit, highlighting the texture and color of the tissue.

THANK YOU