

25^E CONGRÈS

PROGRAMME

SEPTEMBRE 2024
Jeudi 26 + Vendredi 27

CEI123
Rue Galilée 15, 1400 Yverdon-les-Bains

PARO
IMPLANT
FORMATI0N

Votre pratique clinique évolutive en
parodontologie, implantologie et prothèse implantaire

Régénération des alvéoles d'avulsion présentant une perte osseuse avancée

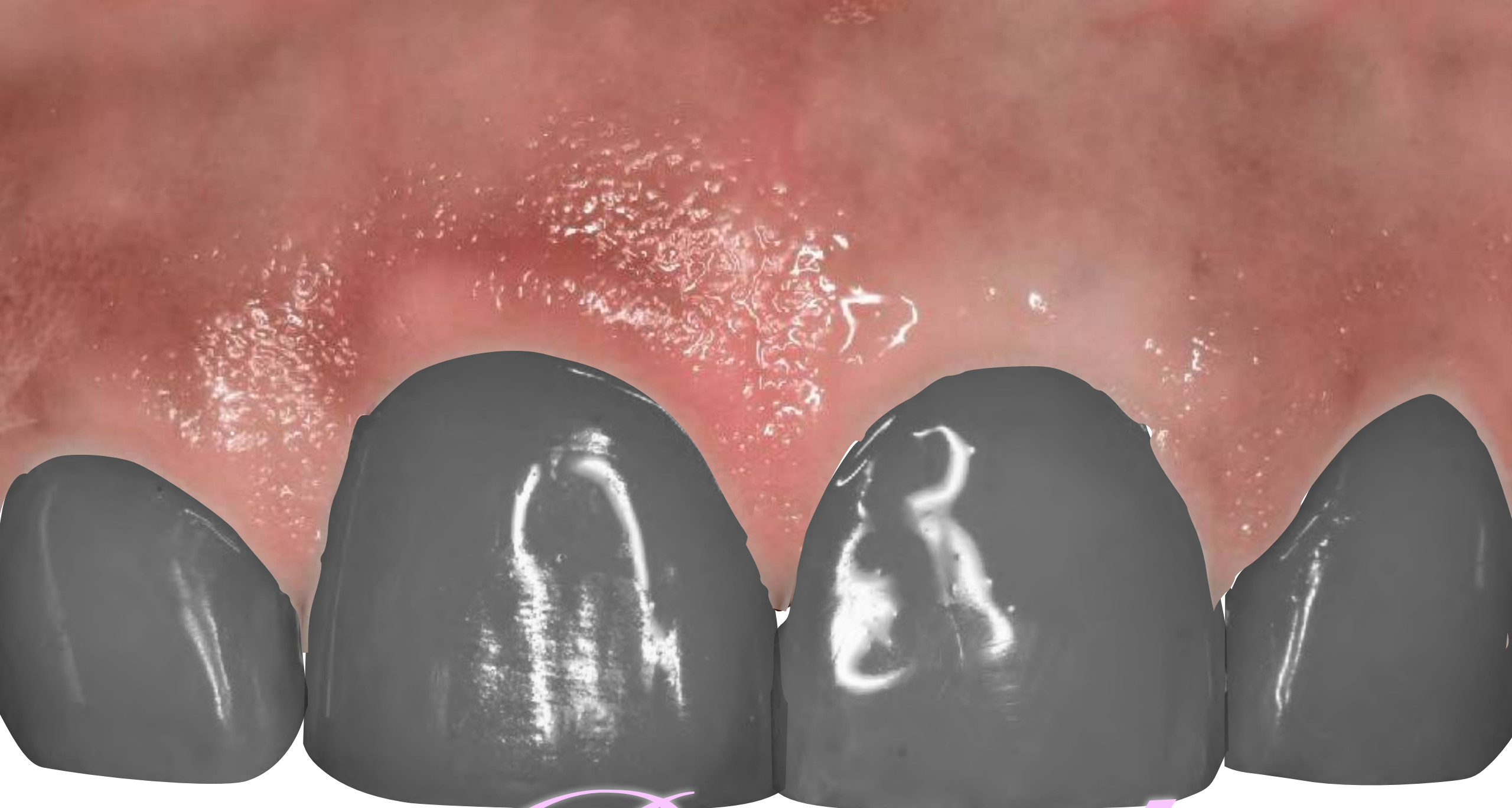


Dr Pierre CHERFANE

*Implantologie-parodontologie
Paris*

rfane

pierre@dr-cherfane.com



Resultat

Furhauser et al. 2005

Pink Esthetic Score

Score

- 1: Papille médiale
- 2: Papille Distale
- 3: Profil de la gencive V
- 4: Niveau du collet
- 5: Convexité radiculaire /
couleur et texture des TM

0 1 2

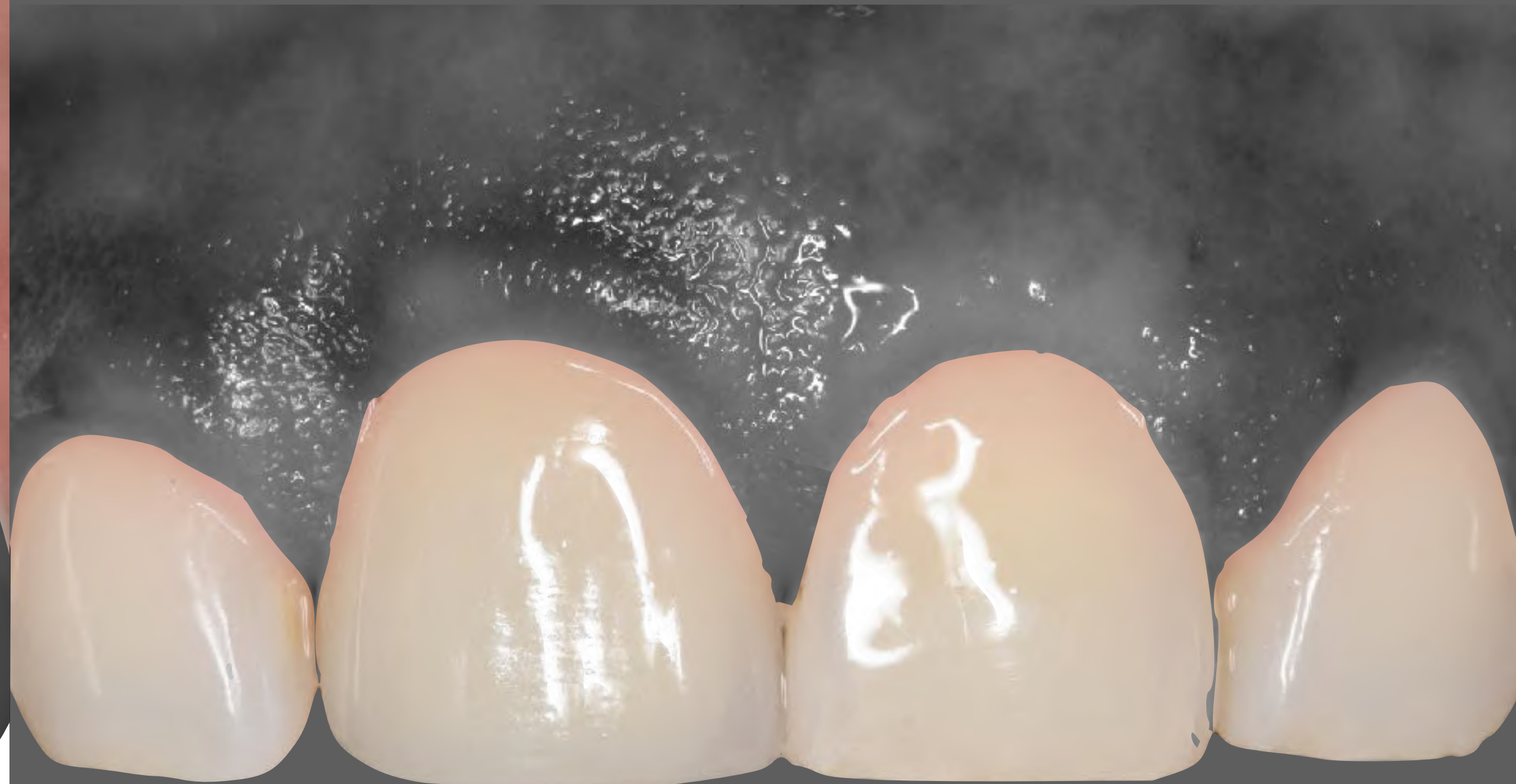
0 1 2

0 1 2

0 1 2

0 1 2

Total / 10



optimal

Belser et al. 2009

White Esthetic Score

Score

- 1: Forme couronne
- 2: Volume /contour
- 3: Teinte / valeur
- 4: Texture
- 5: Translucidité /
caractérisations

0 1 2

0 1 2

0 1 2

0 1 2

0 1 2

Total / 10



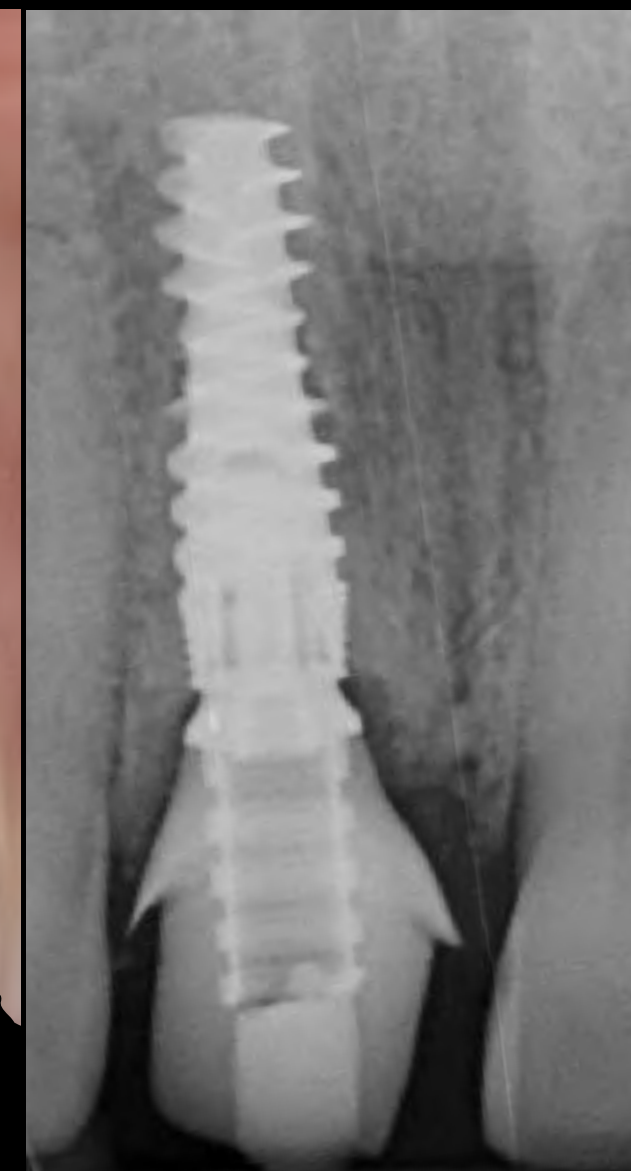
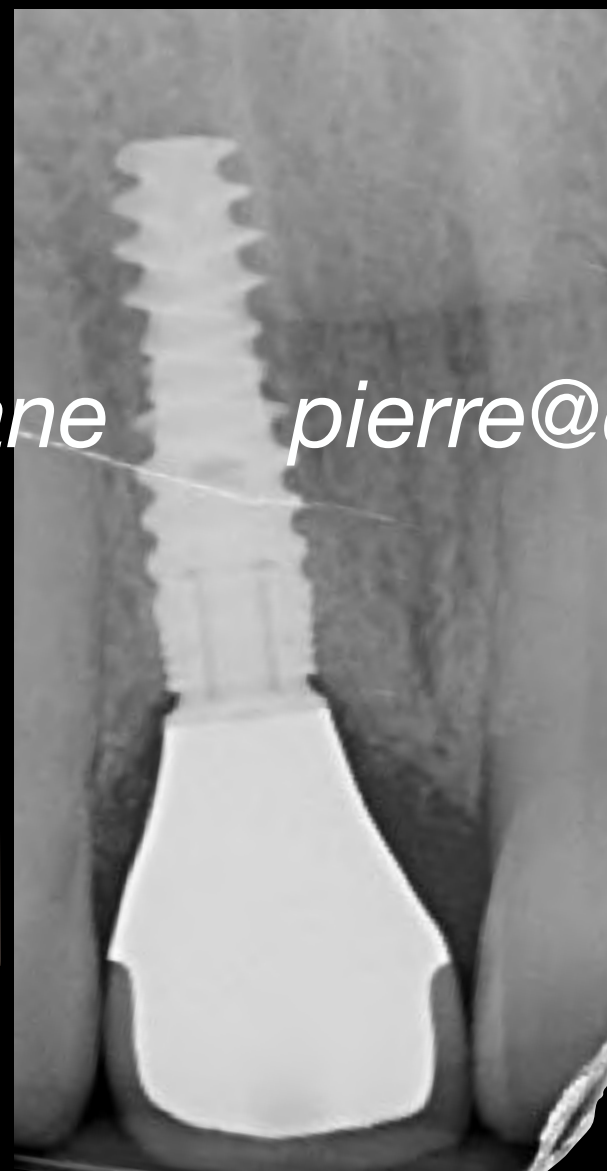
**La pérennité du résultat
Vieillissement acceptable**





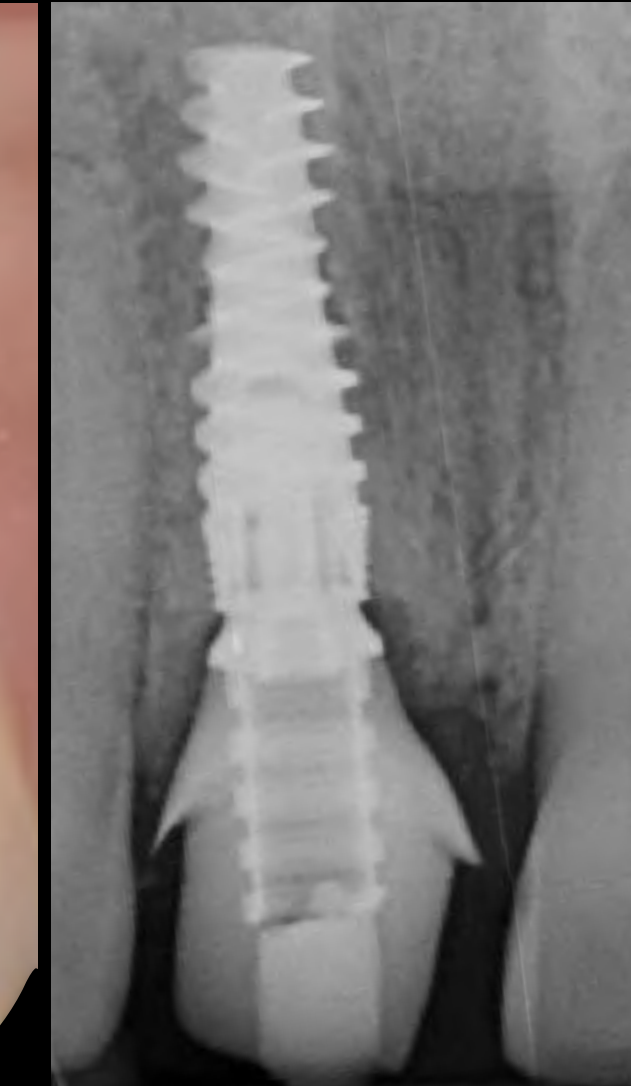
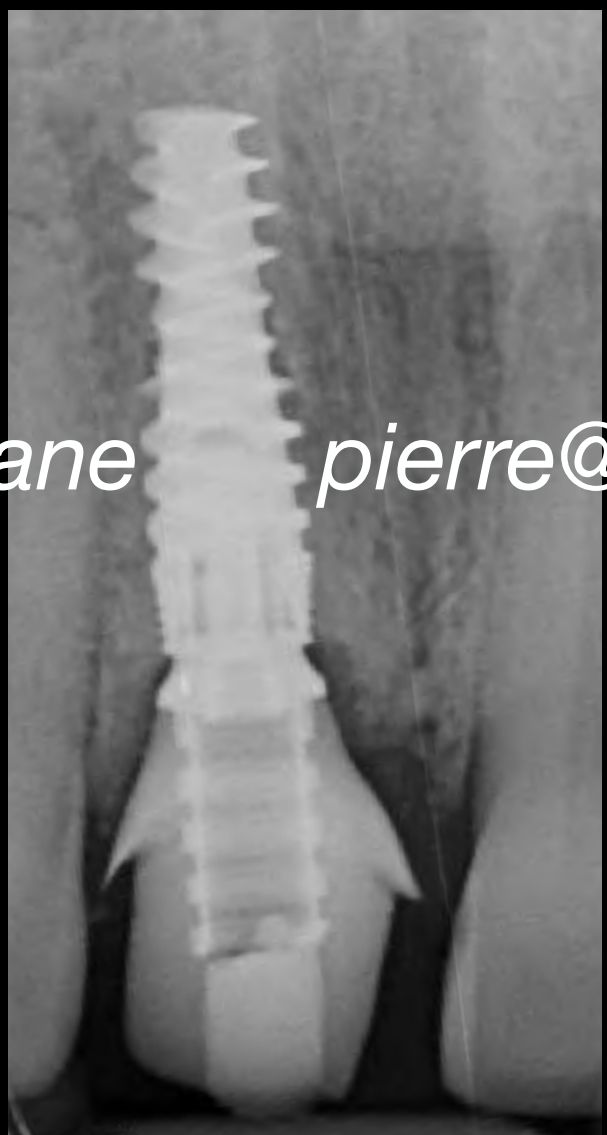
Dr Pierre Cherfane

pierre@dr-cherfane.com



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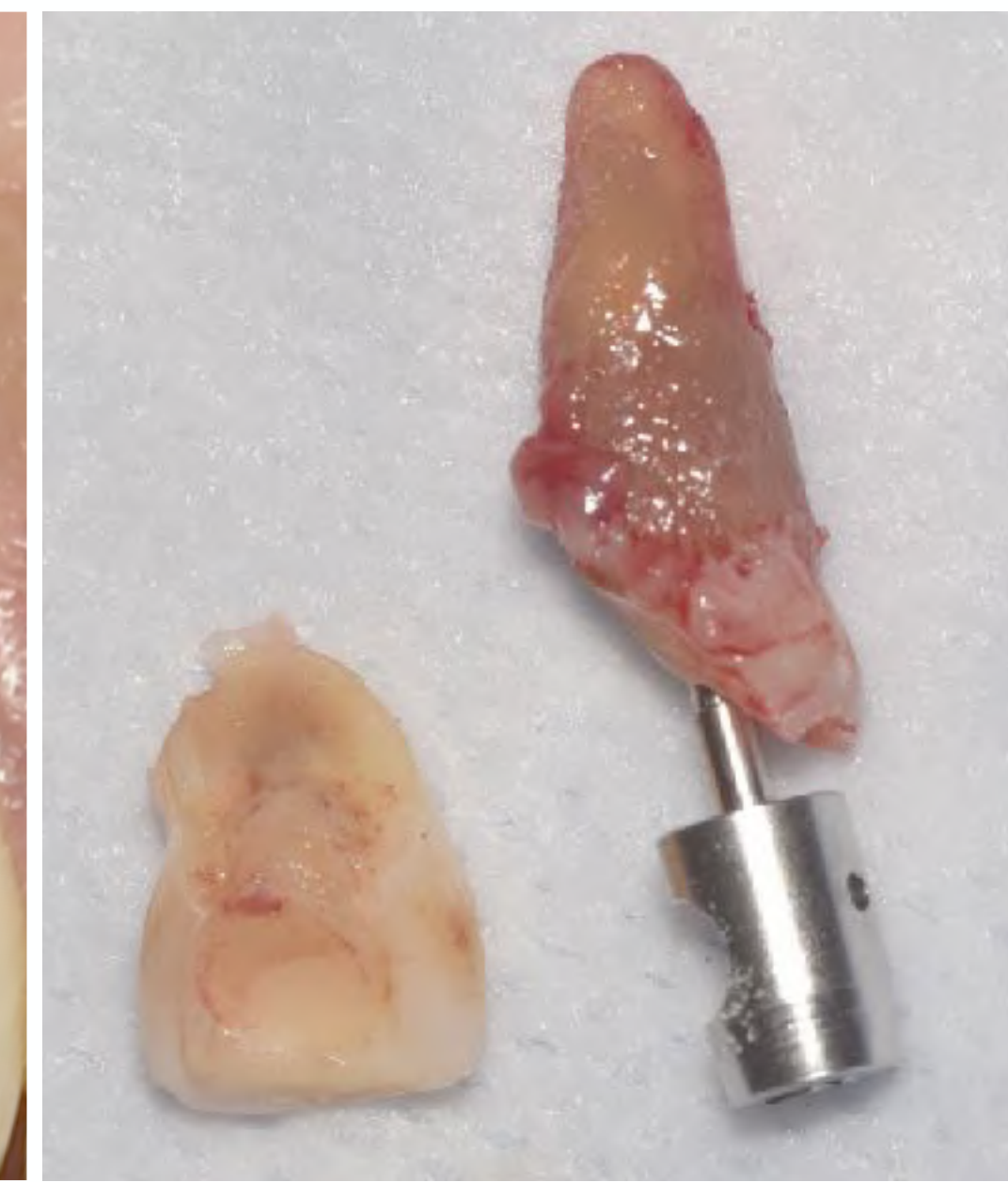
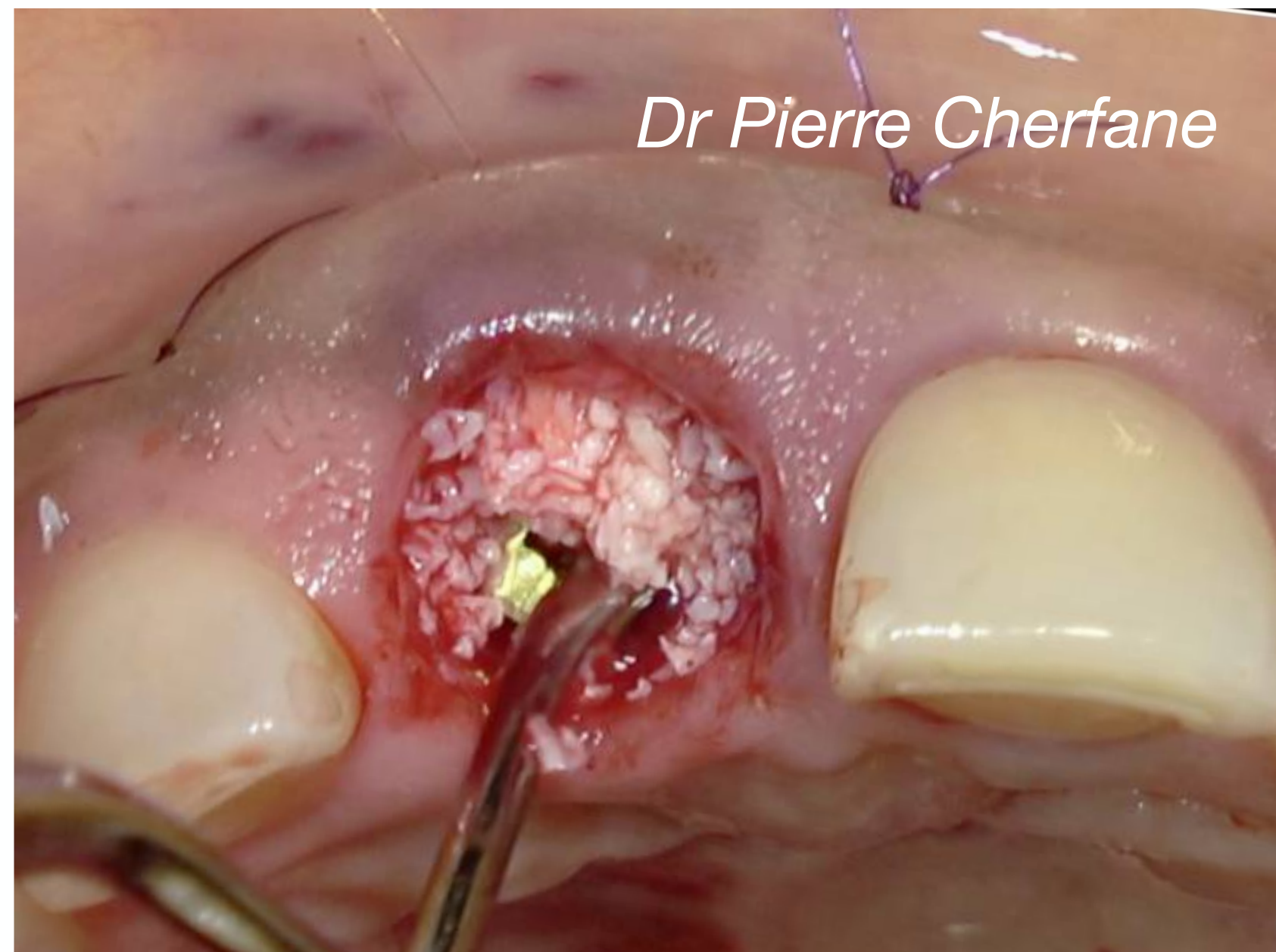
pierre@dr-cherfane.com



3 mois

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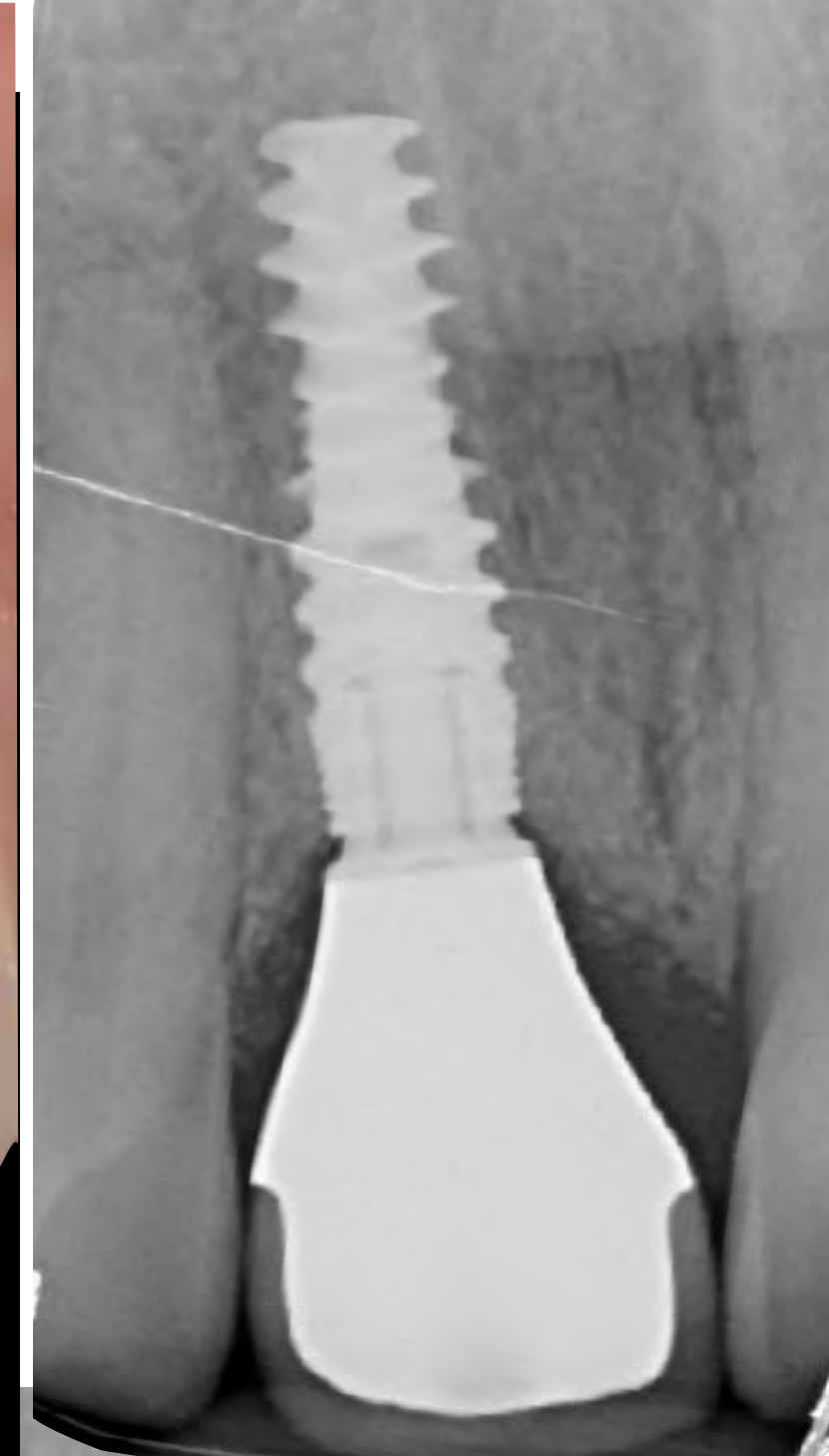
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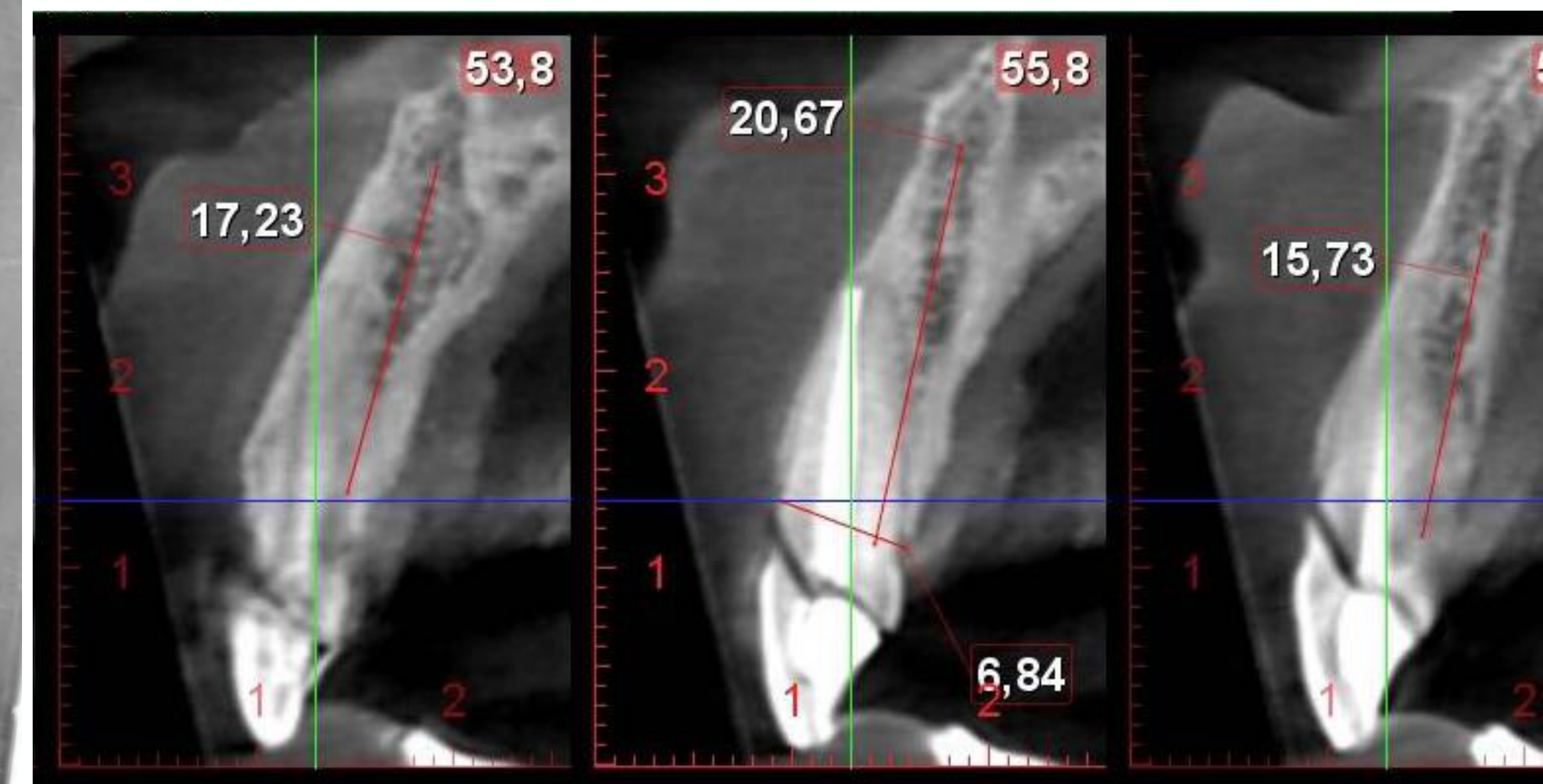


Final

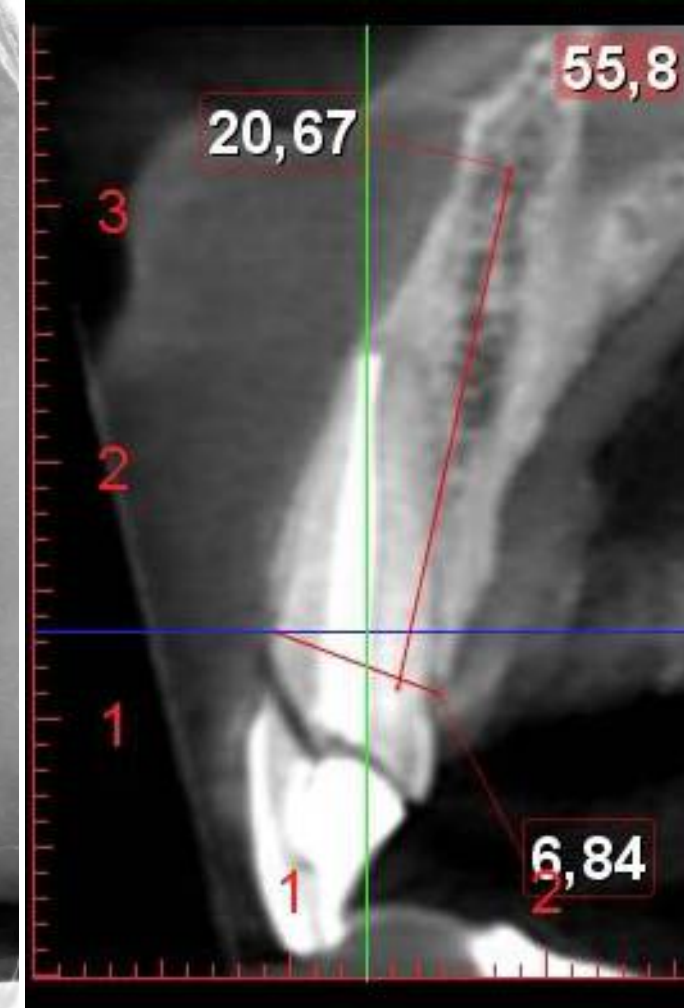
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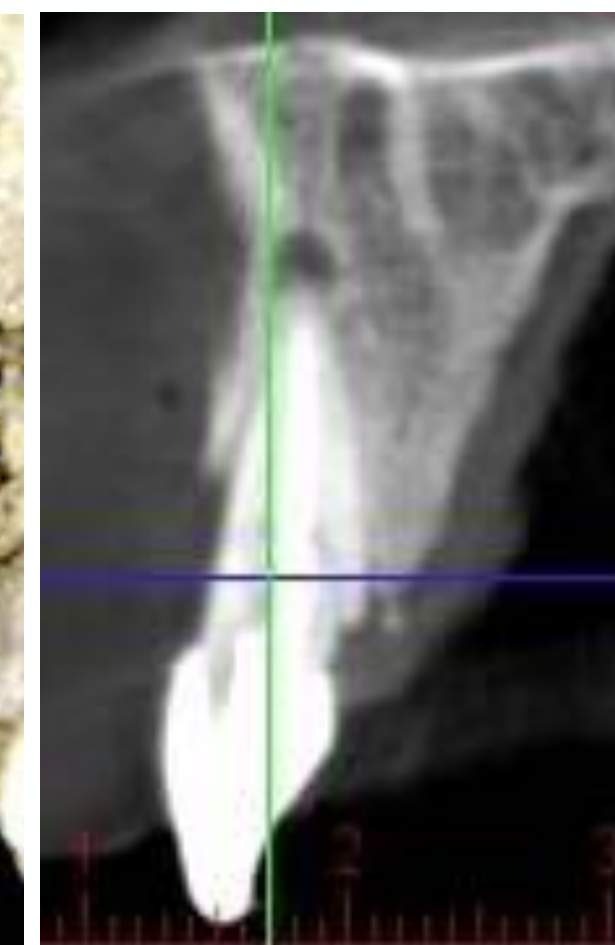
Initial



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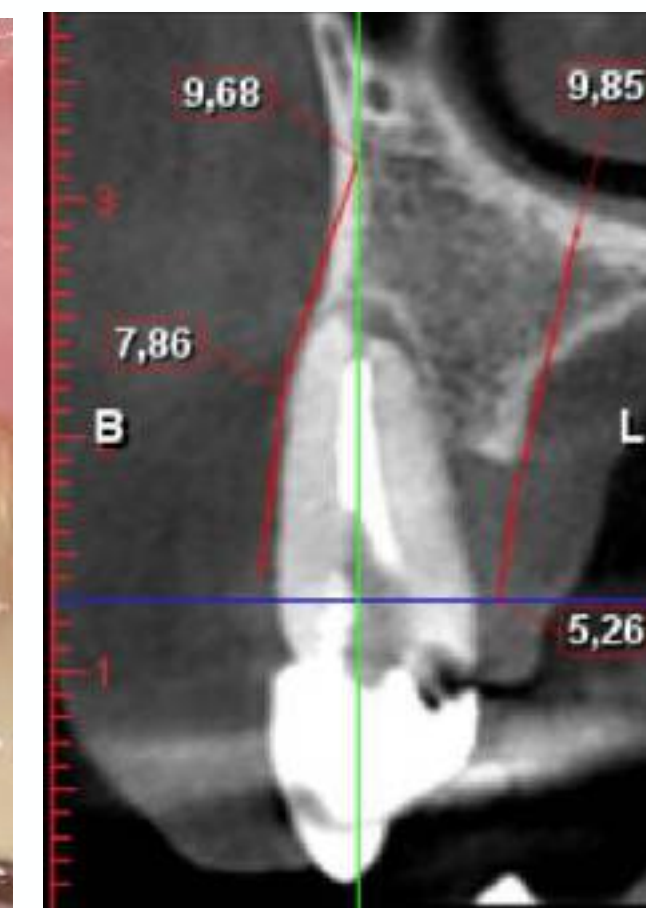
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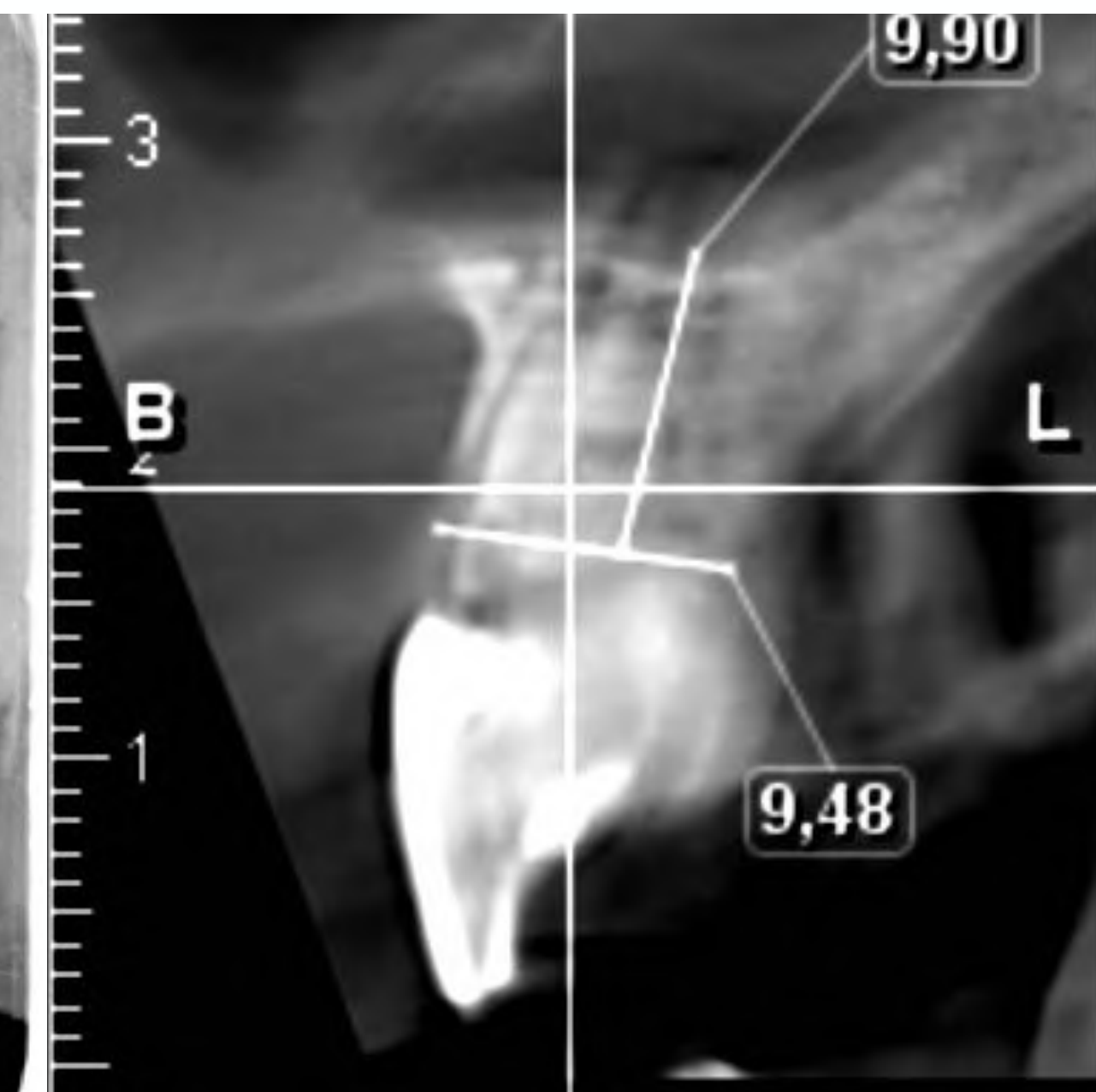
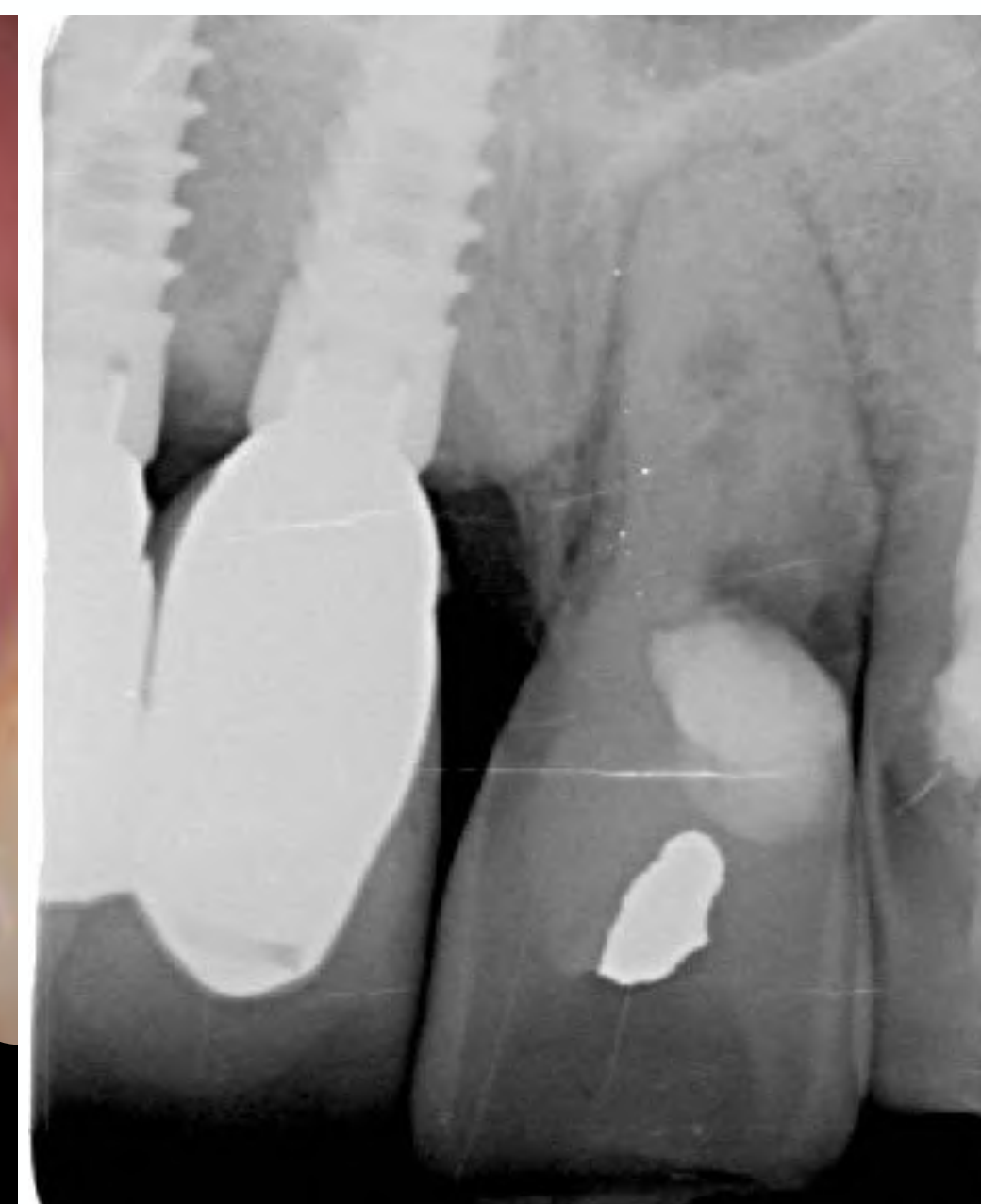


Contexte ostéo-muqueux défavorable

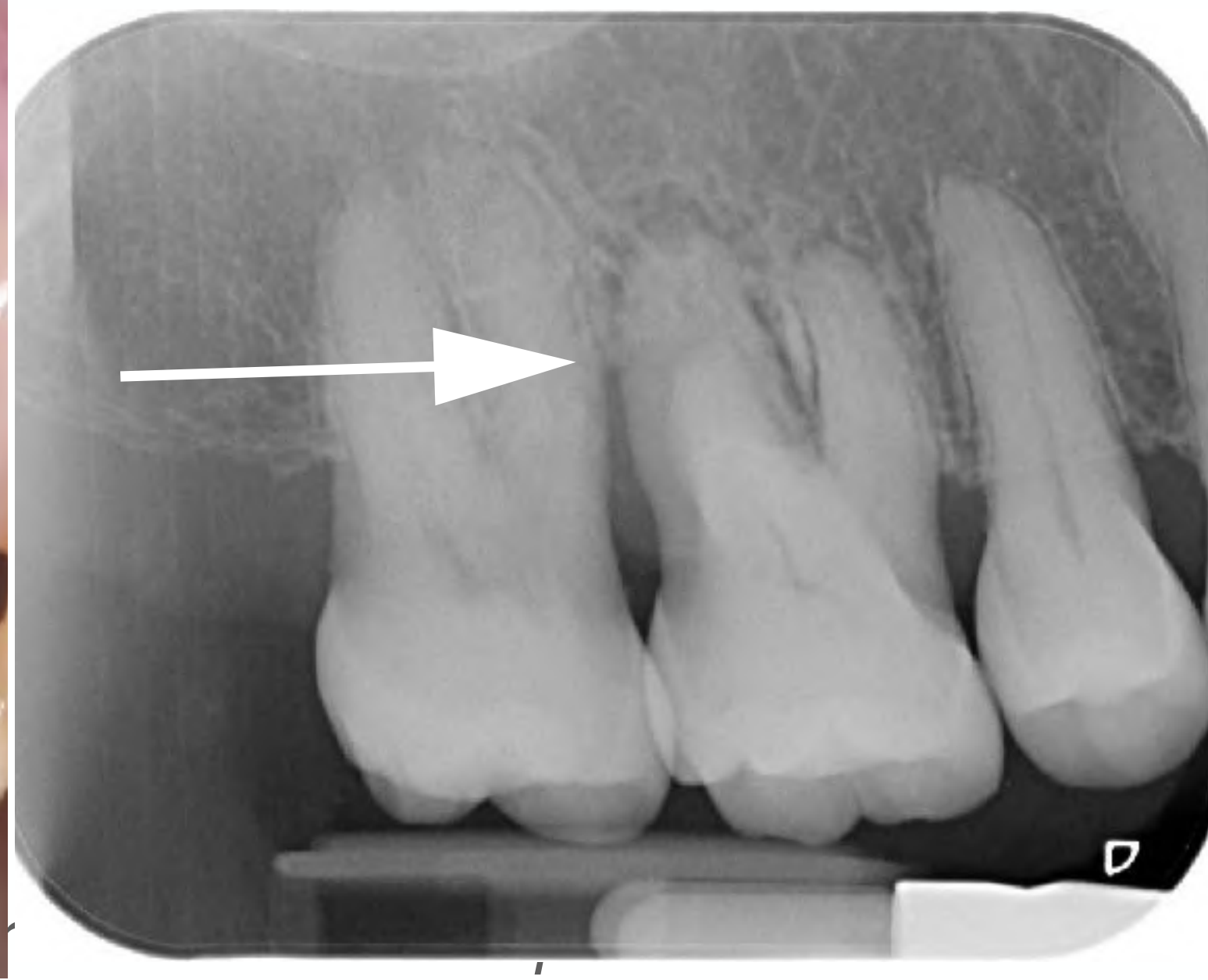
Composante esthétique

Dr Pierre Cher



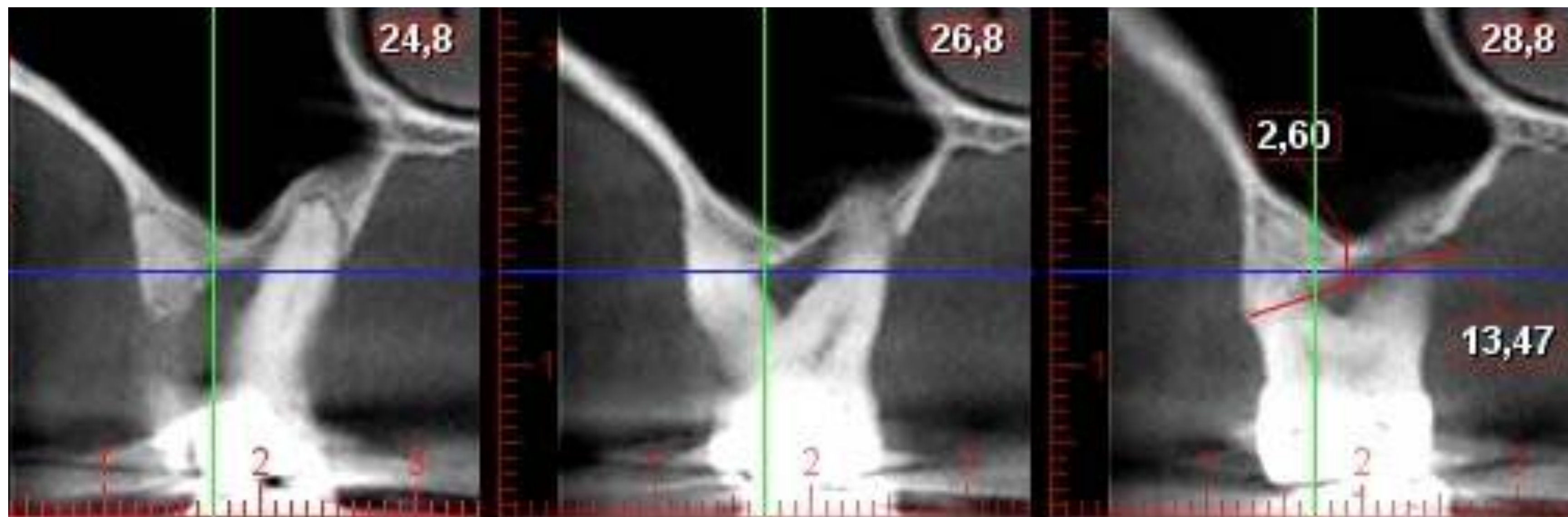


Contexte Parodontal





L'anatomie...





Environnement

Parodonte
assaini et
stabilisé

Approche rationnelle

Diagnostic
- défauts osseux
- Tissus mous

Choix de la
Chronologie
EID/ EII/EITI

Technique

Atraumatique

Minimalement invasive

Microchirurgie

Choix de
la TPA

Substitut osseux
Membrane
EMD

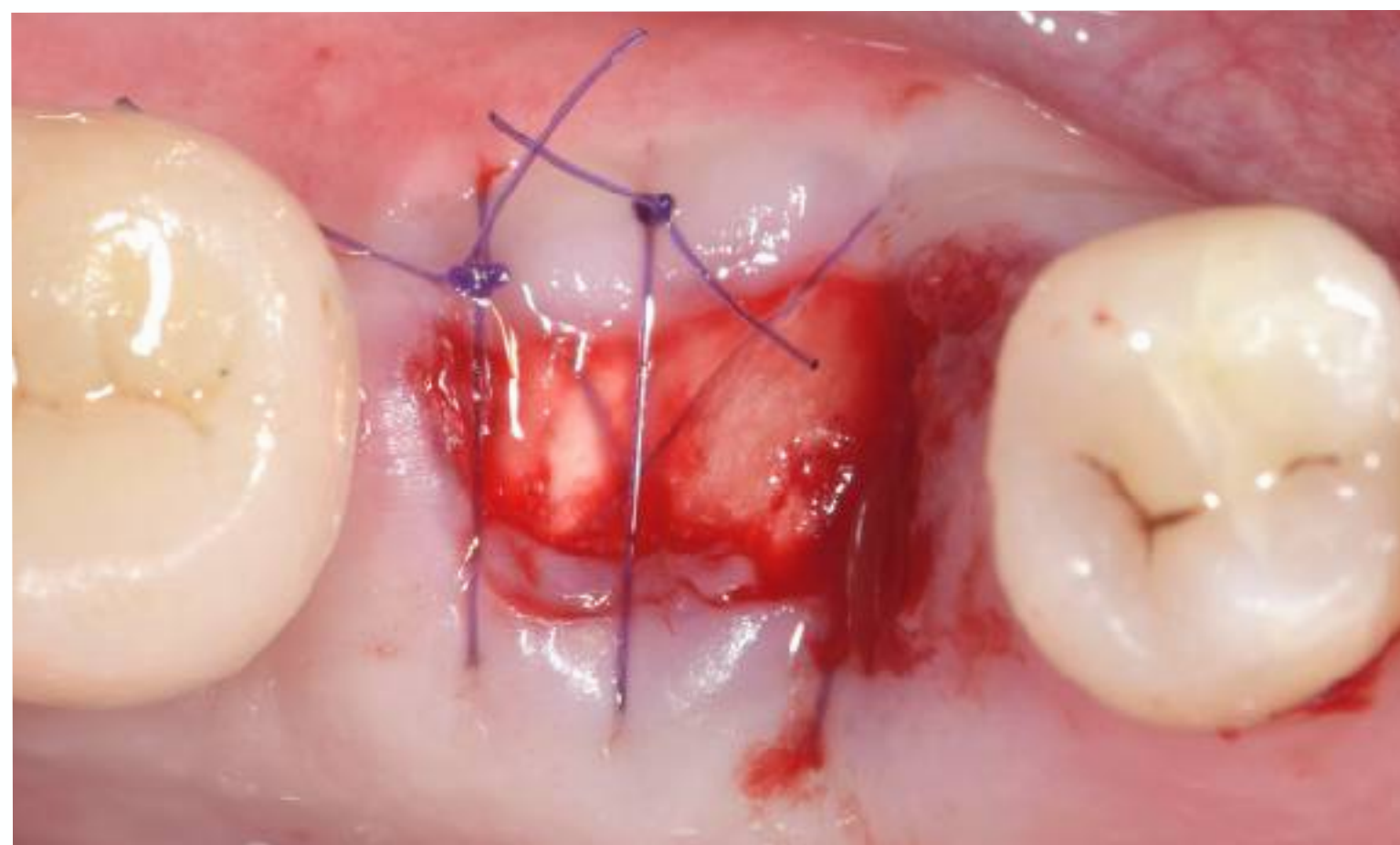
Choix des
composants

Implant
Pilier
Prothèse

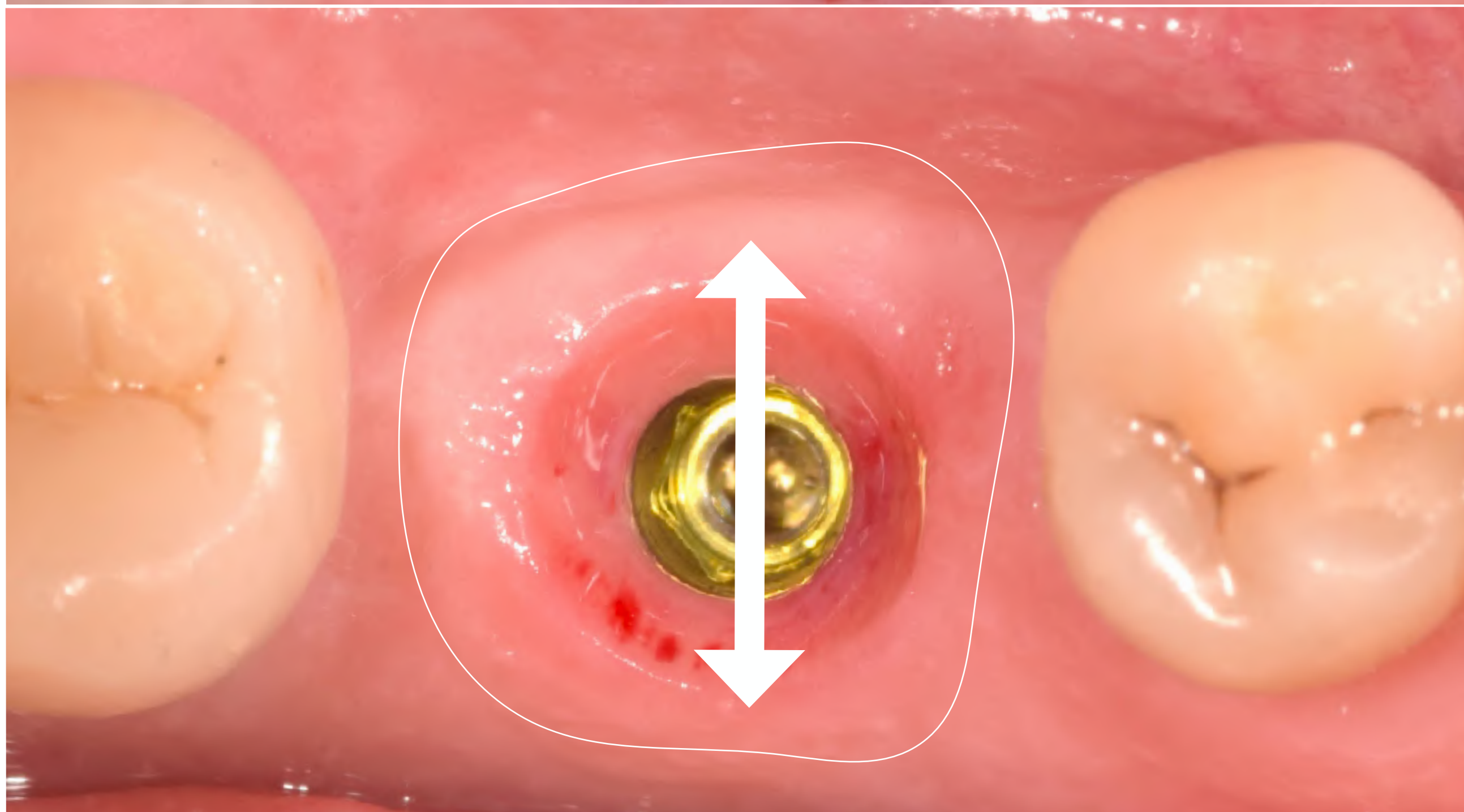
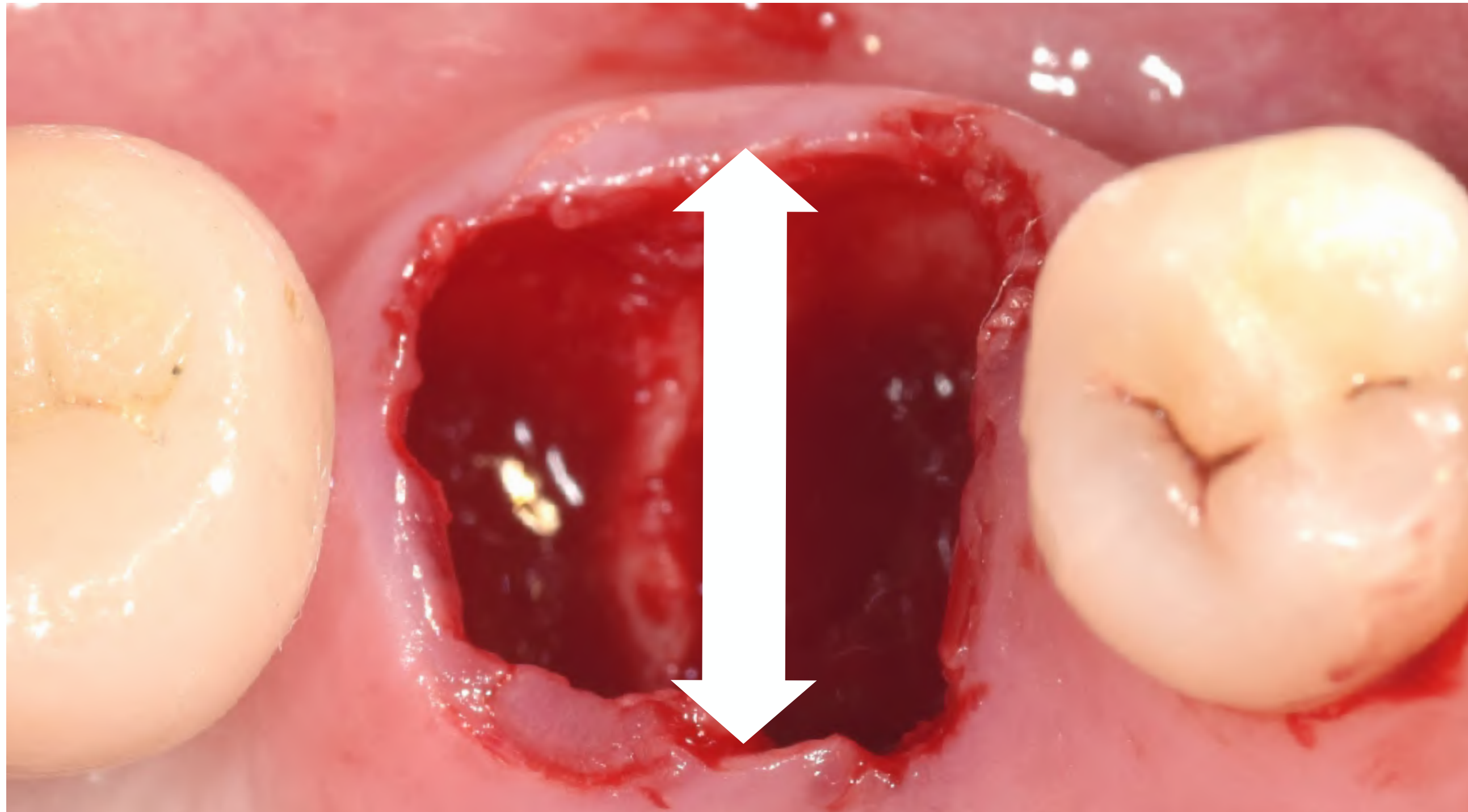
Long terme

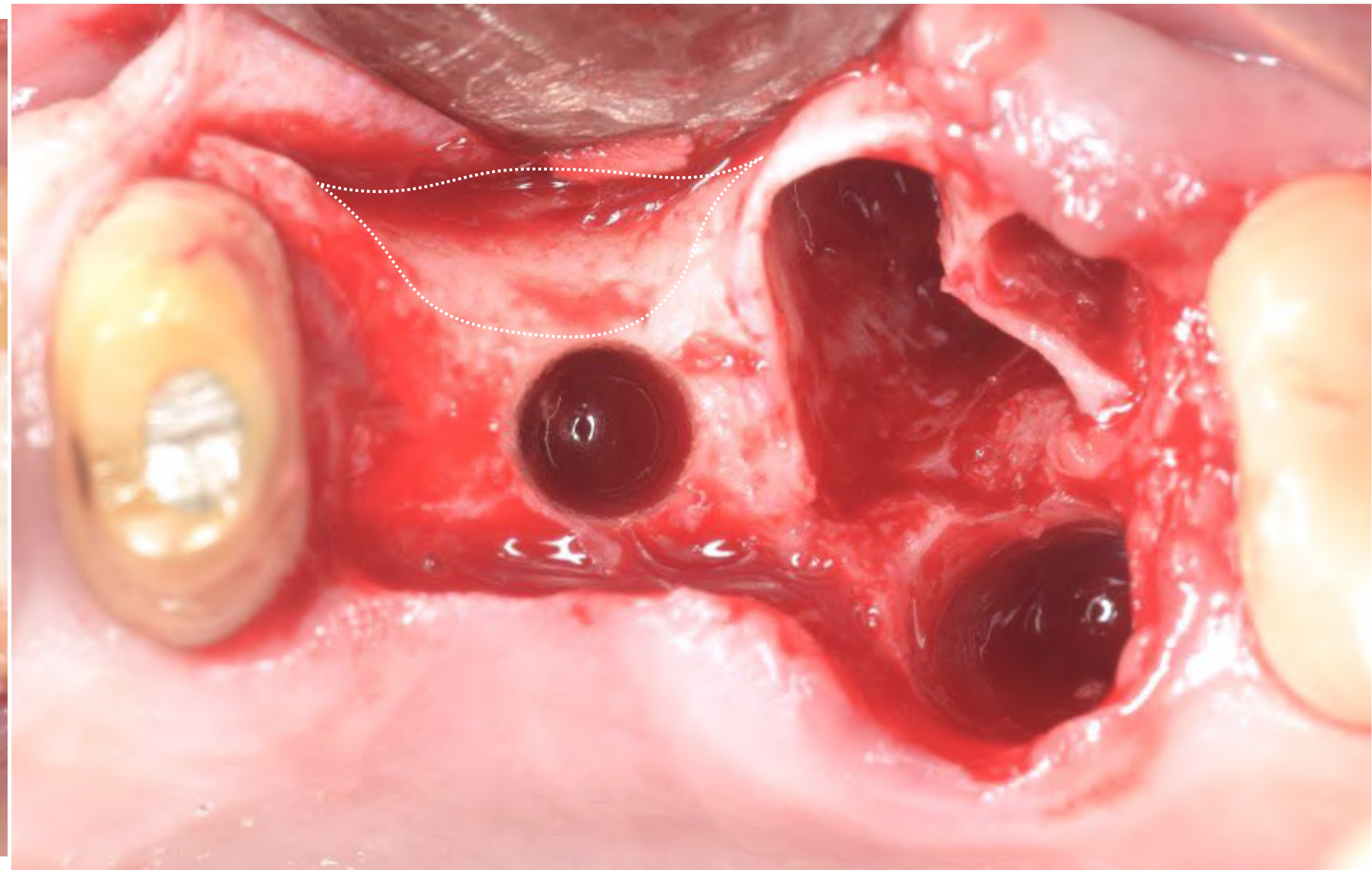
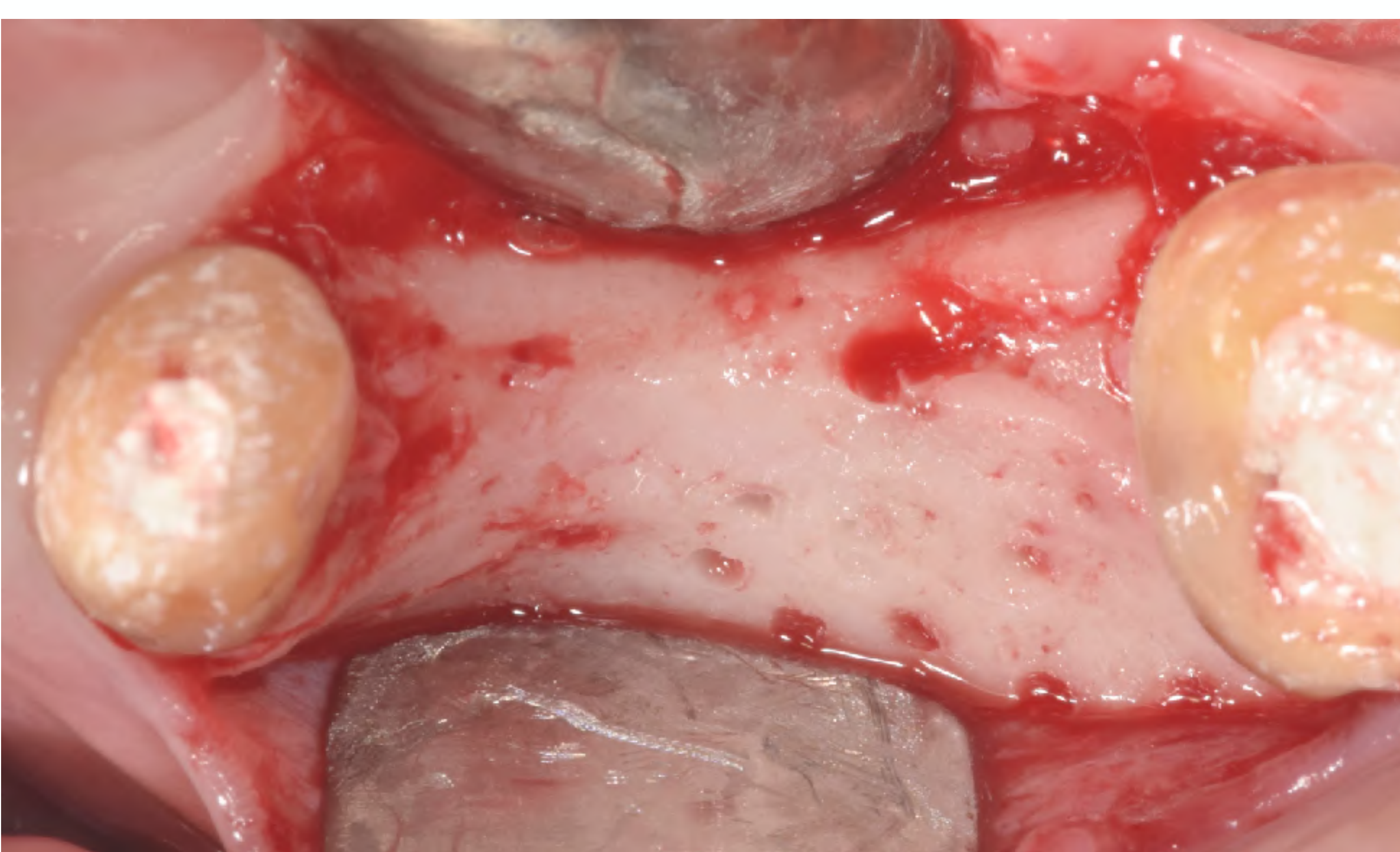
TPS

Suivi



Hémocollagène







GUIDE
CLINIQUE

Pierre Cherfane

GUIDE
CLINIQUE

Pierre Cherfane

Gestion de l'alvéole en implantologie

Approche conservatrice
et régénératrice

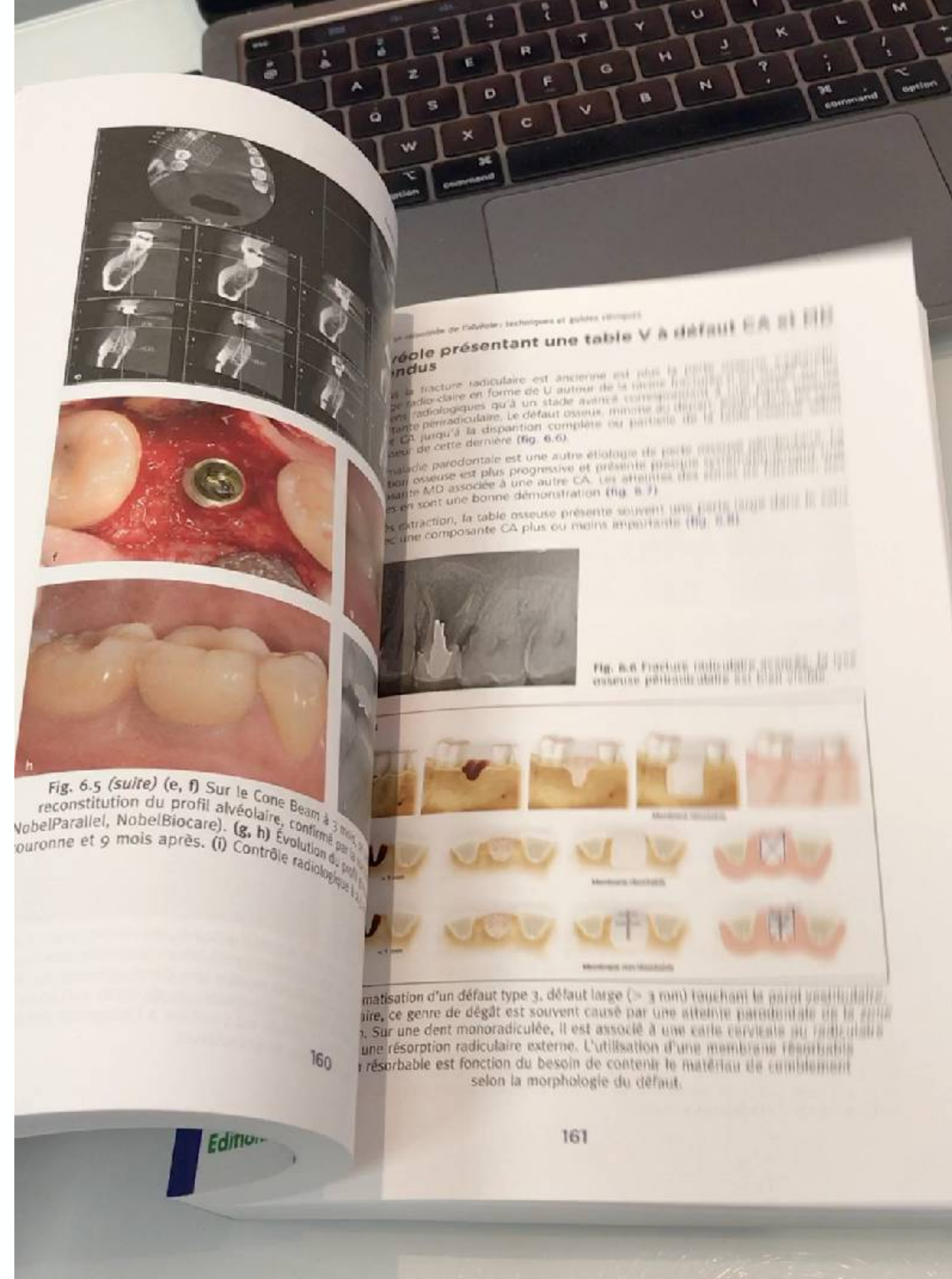


Gestion l'alvéole en implantologie

CdP

Editions CdP

Dr Pierre Cherfane





F a c t e u r s





Physiologique

Résorption face externe

Action

Peut être

Résorption os fasciculaire

Non

Anatomique

Épaisseur de la table externe

Non

Mécanique/iatrogène

Traumatisme de l'extraction

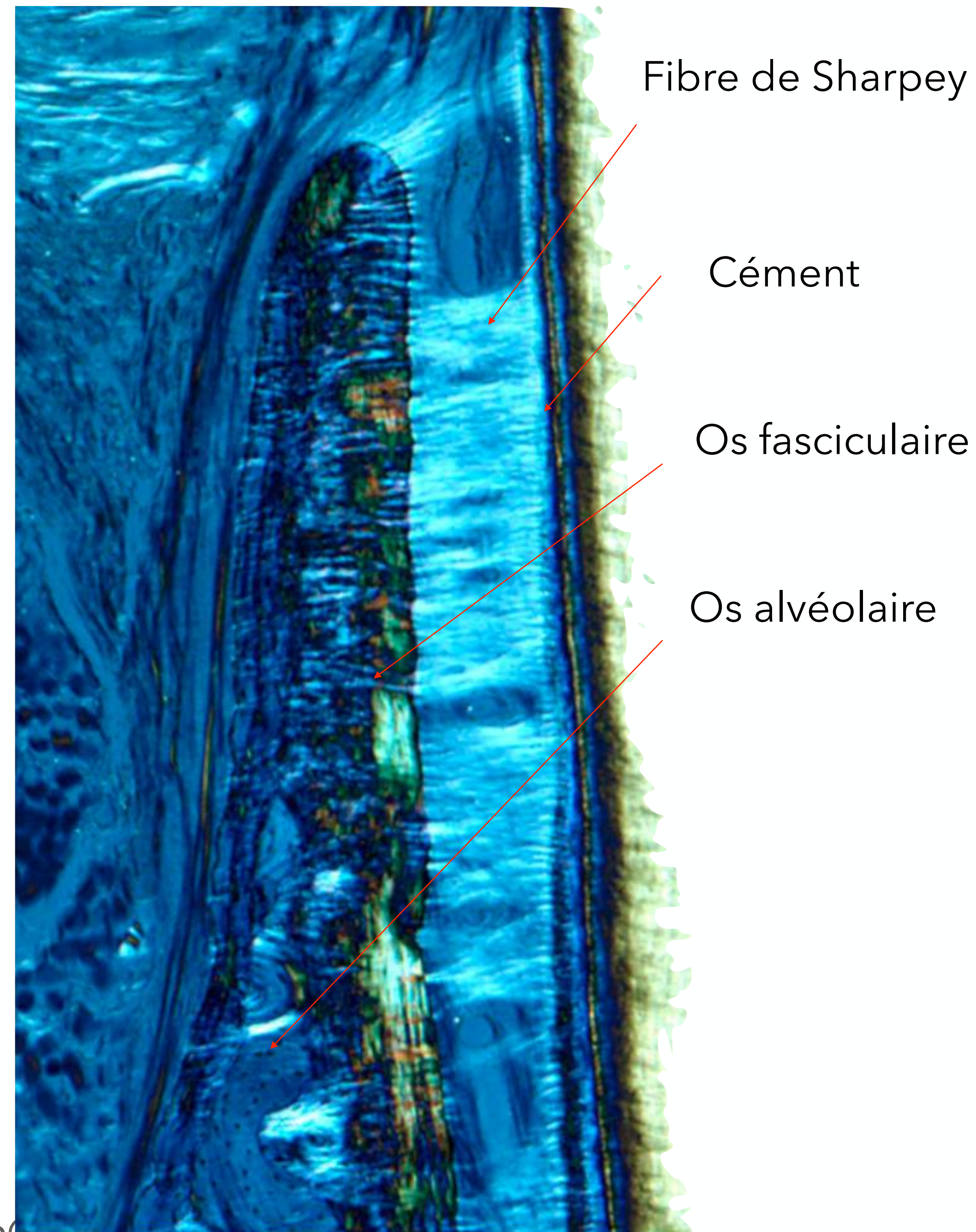
Oui



Physiologique-anatomique



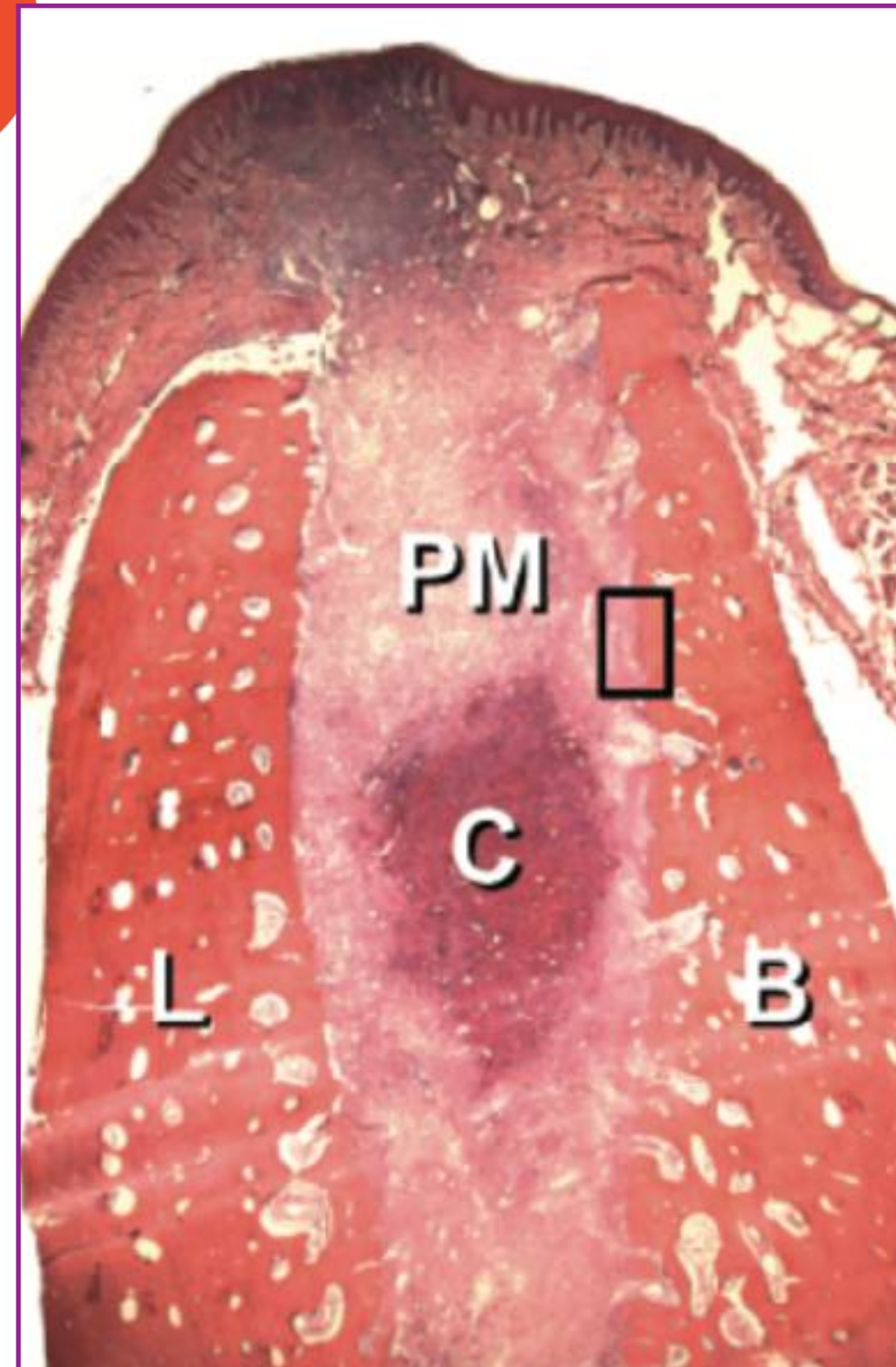
Os fasciculaire 0,2 à 0,4 mm



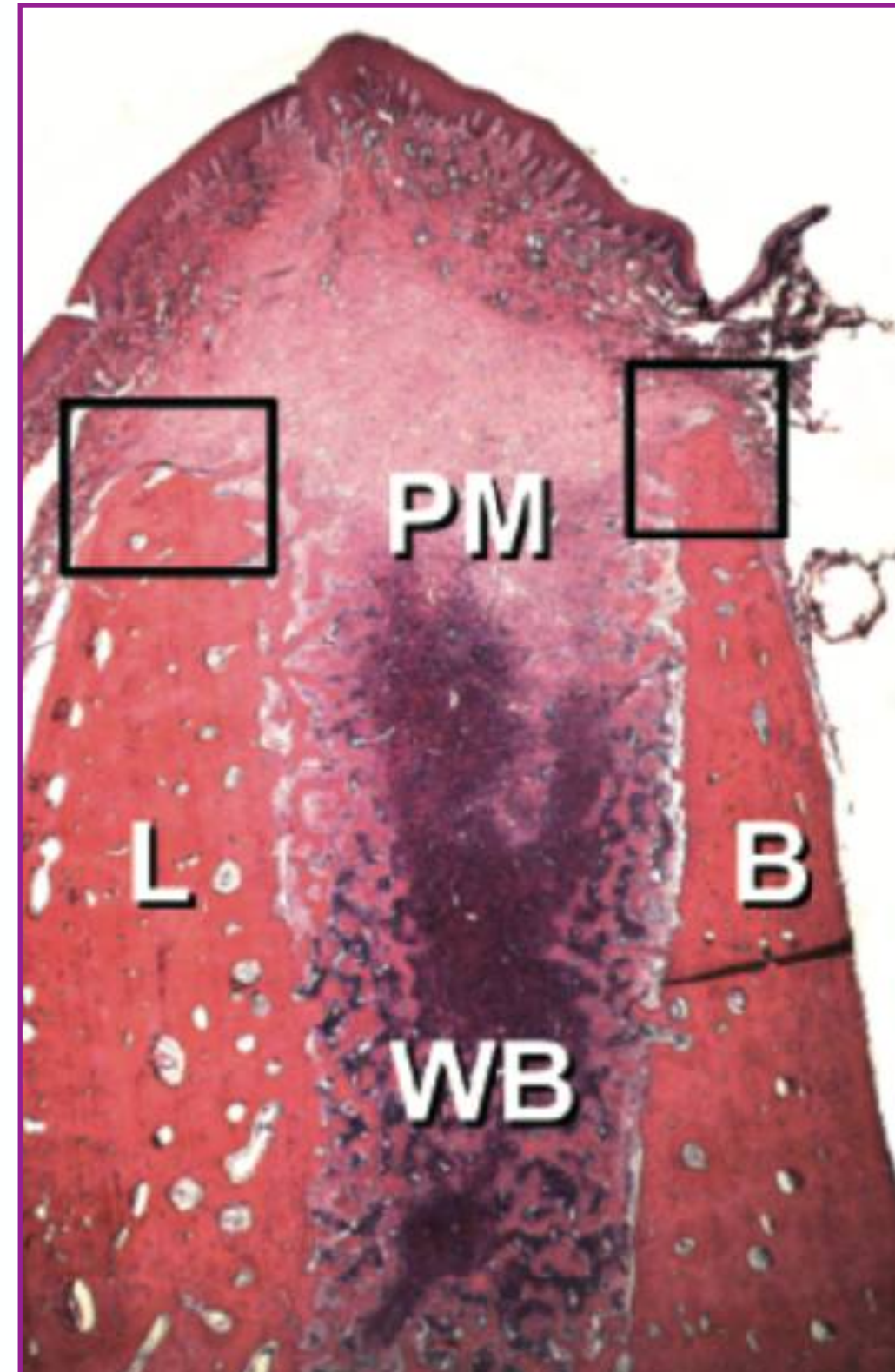
Araujo et al. Periodontology 2000, Vol. 68, 2015, 122–134

Schroeder HE. The periodontium. Berlin Heidelberg: Springer-Verlag, 1986

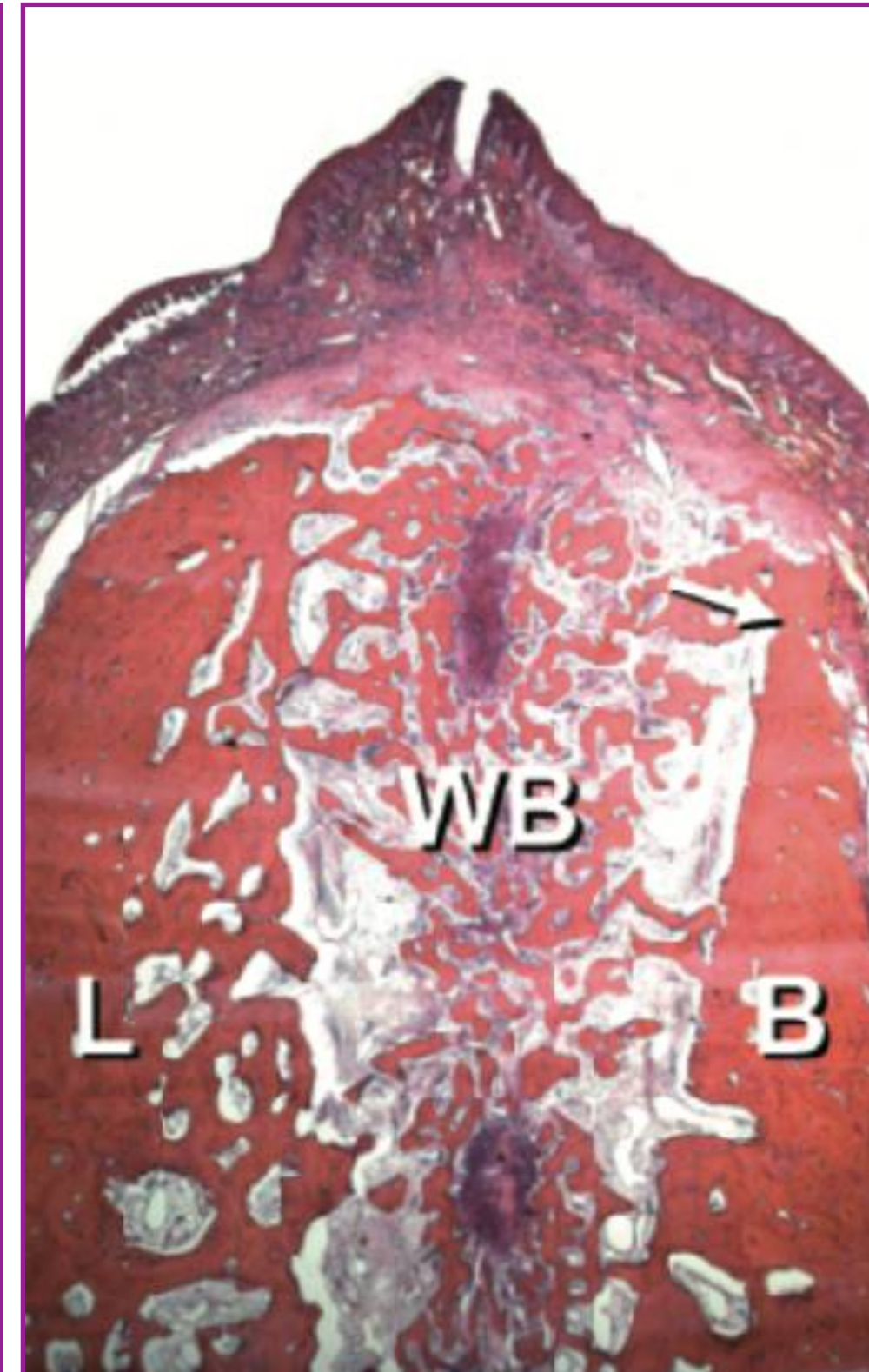
Dr Pierre Chennane pierre@dr-chennane.com



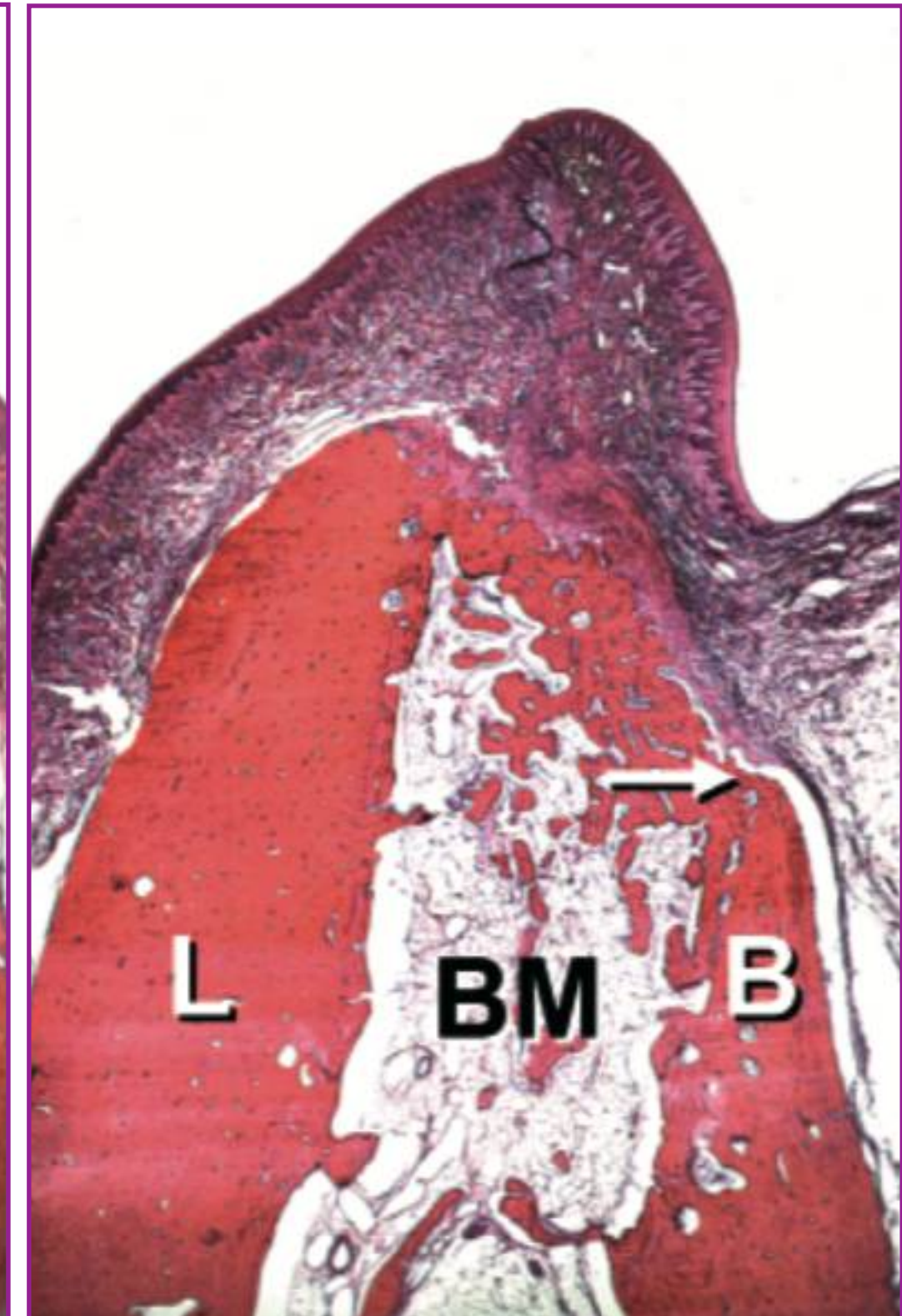
1 semaine



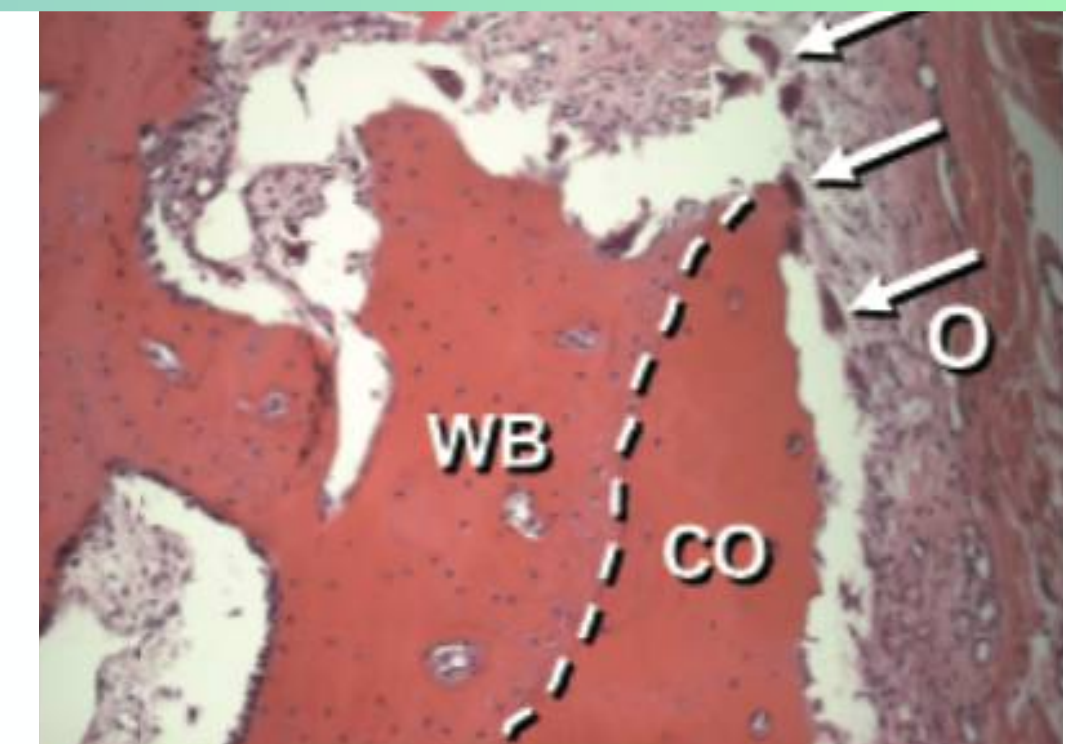
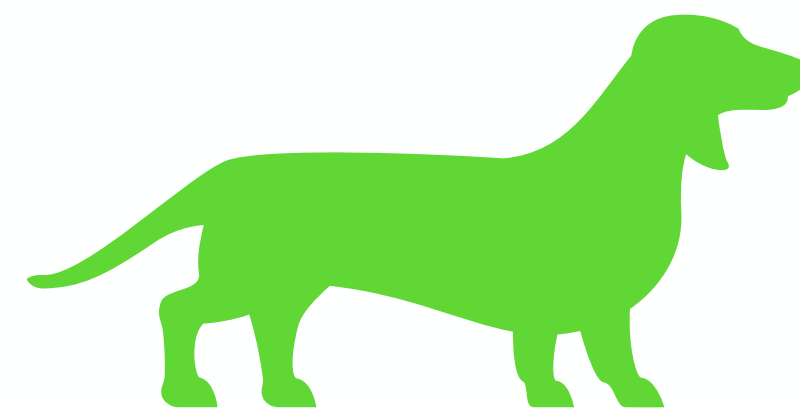
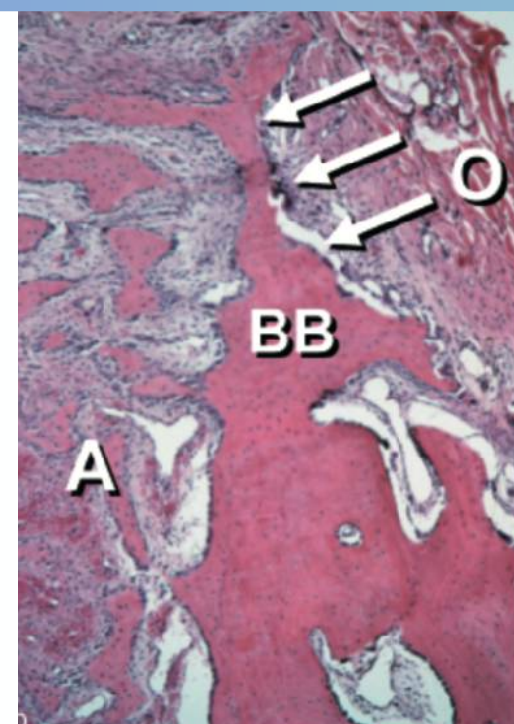
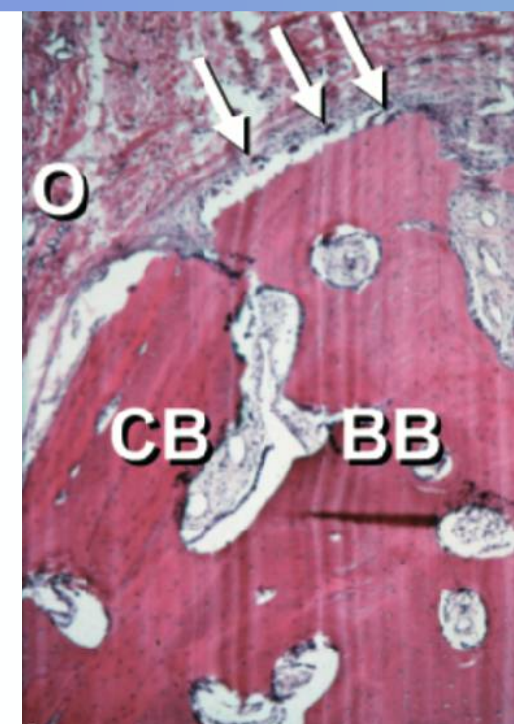
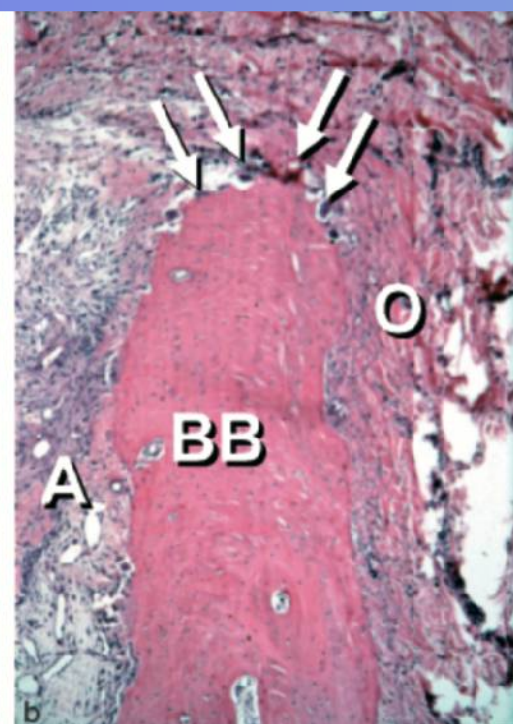
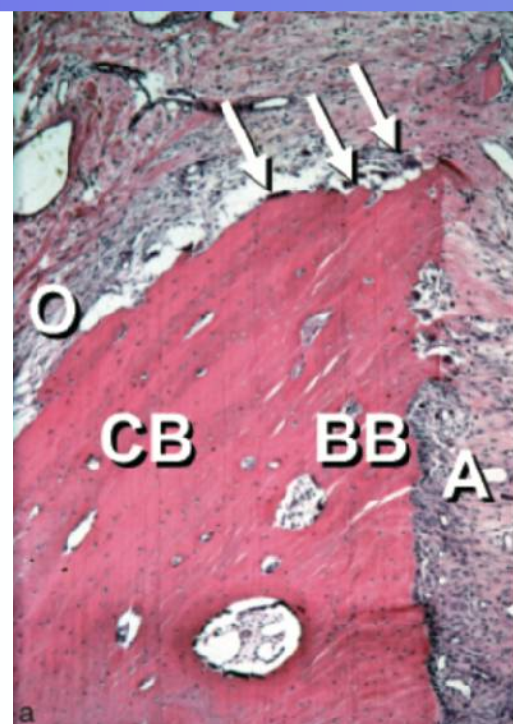
2 semaines



4 semaines



8 semaines

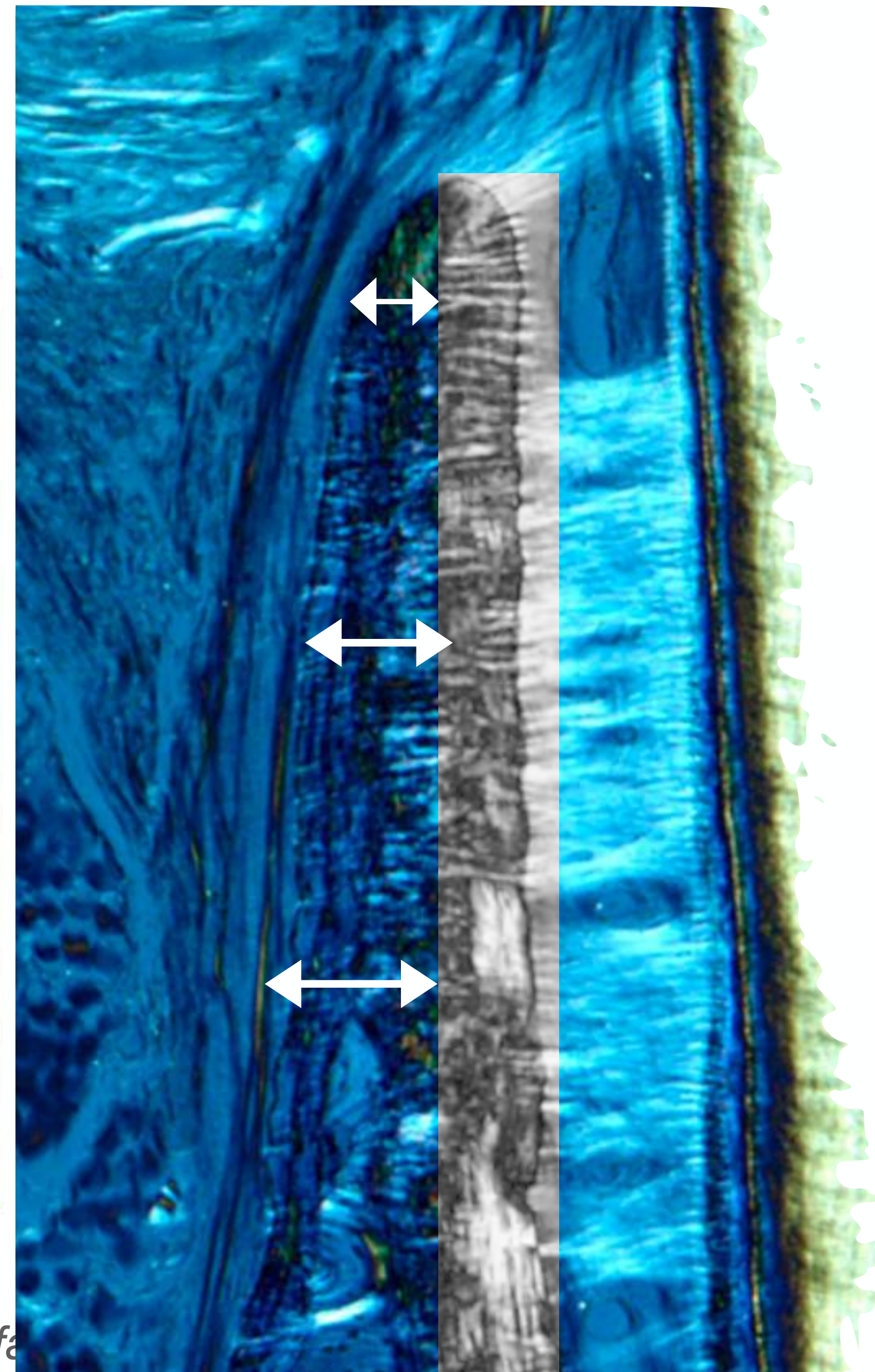


Araujo MG, Lindhe J: Dimensional ridge alterations following tooth extraction. An experimental study in the dog. J Clin Periodontol 2005; 32: 212–218.



Physiologique-anatomique

Os fasciculaire 0,2 à 0,4 mm



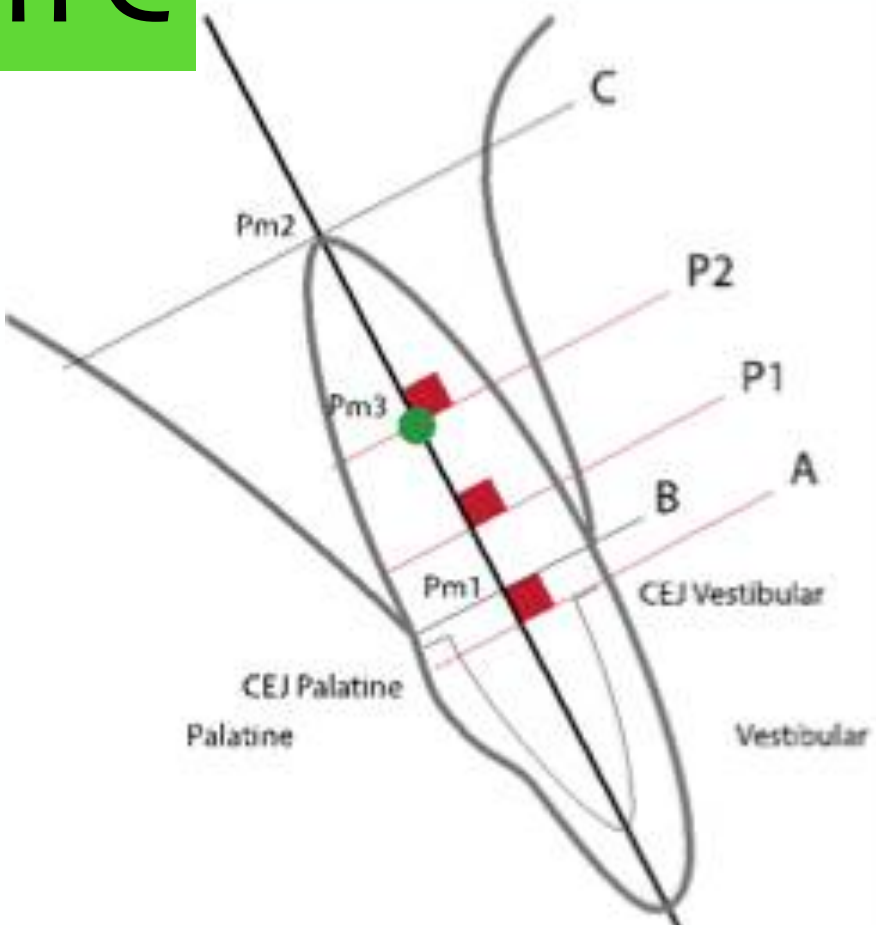


Corticale vestibulaire

Table 6. Variable characterisation according to the type of tooth

Tooth	Bone thickness P1	Bone thickness P2
	Mean (SD)	Mean (SD)
Central incisor	0.6 (0.4)	0.8 (0.3)
Lateral incisor	0.6 (0.5)	0.8 (0.4)
Canine	0.5 (0.5)	0.8 (0.4)
First premolar	0.4 (0.5)	0.9 (0.4)
Second premolar	0.8 (0.7)	1.1 (0.5)
First molar	0.6 (0.6)	0.9 (0.6)
Second molar	1.1 (0.9)	1.7 (0.8)
Kruskal-Wallis test	ET = 105.061; P = 0.000	ET = 233.667; P = 0.000

FCD = facial crestal distance; SD = standard deviation.



À 4 mm de la JEC, **< 0.6 mm dans 50% des dents**

Dos Santos, J. G. Et al. 2019. Journal of Oral & Maxillofacial Research.

Rarement épaisseur supérieure à 0.5 mm

V.S. Todorovic et al. ImPlant Dent. Relat. Res. 2023

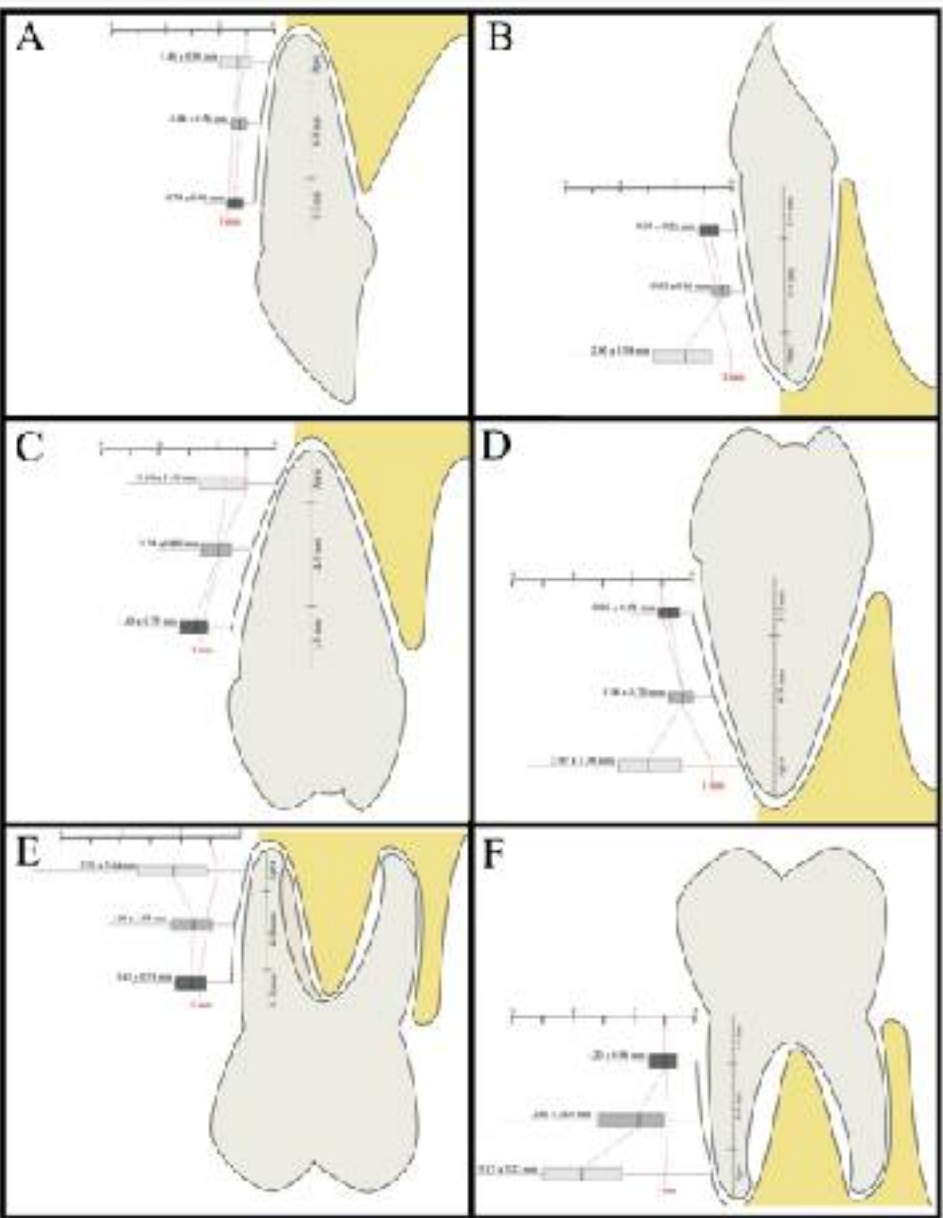


Figure 3. Buccal bone thickness at different regions. This figure shows (1) the measurement region as height between the tooth apex and the alveolar crest and (2) the average bone thickness as measurements taken between the respective teeth and the outer surface of the buccal bone at different regions of the radix. (A) Buccal bone thickness in maxillary central incisor. (B) Buccal bone thickness in maxillary lateral incisor. (C) Buccal bone thickness in maxillary canine. (D) Buccal bone thickness in maxillary first premolar. (E) Buccal bone thickness in maxillary second premolar. (F) Buccal bone thickness in maxillary first molar.

Méta-analyse, 45 études

Maxillaire

0.76 ± 0.49 mm antérieure,
1.40 ± 0.75 mm prémolaire
1.42 ± 0.74 mm molaire,

Mandibule

0.95 ± 0.58 mm antérieure
0.86 ± 0.51 mm prémolaire
1.20 ± 0.96 mm molaire

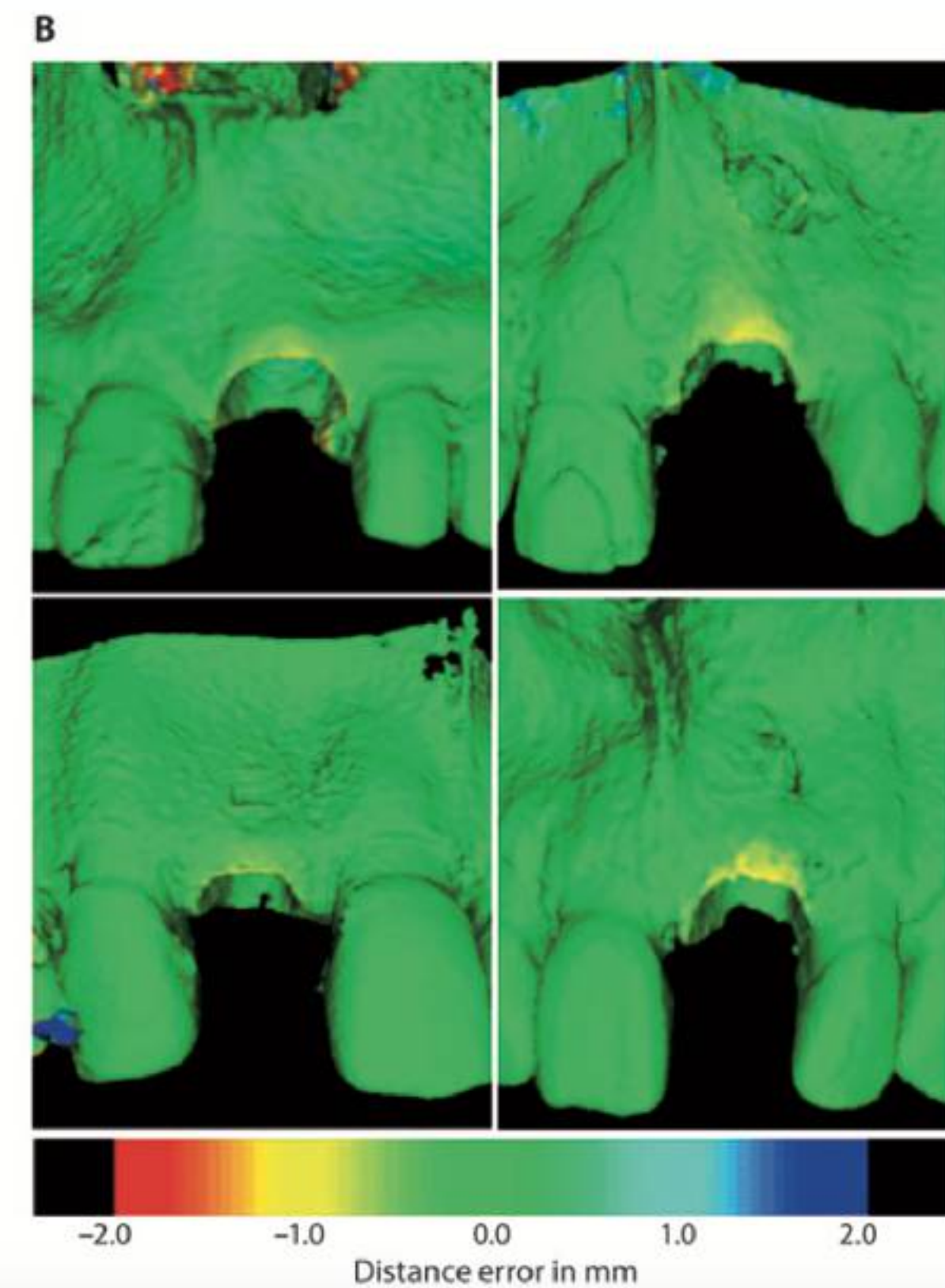
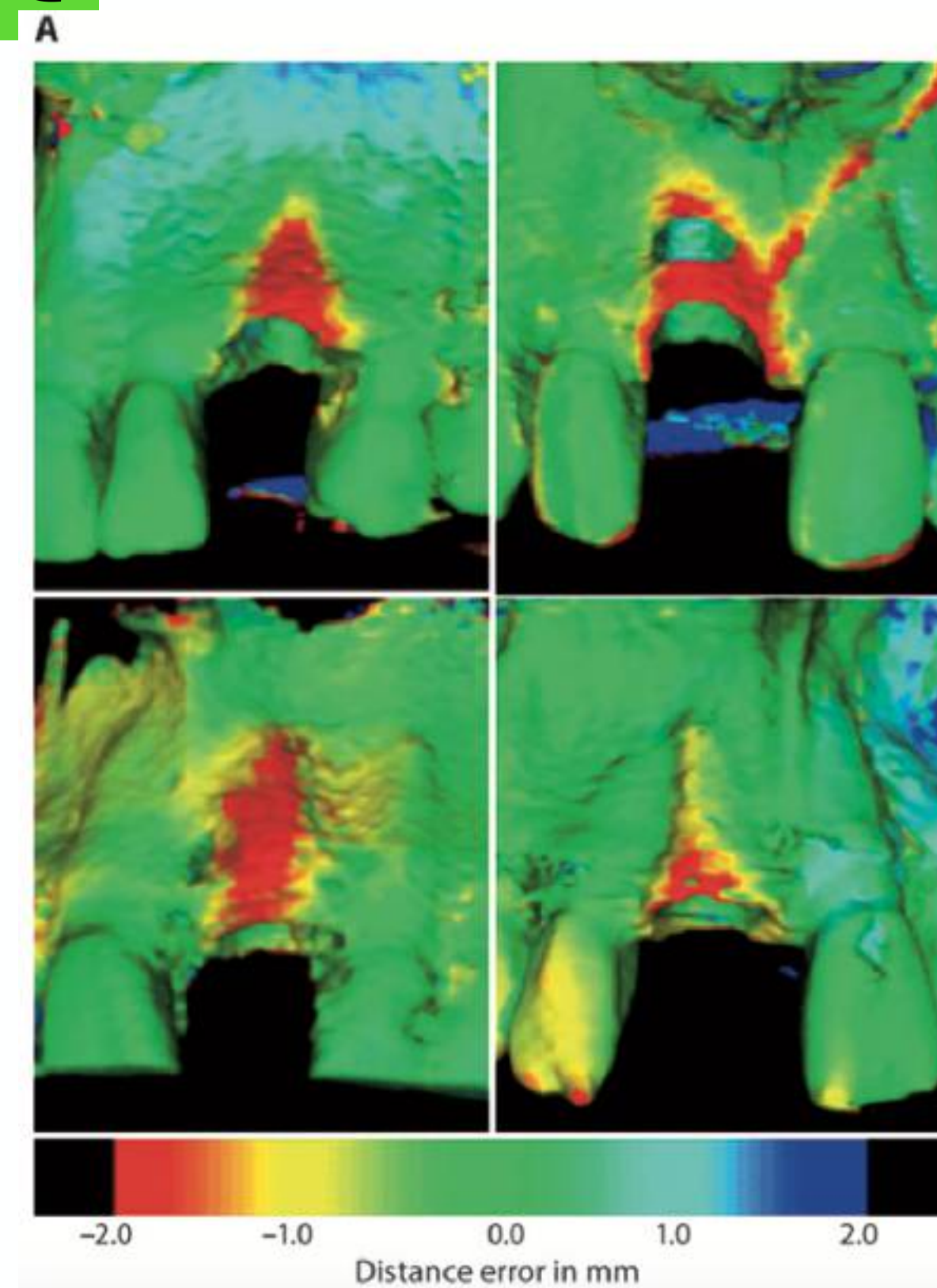
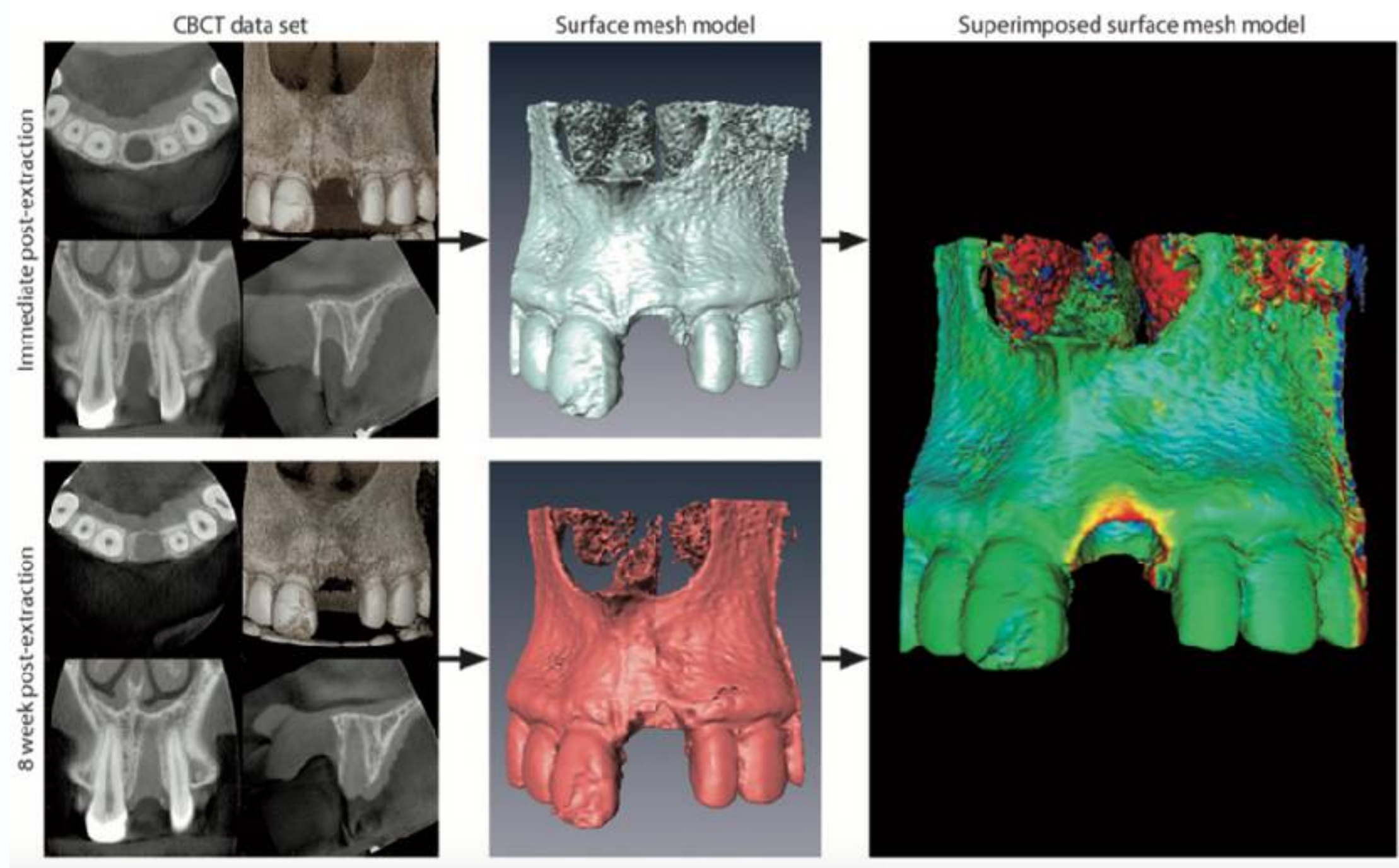
D. Heimes et al. Healthc.2021

Dr Pierre Cherfane

pierre@dr-cherfane.com



Résorption post-extractionnelle



Epaisseur paroi V :

< 1 mm, moyenne 0,7

> ou = 1 mm, moyenne 1,4 mm

Phénotype osseux fin

V reduction 62.3% (8-99.6%)

H reduction 10.5% (0-49.5%)

Phénotype osseux épais

V reduction 9.1% (5.5-38.6%)

H reduction 0% (0-21.2%)



L'apport des TPA ?





Resorption osseuse en mm

Cicatrisation non assistée		TPAs		Différence entre TPAs et TPAs – CNA = -3mm – (-5mm) = 2 mm moins de résorption avec TPAs		
	V	H	V	H	V	H
Van der Weijden et al. 2009	-1,67 V -2,03 L	-3,87				
Tan et al 2012	-1,24	-3,79				
Ten Heggeler et al. 2011	-0,4 à -3,9	-2,6 à -4,56	-0,38 à -0,7	-1,2 à -2,58		
Vignoletti et al. 2012	-0,8 à -3,75	-4,56 à -0,16	-0,7 à +1,3	-1,1 à + 3,27	1,47	1,83
Vittorini Orgeas et al. 2013			-0,58	-0,7		
Horvath et al. 2013	-0,8 à -3,6	-2,5 à -4,6	+1,3 à -0,7	-1,1 à -3,5		
Morjaria et al. 2014	-0,9 à -3,6	-2,46 à -4,56	-0,62 à +1,3	- 1,1 à 2,5		
Avila Ortiz et al. 2014					2,07 (1.03-3.12) (en L : 1,18)	1,89 (1,41 à 2,36)
MacBeth et al. 2017					0,739 (0,47 ROG, 0,16 comblement osseux)	1,198 (1,45 ROG, 1,6 comblement osseux)
Avila Ortiz et al. 2019					Vestibulaire 1,72 (lingual 1,16)	1,99



Etat initial du niveau osseux n'est pas cité dans certaines études

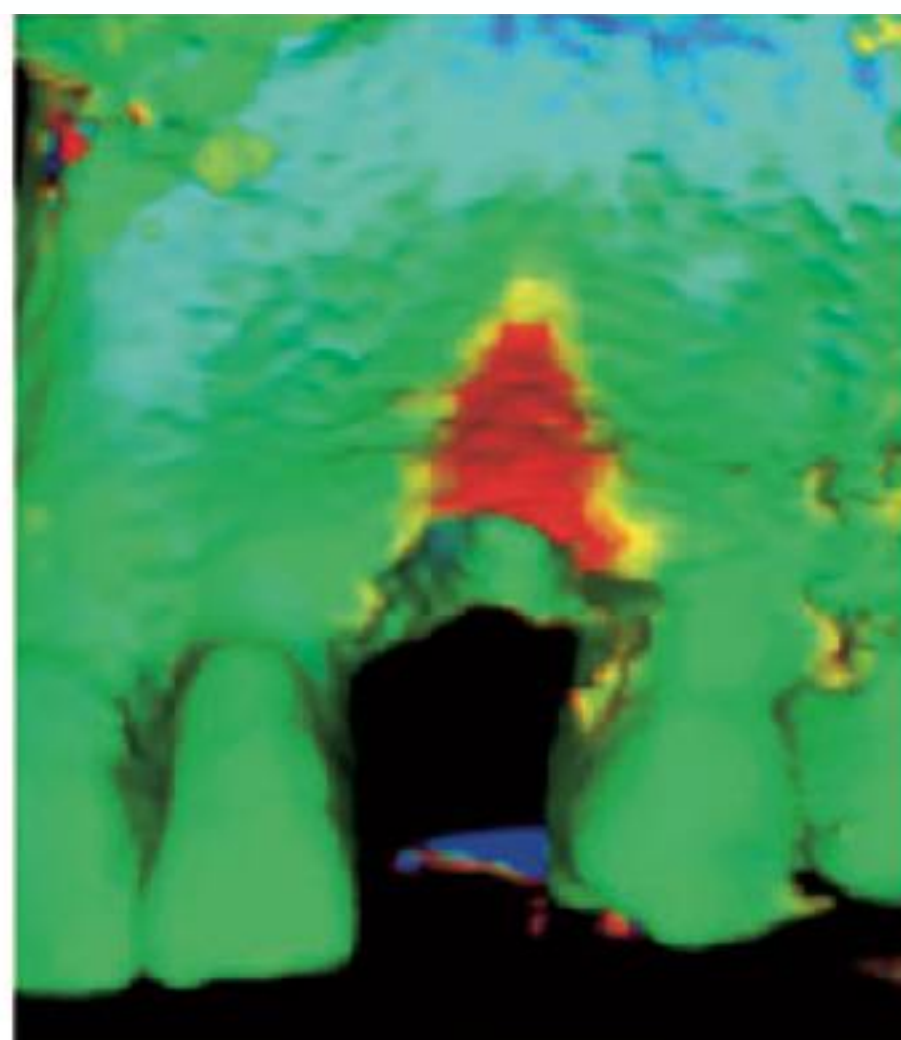
Et dans d'autres, les sites avec résorption $V > 30\%$ sont exclues

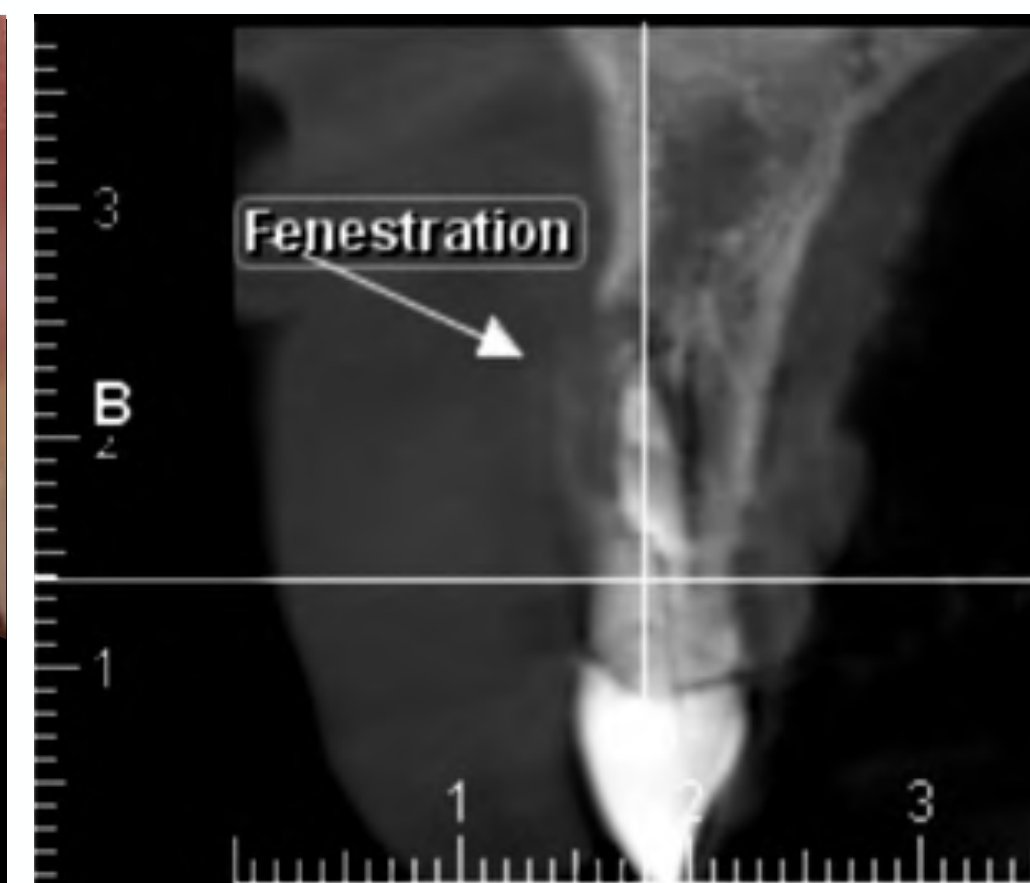
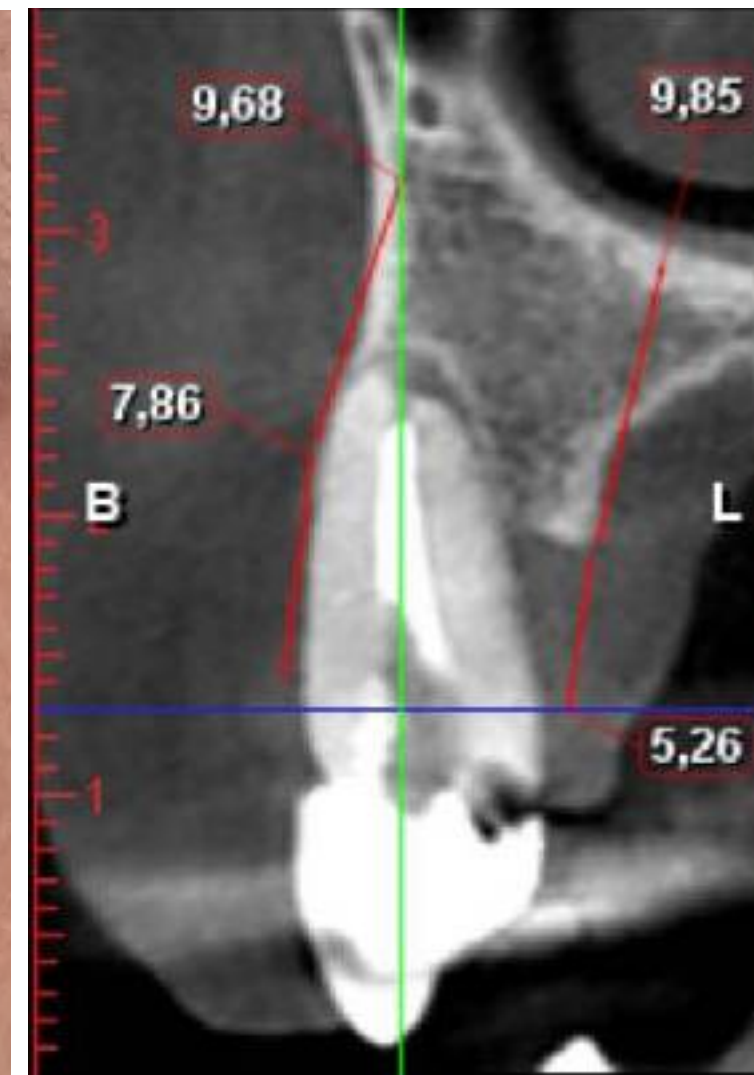
Conclusions

Epaisseur de la corticale V

V 11 à 22 %
H 29 à 63 % à 6 mois

TPA -50% résorption





Dr Pierre Cherfane



Classification

1. Site / Esthétique
2. Epaisseur de la paroi V
3. Morphologie du défaut



↔
narrow < 3 mm < wide

Classification

↑
superficiel < 1/3 < deep

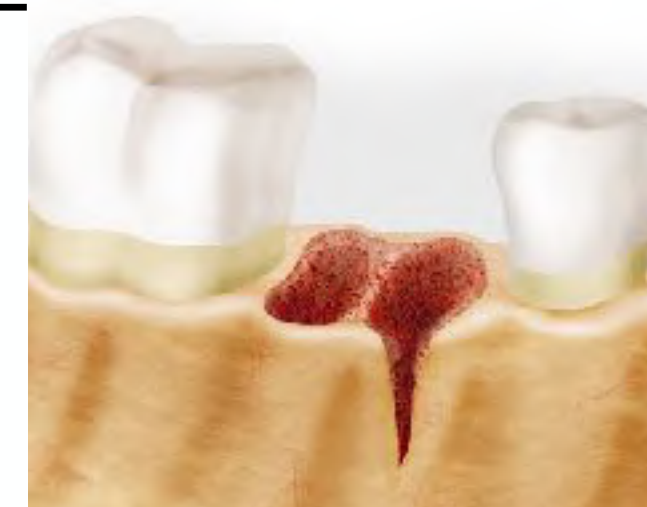
Défaut 0



Défaut 1



Défaut 2



EITI

EITI

EITI

< 1 mm

< 1 mm

< 1 mm

< 1 mm

EII / SSA

EII / SSA

EII / SSA

Dr Pierre Cherfane

pierre@dr-cherfane.com

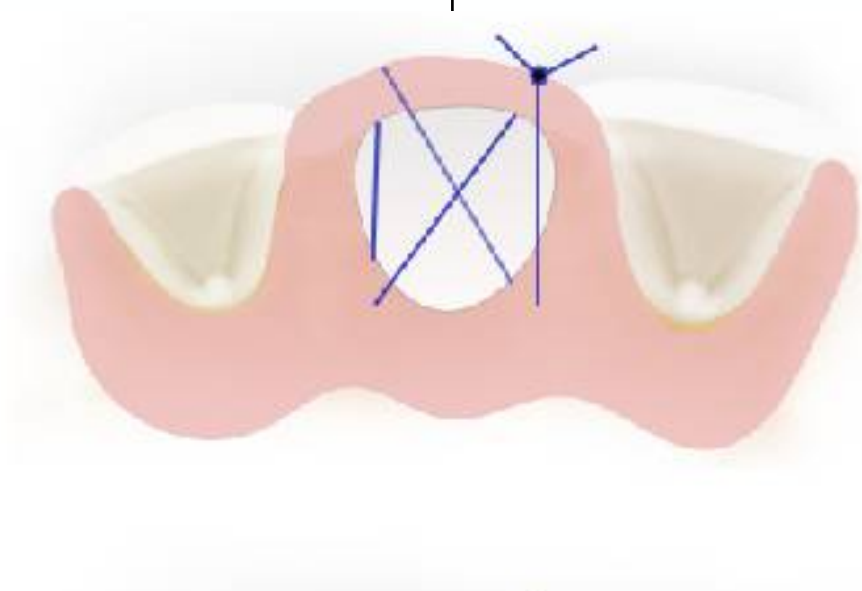


↔
narrow < 3 mm < wide

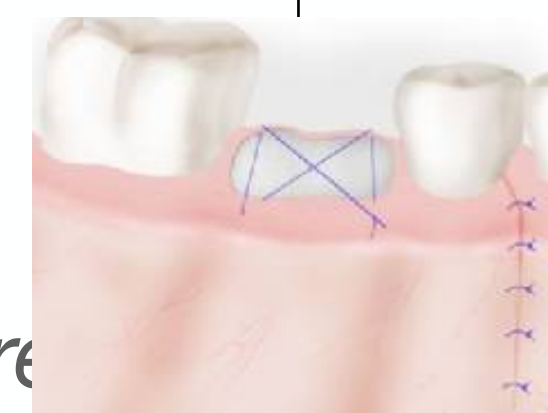
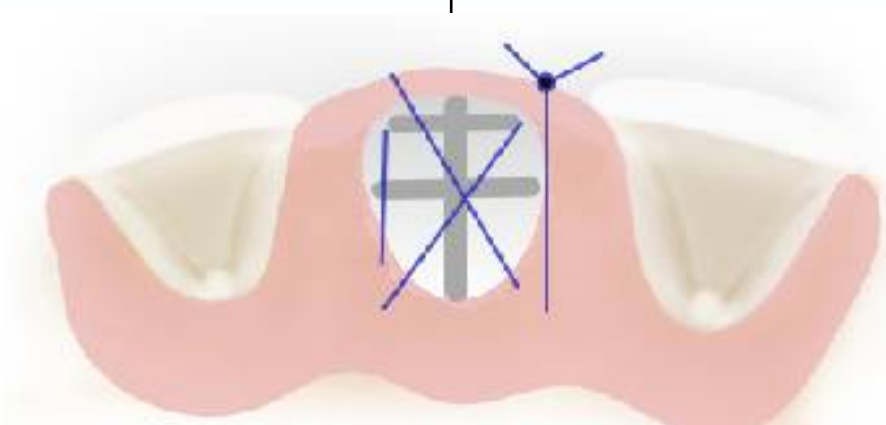
Classification

↑
superficiel < 1/3 < deep

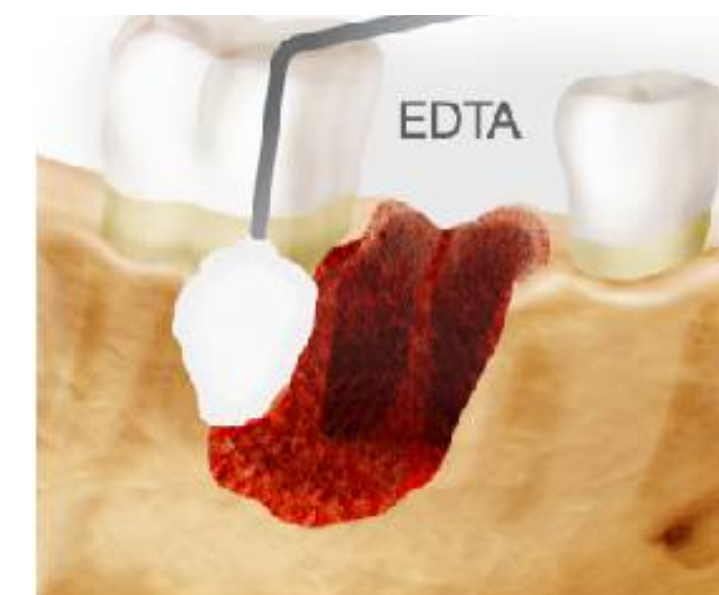
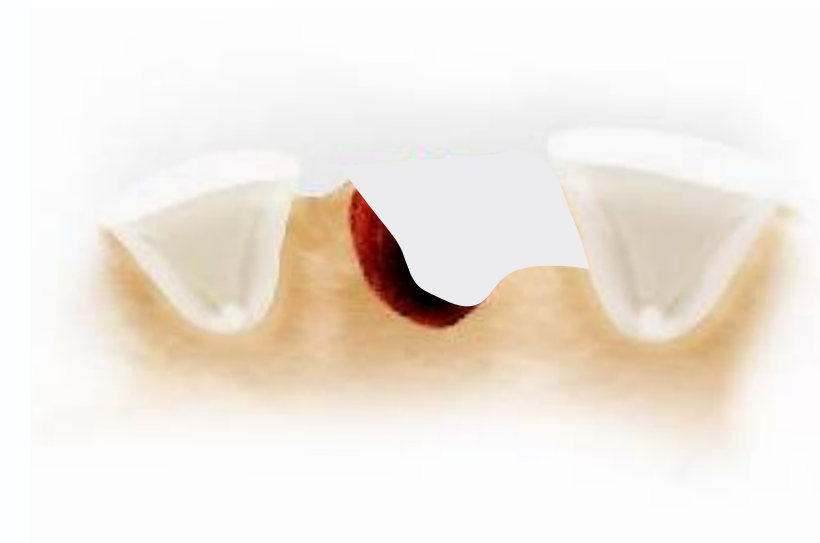
Défaut 3



Défaut 4



Défaut 5



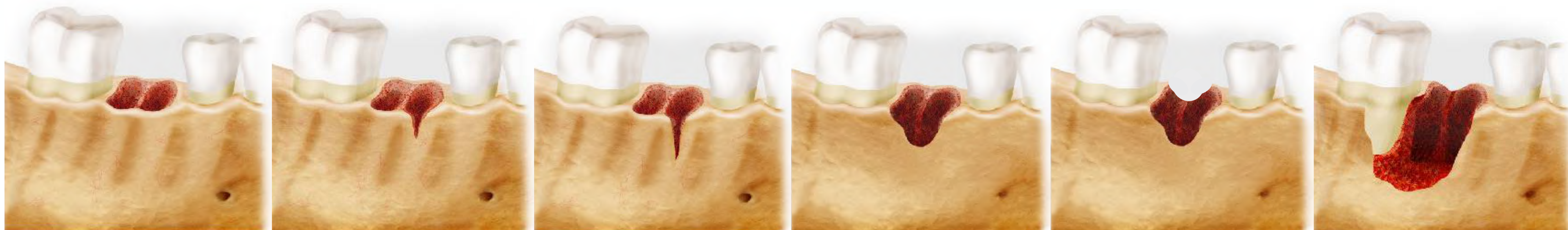
EID



~~Préservation~~



Régénération

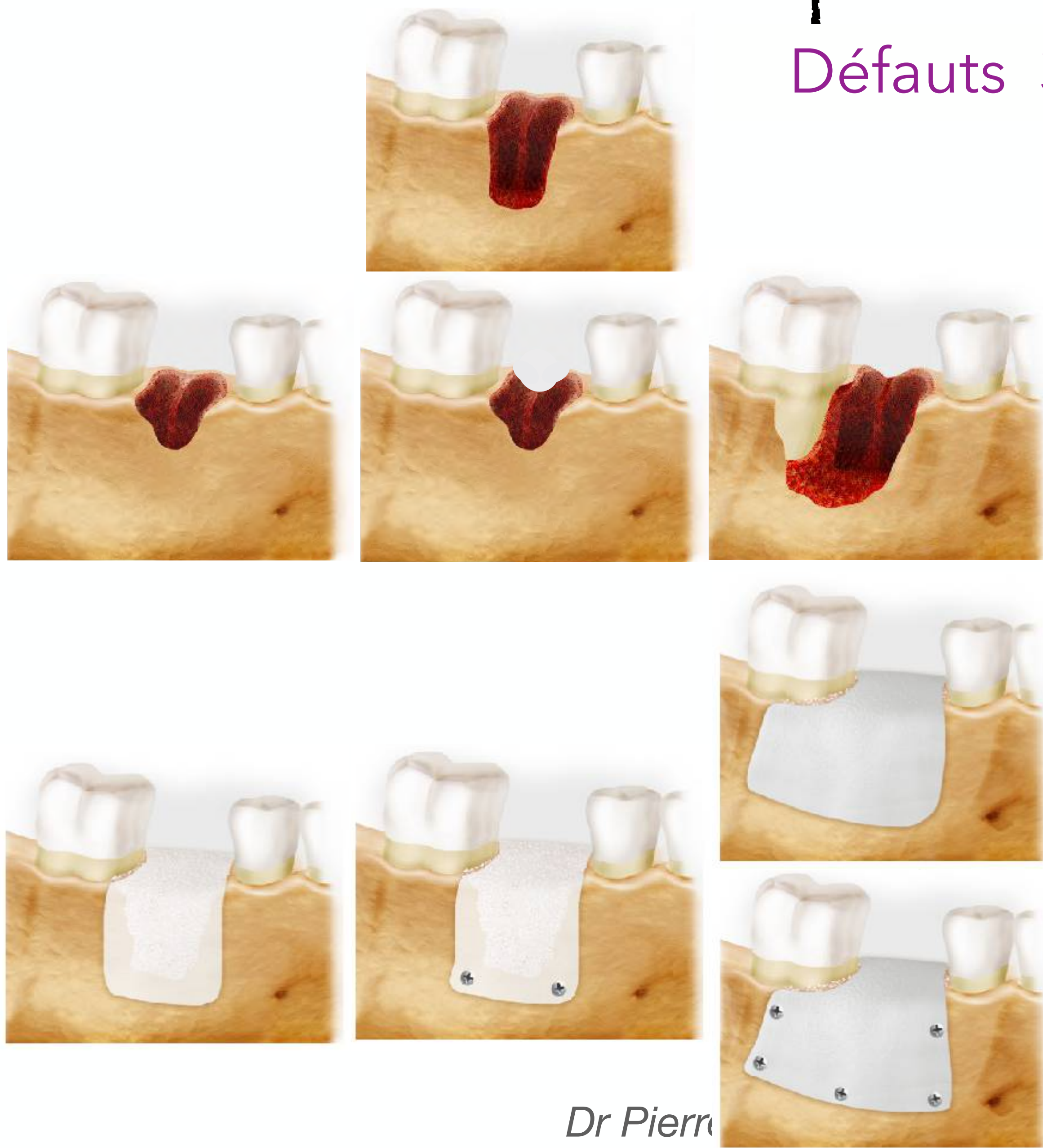


Réduction de la resorption



Principes de la ROG

Défauts 3, 4 & 5



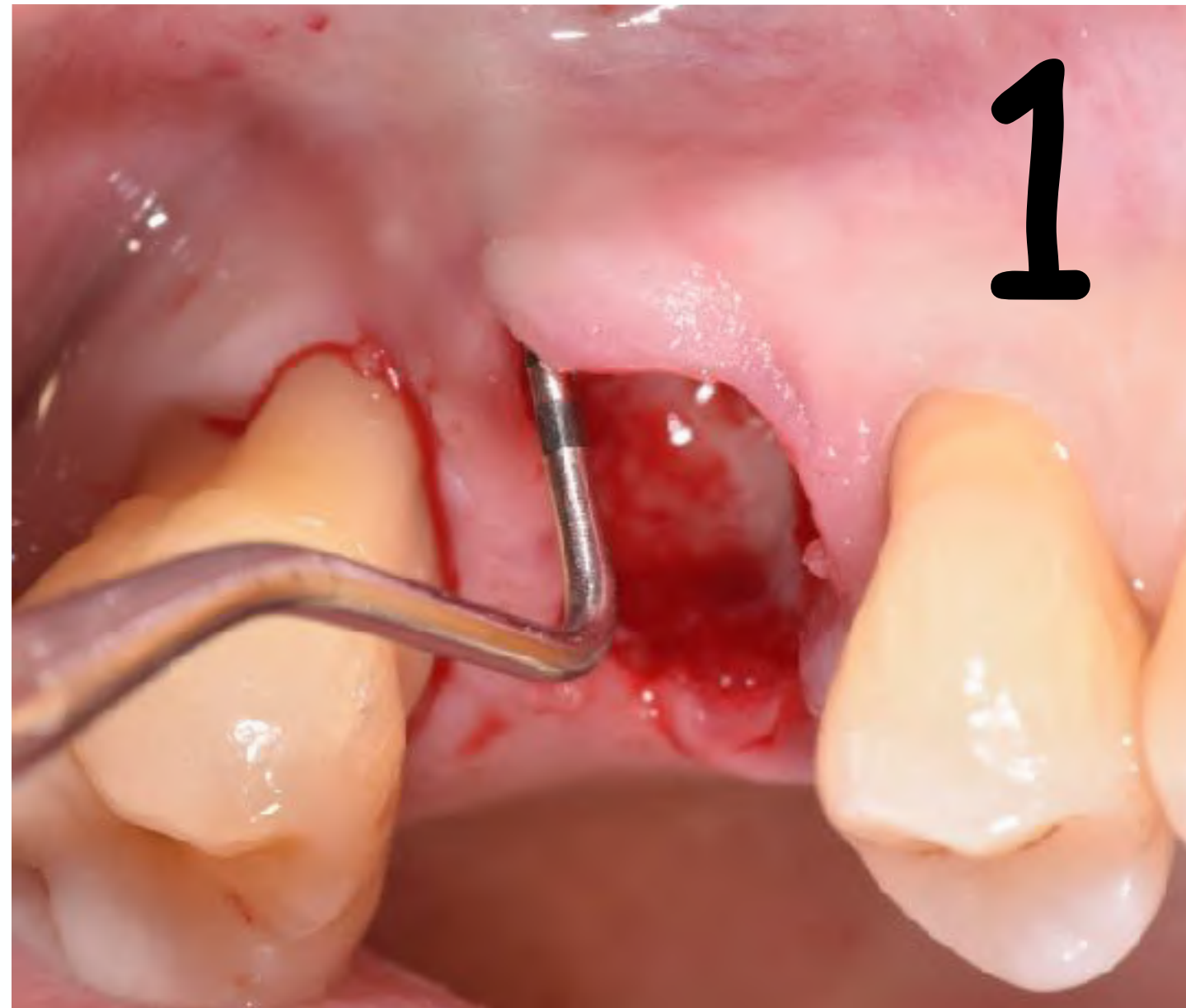
Exclusion cellulaire

Stabilité du caillot/angiogenèse

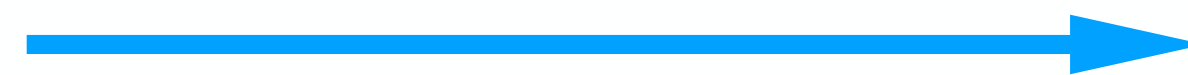
Préservation du volume



Approche de préservation/régénération alvéolaire



Extraction
+ ROG
(+ *augmentation sinusienne*)
+ RTG
+ MG

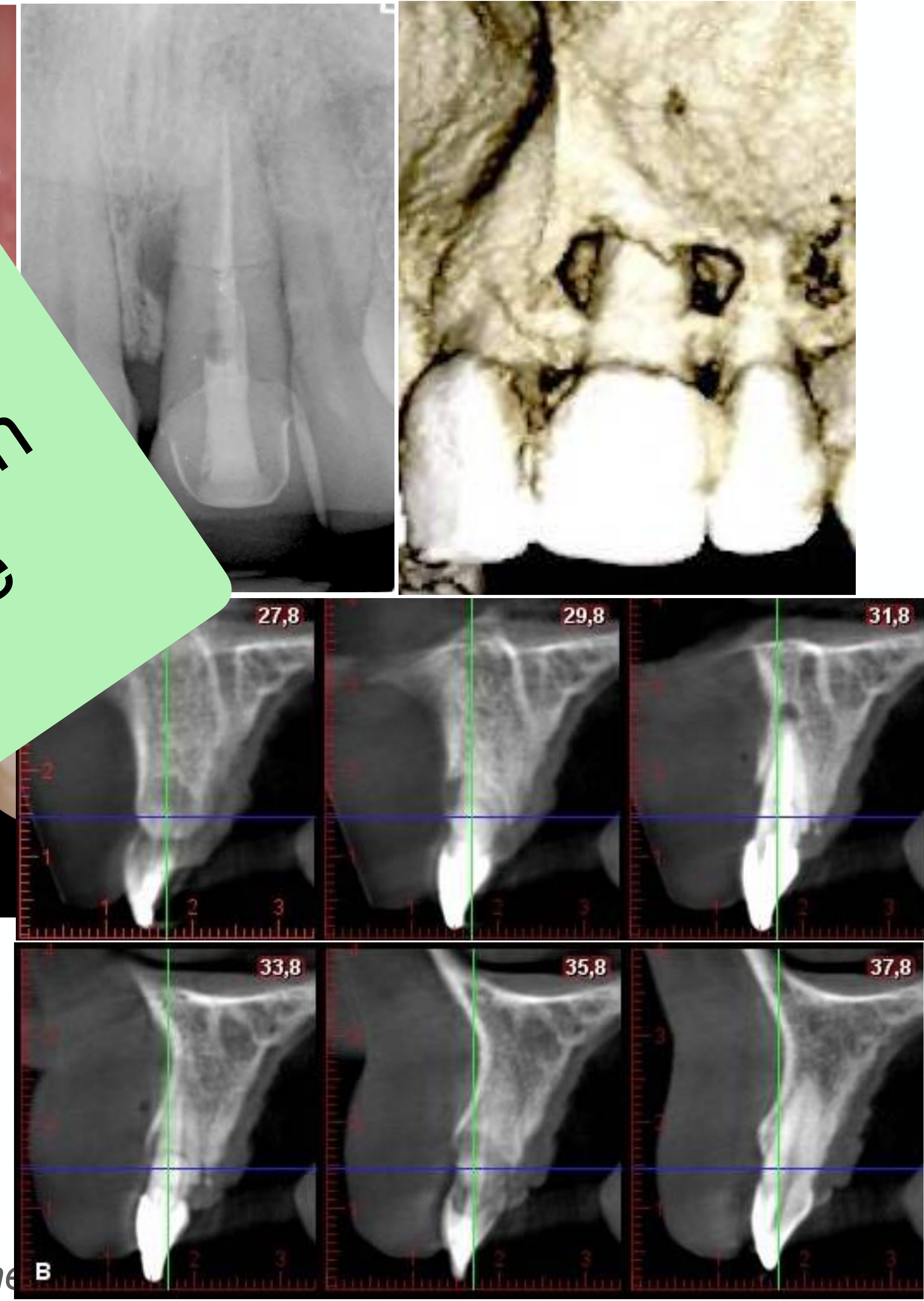


Pose implant
minimallement
invasive

Homme 23 ans, fumeur, Parodontite, RAS

Extraction +
ROG et
Implantation
Différée

- ✓ Niveau gingival correct / fistule
- ✓ Corticale V défaut large et profond
- ✓ Positionnement 3D optimal / os ?





PARO
IMPLANT
FORMATION

Votre pratique clinique évolutive en
parodontologie, implantologie et prothèse.



Dr Pierre Cherfane

pierre@dr-cherfane.com



10 j



Retrait membrane

6 semaines



Dr Pierre Cherfane

pierre@dr-cherfane.com

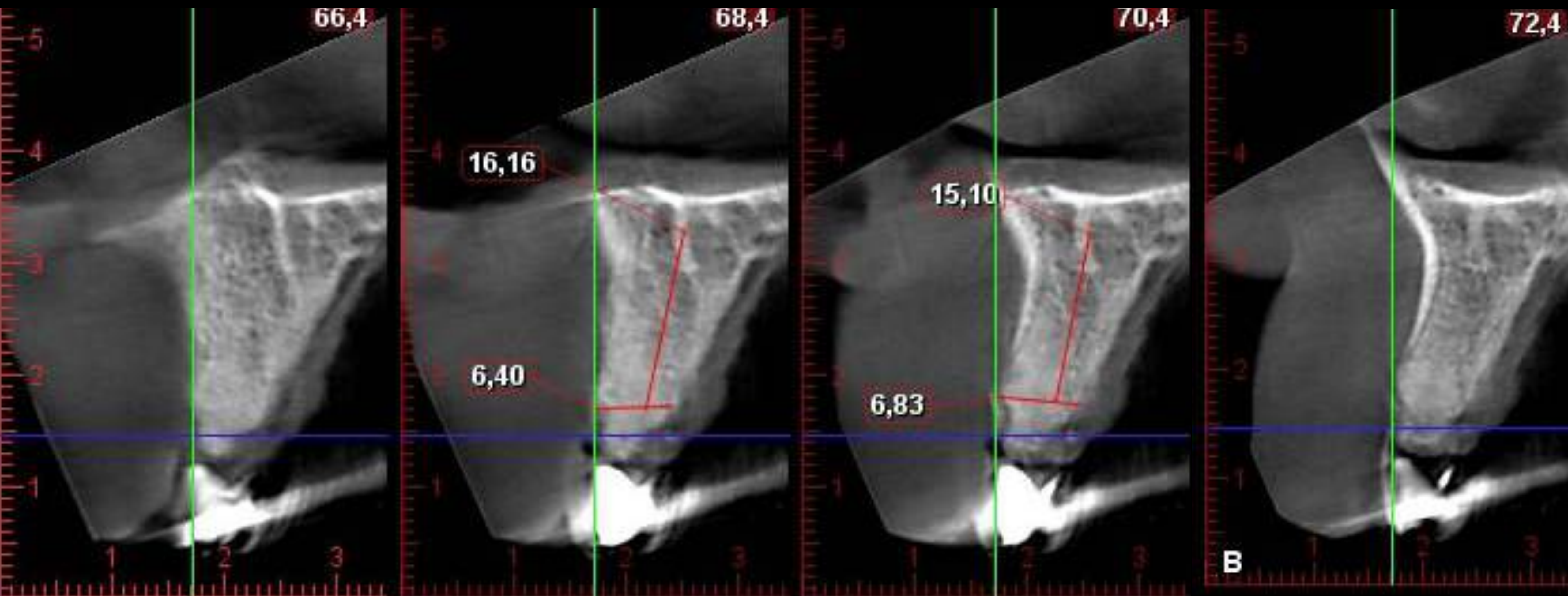
3 mois



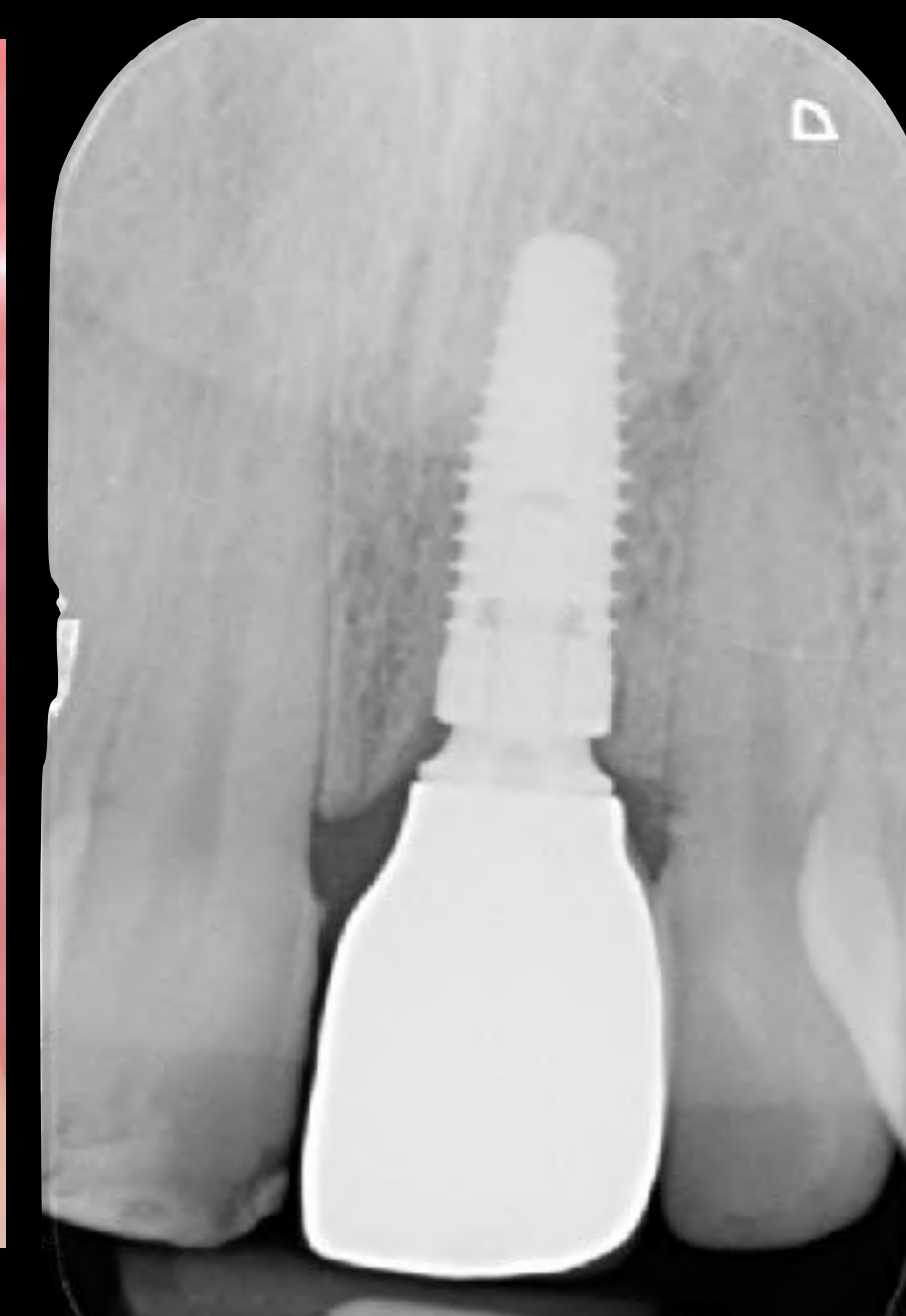
Dr Pierre Cherfane

pierre@dr-cherfane.com

CBCT 3 mois



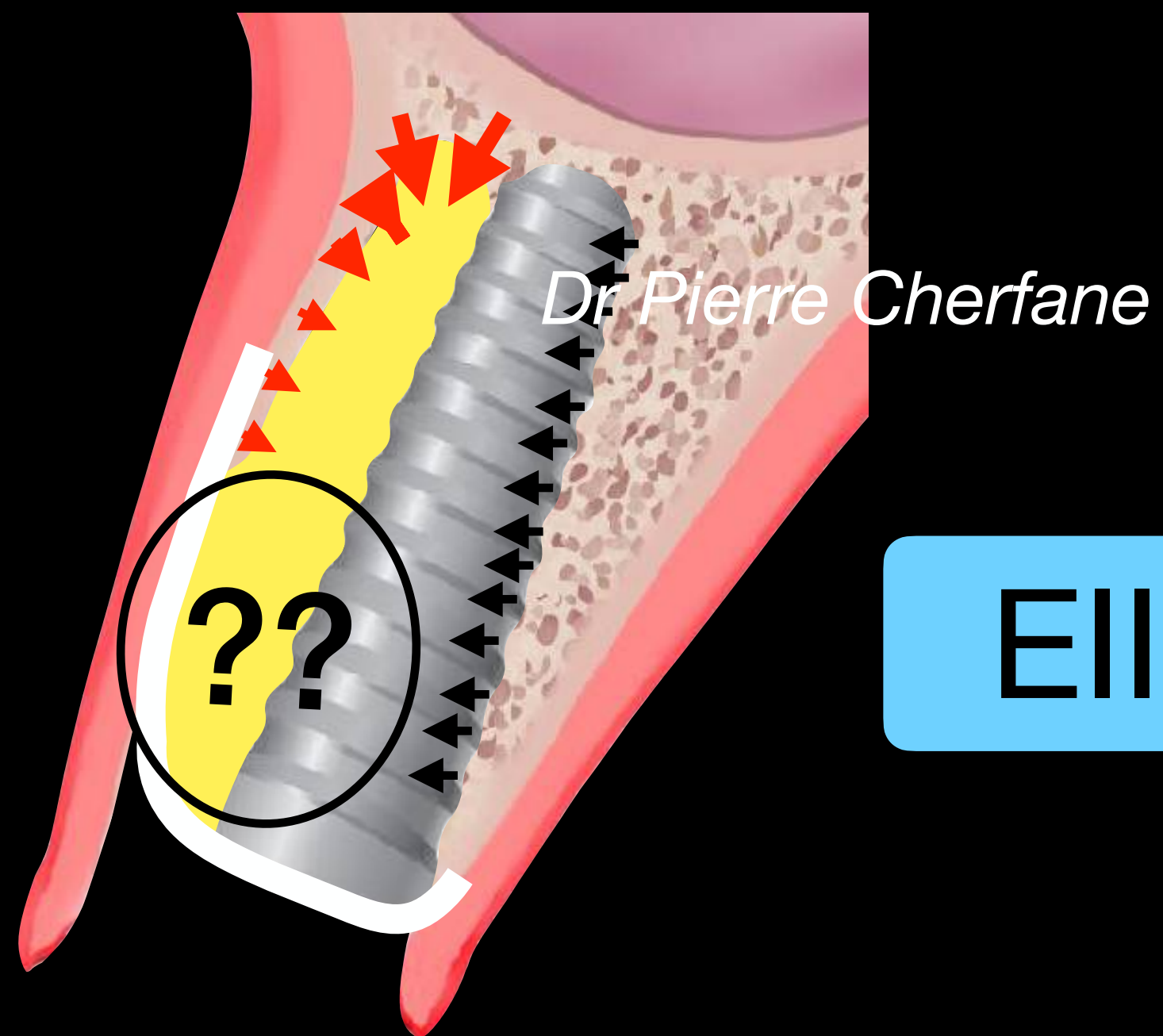




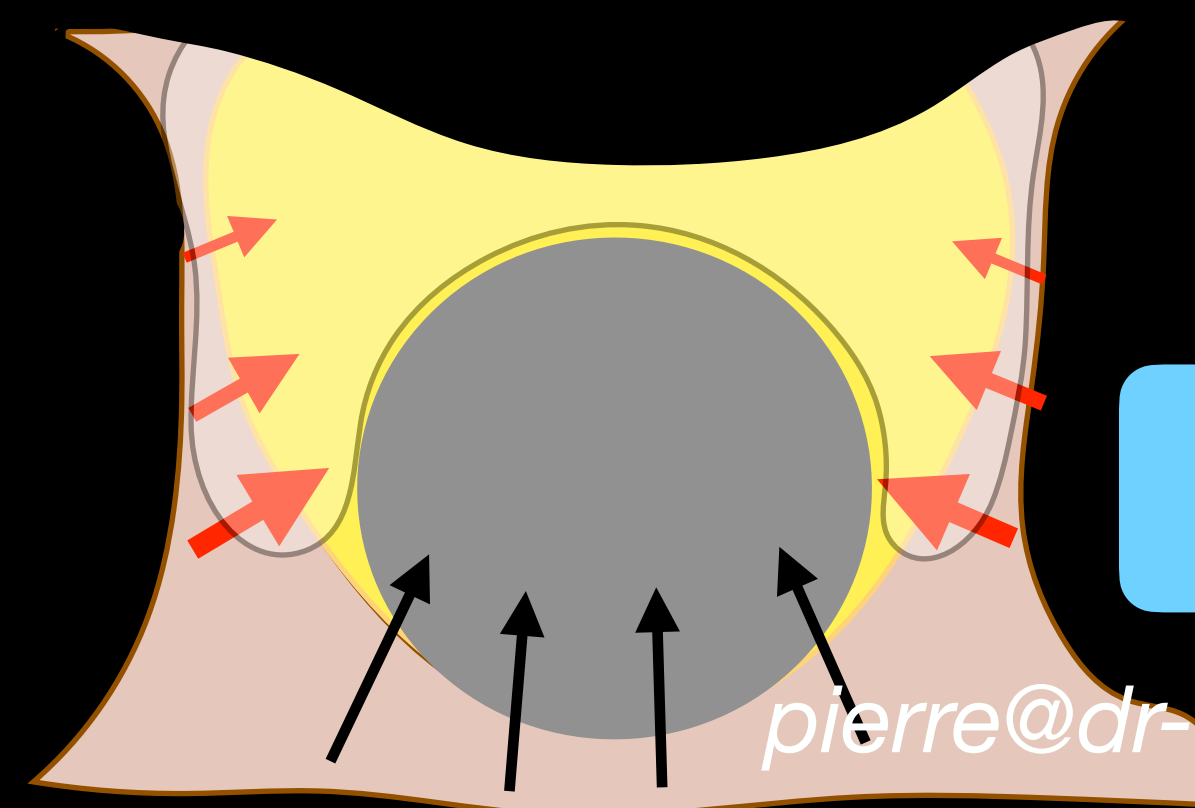
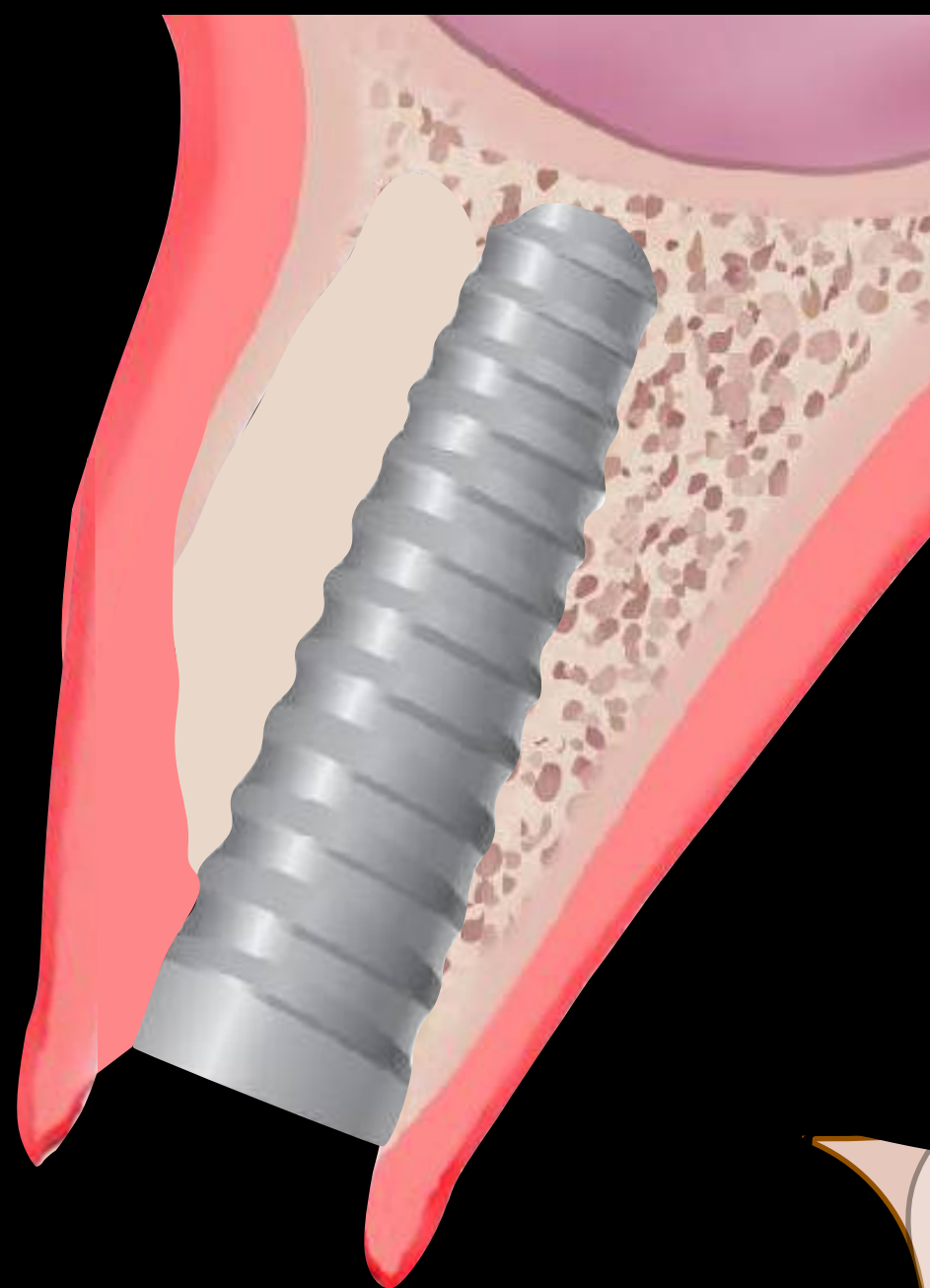
Prothèse : Dr Yvan PAWLOFF, Paris

Dr Pierre Cherfane

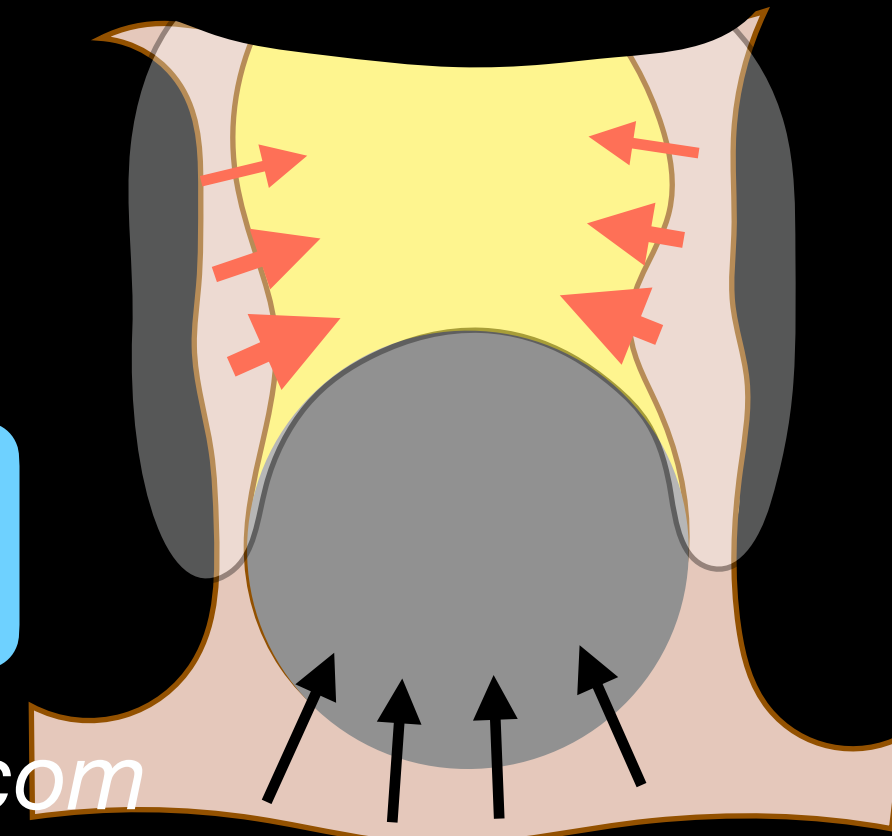
pierre@dr-cherfane.com



EII



EII



Immediate implant placement for a single anterior maxillary tooth with a facial bone wall defect: A prospective clinical study with a one-year follow-up period

Renzhang Liu MM, Doctor¹ | Zhen Yang MD, Doctor² | Jianguo Tan MD, Professor² |
Li Chen MD, Doctor² | Hanqing Liu MM, Doctor¹ | Jianjun Yang MBBS, Professor¹

¹Department of Oral and Maxillofacial Surgery, The Affiliated Hospital of Qingdao University, Shandong, China

²Department of Prosthodontics, School and Hospital of Stomatology, Peking University, Peking, China

Correspondence:
Jianjun Yang, Department of Oral and Maxillofacial Surgery, The Affiliated Hospital of Qingdao University, NO.16 Jiangsu Road, Qingdao, Shandong 266071, China.
Email: yjjqd@126.com

Funding Information:
Qingdao Municipal Science and Technology Bureau. Grant/Award Number: 15-9-2-73-mh

Abstract

Background: Clinical studies on immediate implant placement for a single anterior maxillary tooth with a facial bone wall defect are rarely reported.
Objective: To study the clinical outcomes of immediate implant placement combined with flap surgery, guided bone regeneration and non-submerged healing for a single anterior maxillary tooth with a facial bone wall defect.
Materials and Methods: Forty-five patients with a single failing tooth in the anterior maxillary region showing indications for extraction combined with a facial bone wall defect were treated by means of immediate implant placement combined with flap surgery, guided bone regeneration and non-submerged healing. During this study, the implant survival rate, soft and hard tissue dimension changes, pink aesthetic score (PAS), and patient aesthetic satisfaction were assessed at 1, 6, and 12 months post-operatively.
Results: At 12 months post-operatively, the survival rate of 45 implants was 100%. Mesial/distal papillary level reduction and midfacial soft tissue recession were measured as 0.53, 0.41, and 0.31 mm, respectively. The thickness of facial bone reduction measured by cone beam computed tomography was 0.94, 0.80, 0.85, 0.82, 0.45, and 0.41 mm at 6 different sites around the implant. The mean PAS and patient aesthetic satisfaction were determined to be 10.58% and 93%, respectively.
Conclusions: The proposed surgical procedure is a valuable treatment strategy as assessed by preliminary clinical outcomes.

KEYWORDS

facial bone wall defect; flap surgery; GBR; immediate implant placement; non-submerged healing

1 | INTRODUCTION

In the 1960s, Professor Brånemark founded the theory of osseointegration and pioneered the modern dental implant.¹ Over 50 years later, modern dental implantation technology is classified as immediate implant placement (type 1), early implant placement with soft tissue healing (type 2),

early implant placement with partial bone tissue healing (type 3), and late implant placement (type 4), according to the time of implantation in a tooth extraction site.² In 1978, the first study of immediate implant placement was completed by Professor Wilfried Schulte at the German University of Tübingen, who suggested the Tübingen implant.³ After more than 40 years of basic and clinical research, it has been shown that

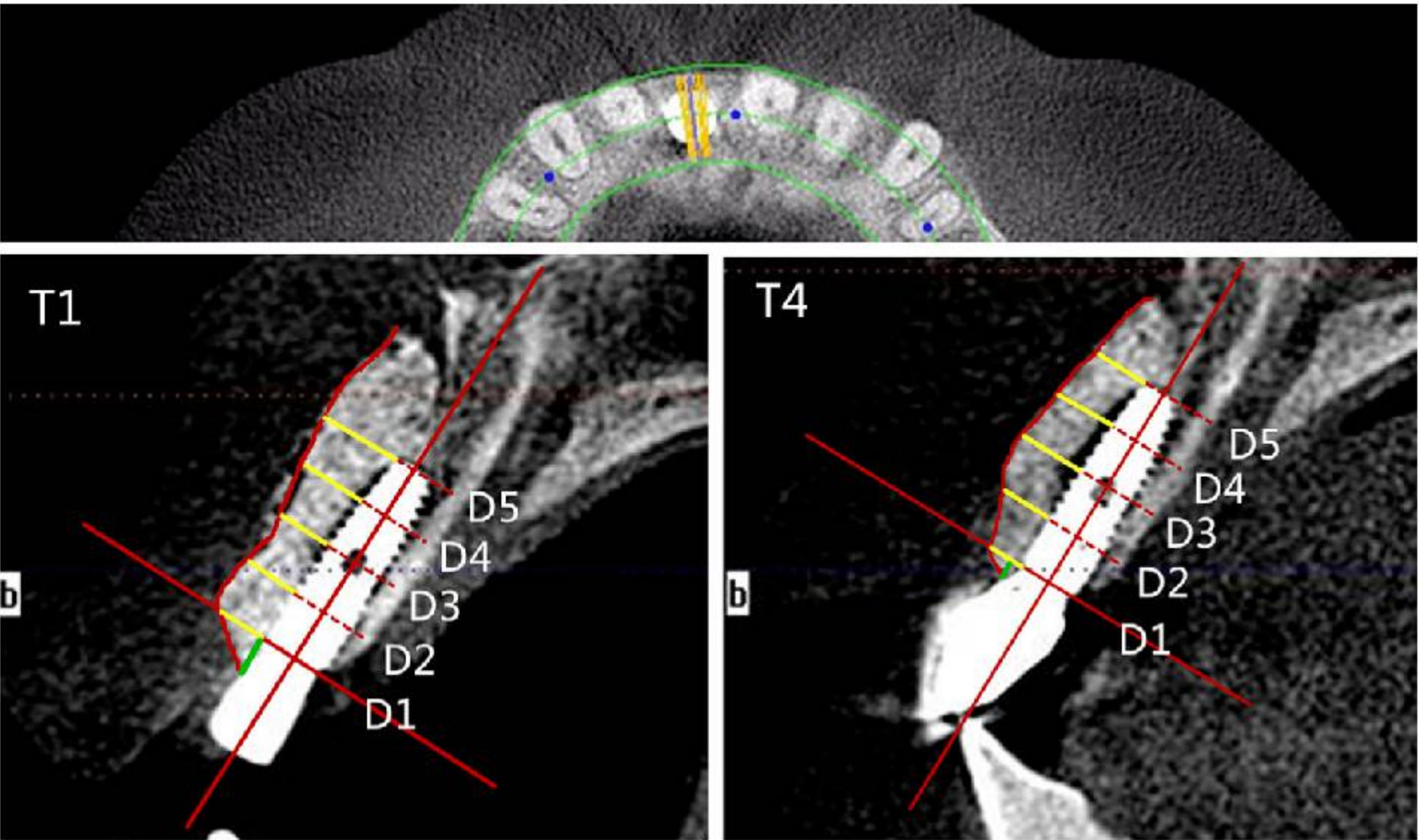
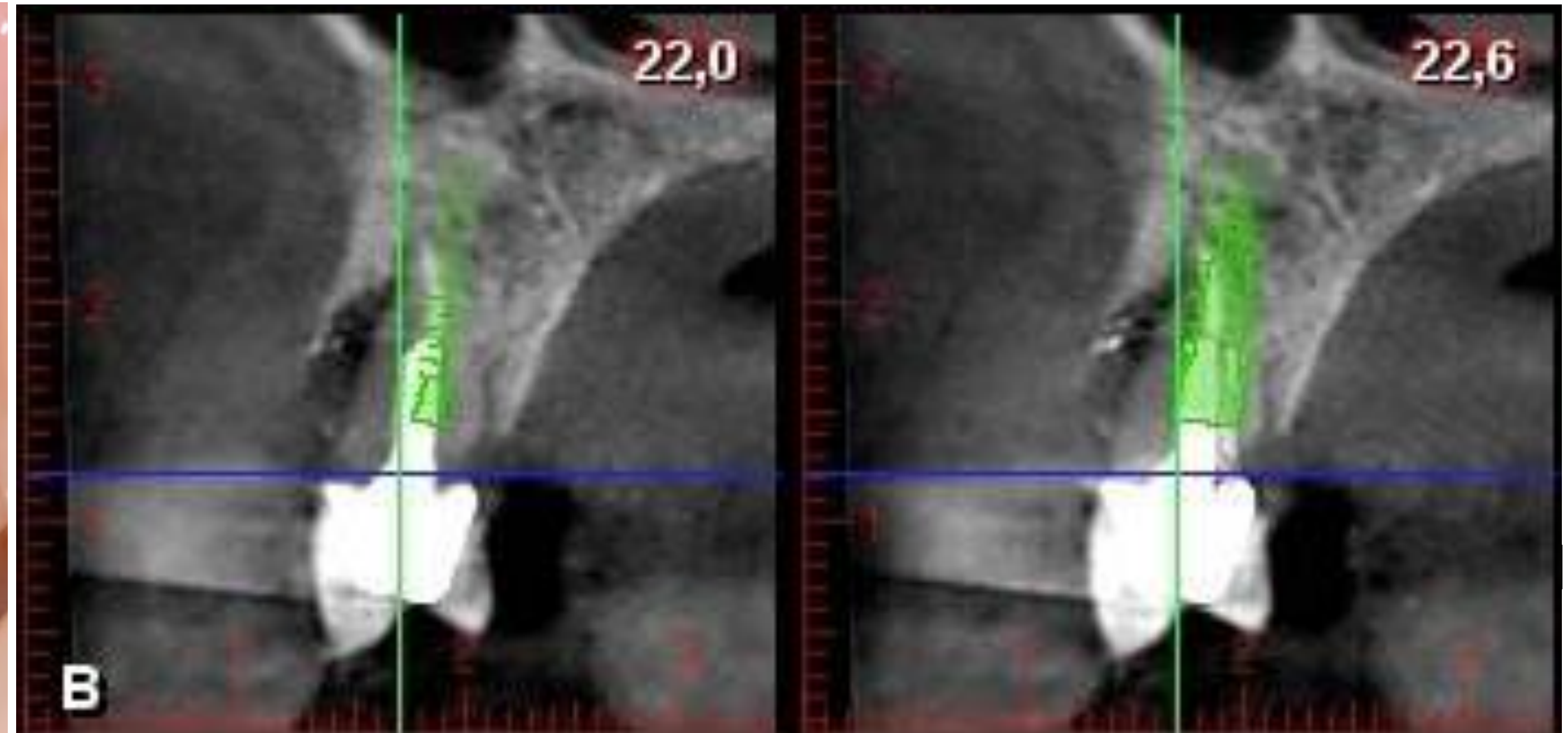
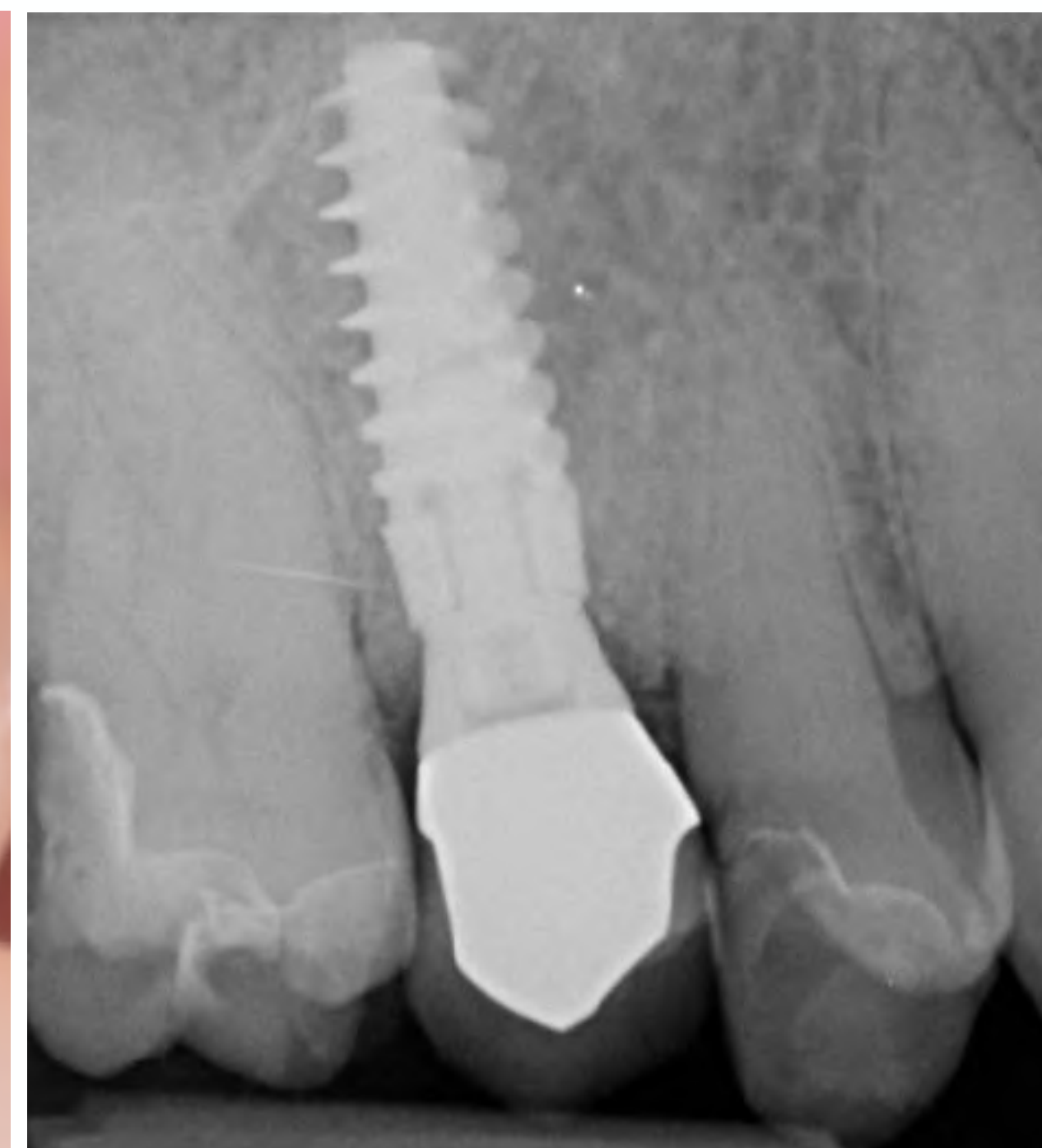
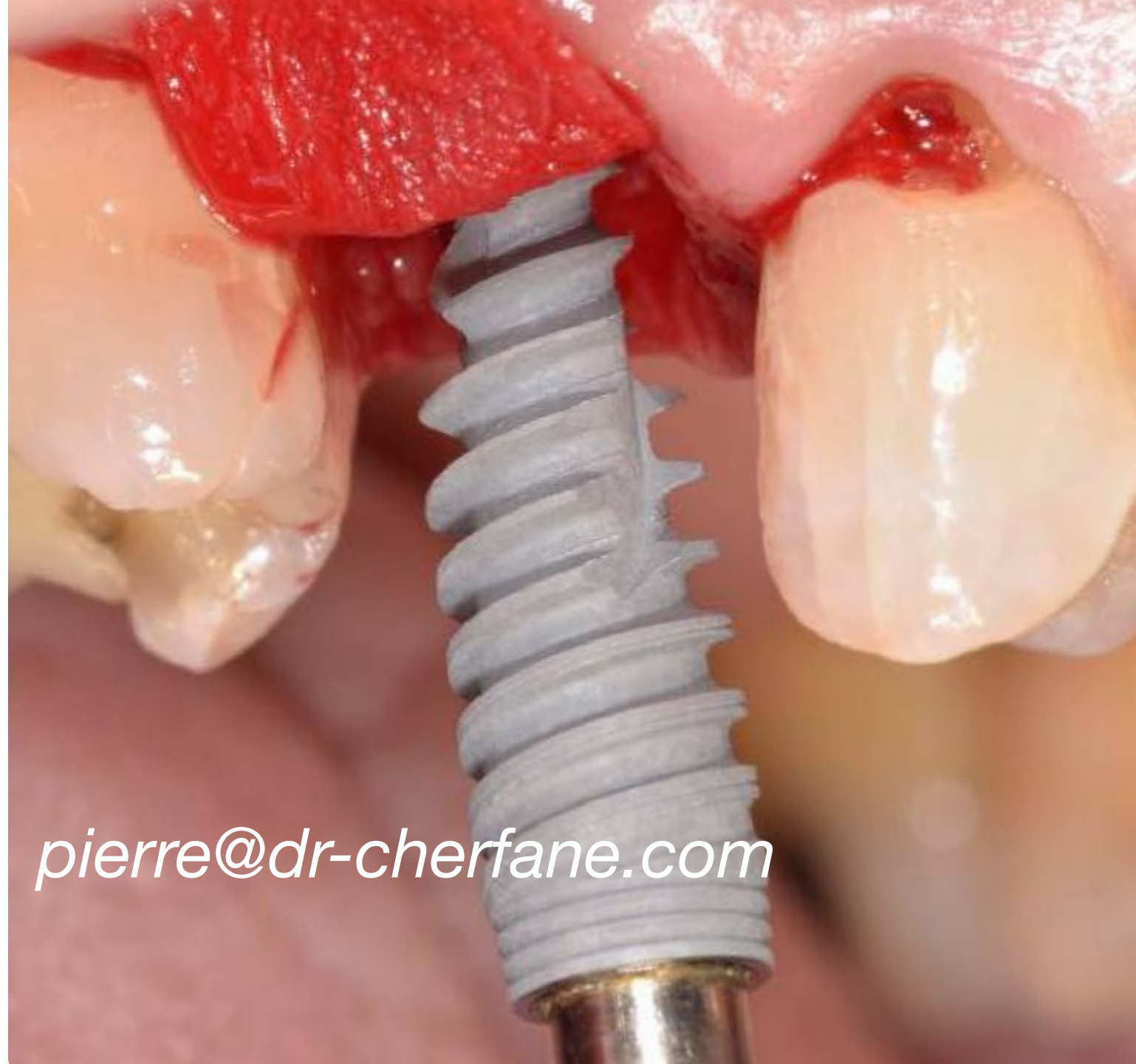


FIGURE 3 The facial bone for all 45 implants was measured post-operatively (T1) and 12 months after the implant surgery (T4) by sagittal cone beam computed tomography (CBCT) (i-CAT 17-19, Imaging Sciences International, LLC, Pennsylvania) images through the implant axis. Five sites (D1, D2, D3, D4, and D5) located at an interval of 1/4 the length of the implant axis (from shoulder to root apex). Lines perpendicular to the long axis of the implant were made at each site. The horizontal facial bone thickness (HFBT) was defined as the distance from the facial outline of the implant to the outer surface of the facial bone on these lines. The vertical facial bone level (VFBL) was defined as perpendicular to the distance from the shoulder of the implant platform to the most coronal point of the facial bone. This distance was parallel to the axis of the implant



2,5 ans







EID

Dr Pierre Cherfane

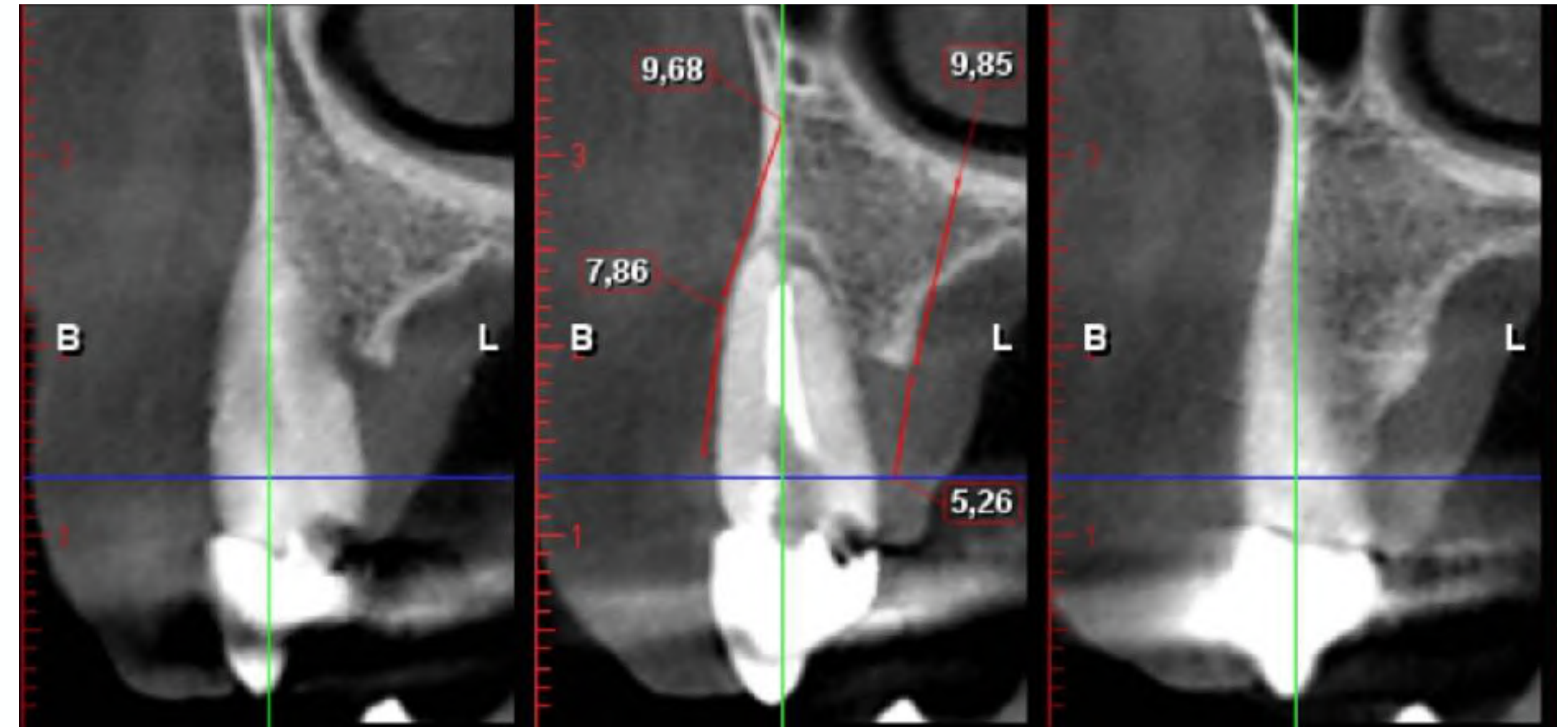
pierre@dr-cherfane.com

Dr Pierre Cherfane

pierre@dr-cherfane.com



DEFECT 4



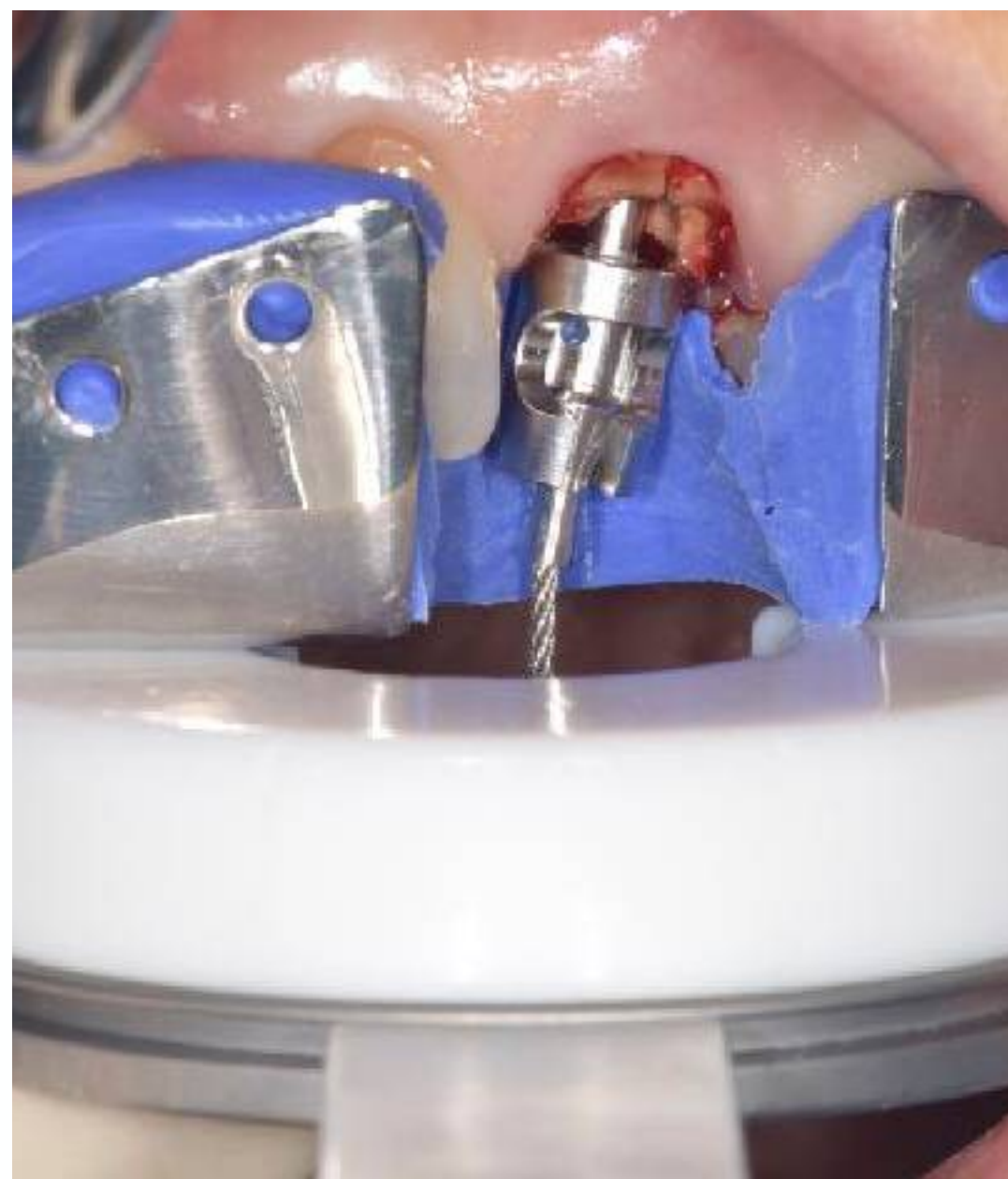
60 Years old female, Type 2 diabetes, osteoporosis, drug induced hepatitis ...

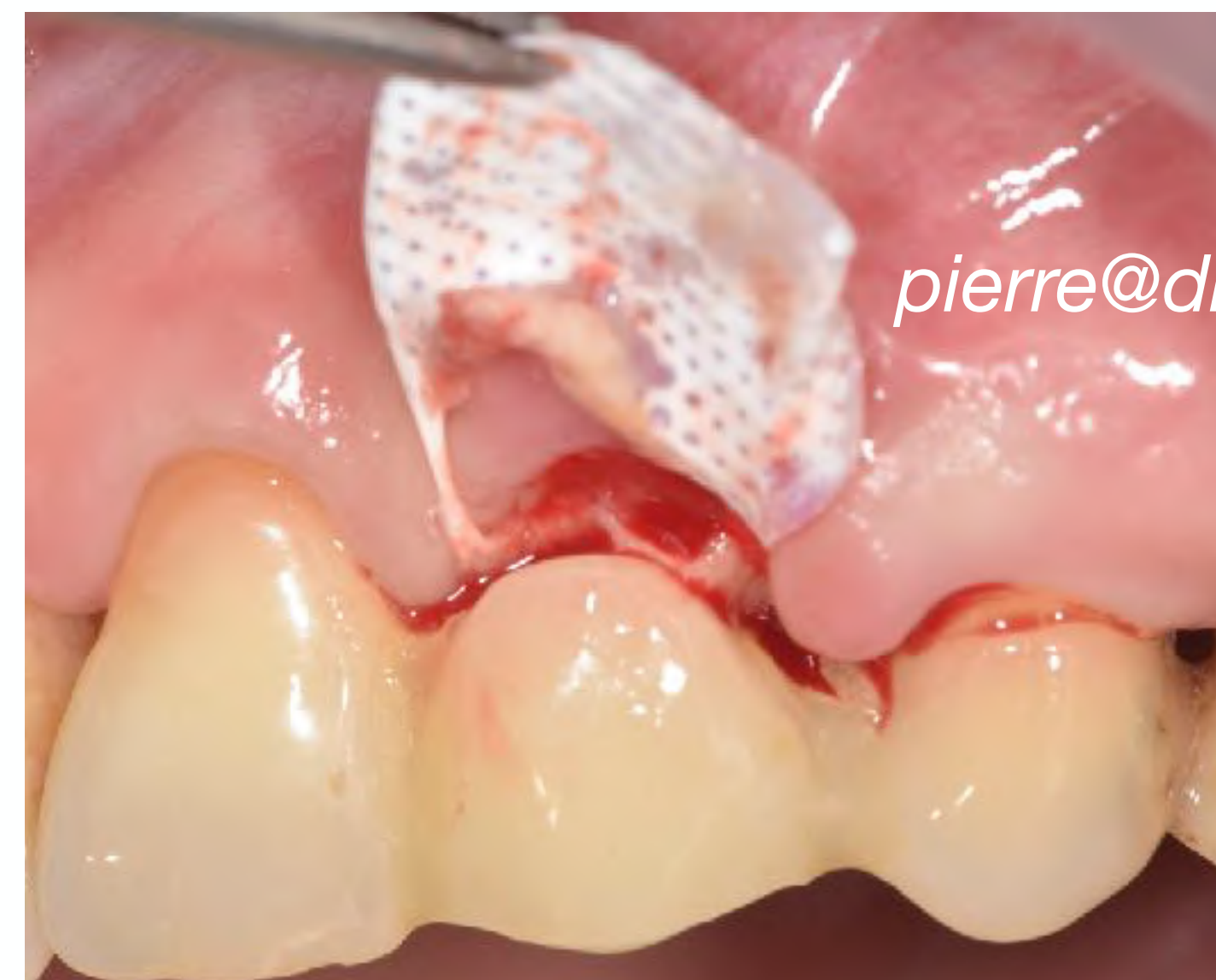
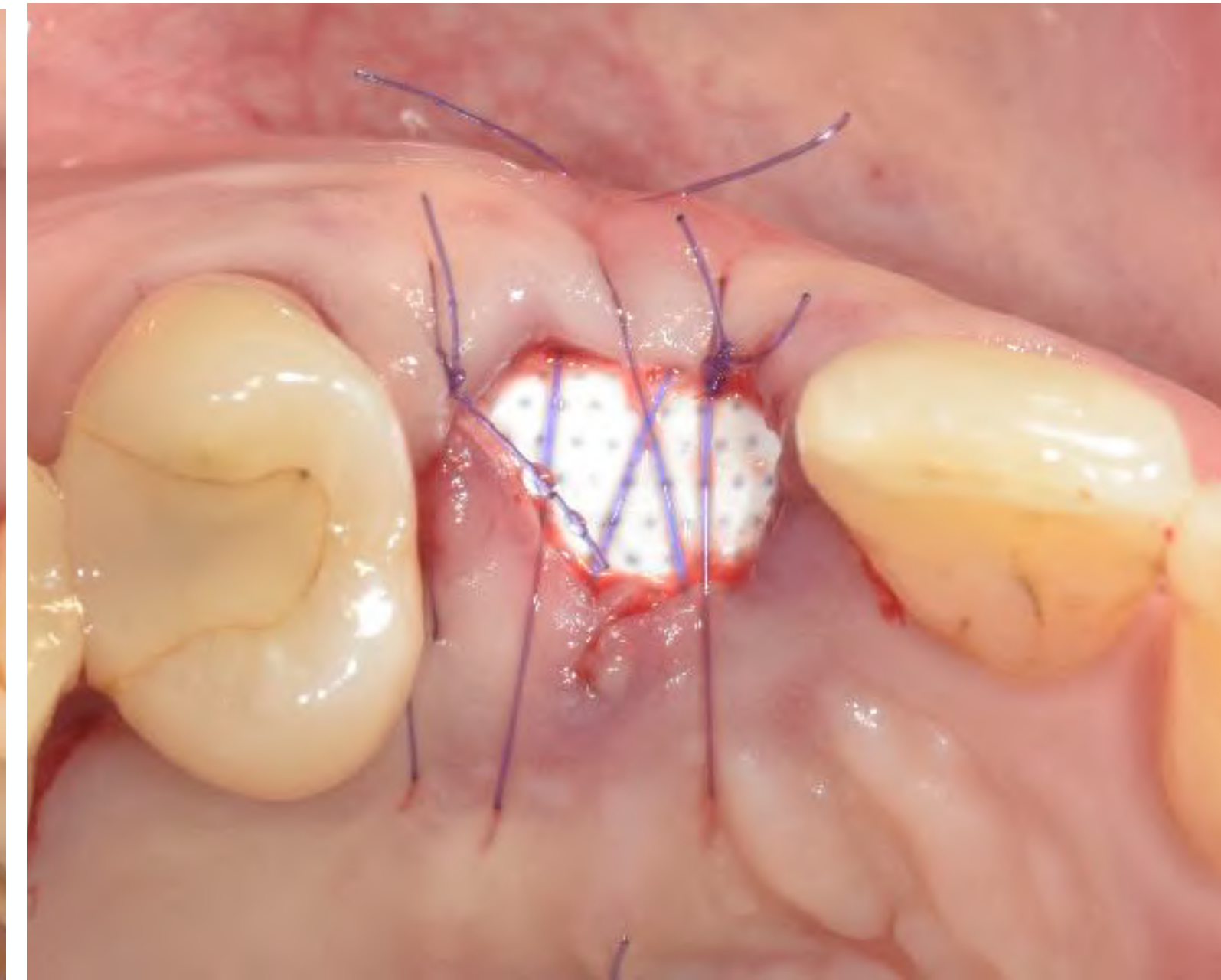


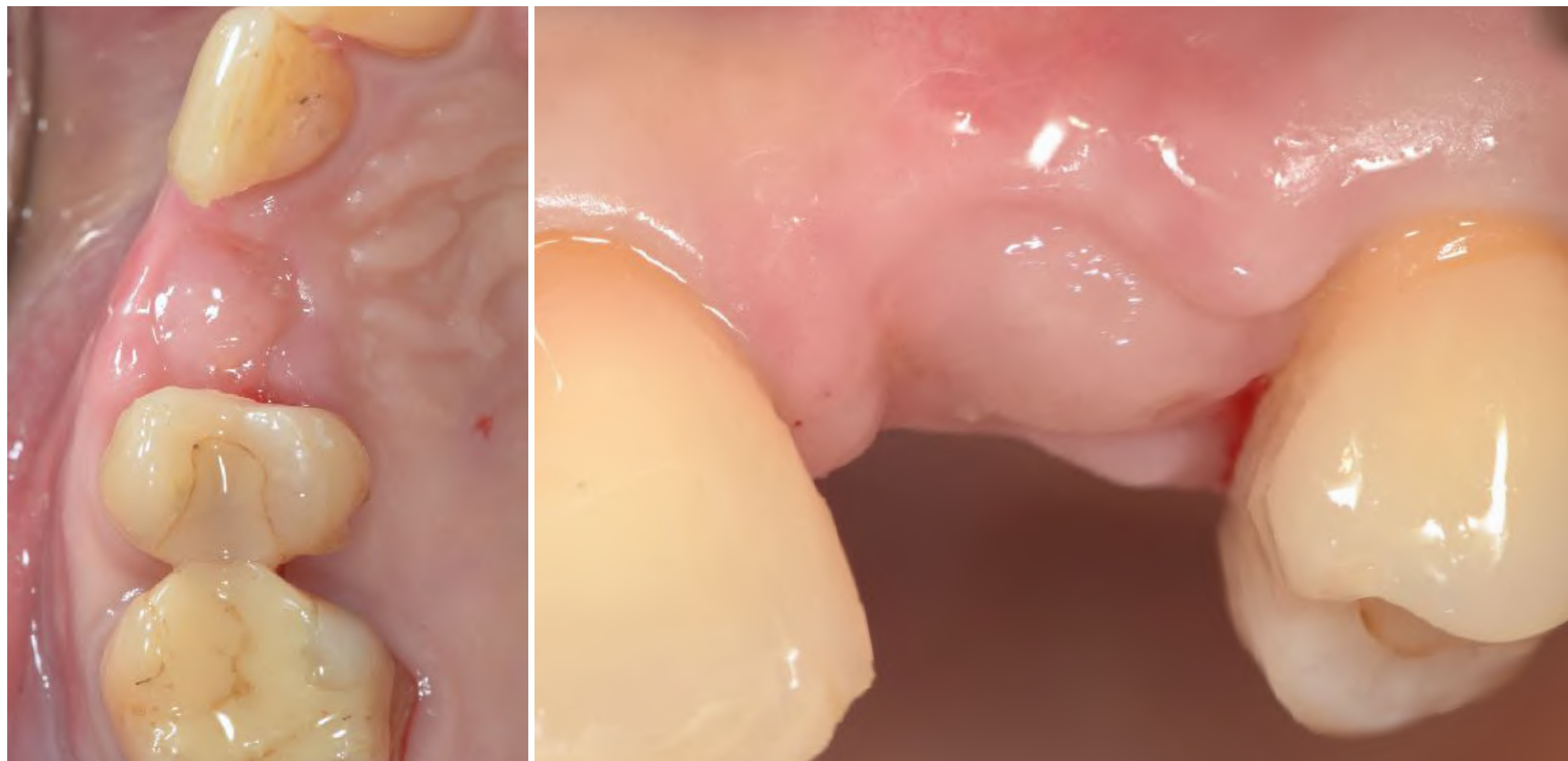
Extraction
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Conditions d'asepsie d'une chirurgie
implantaire



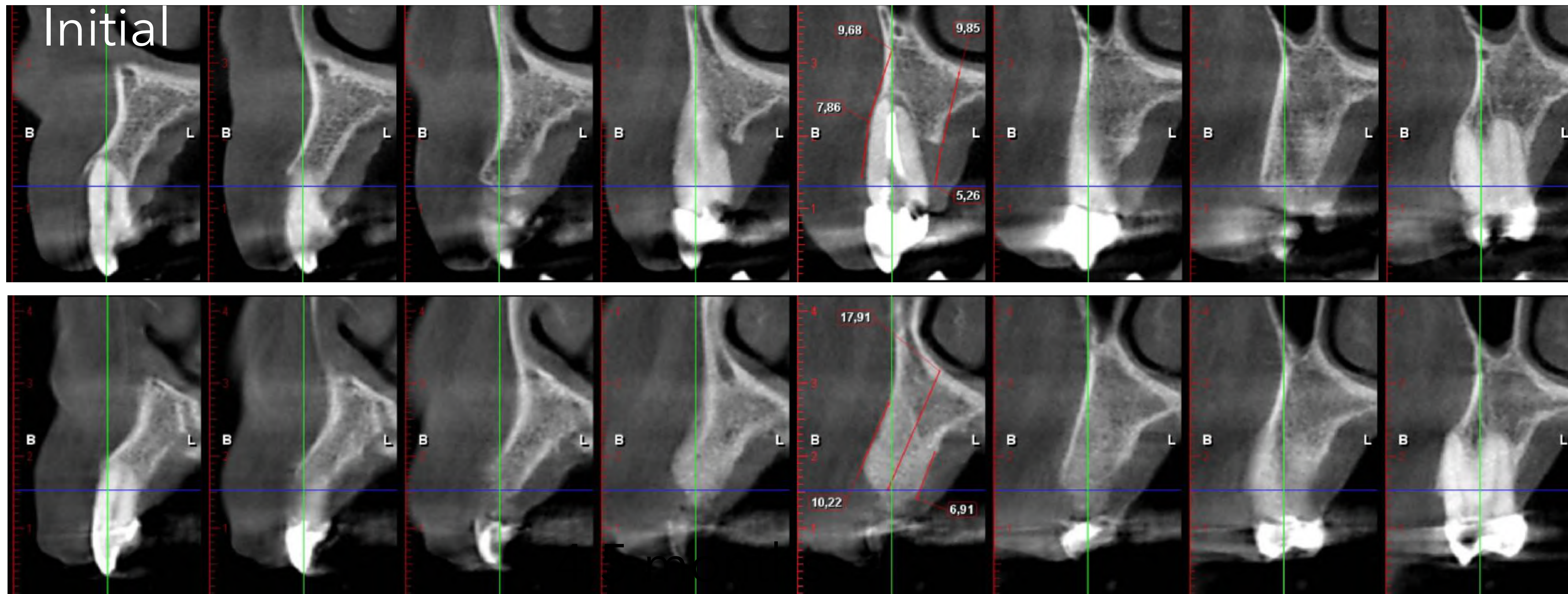
Dr Pierre Cherfane



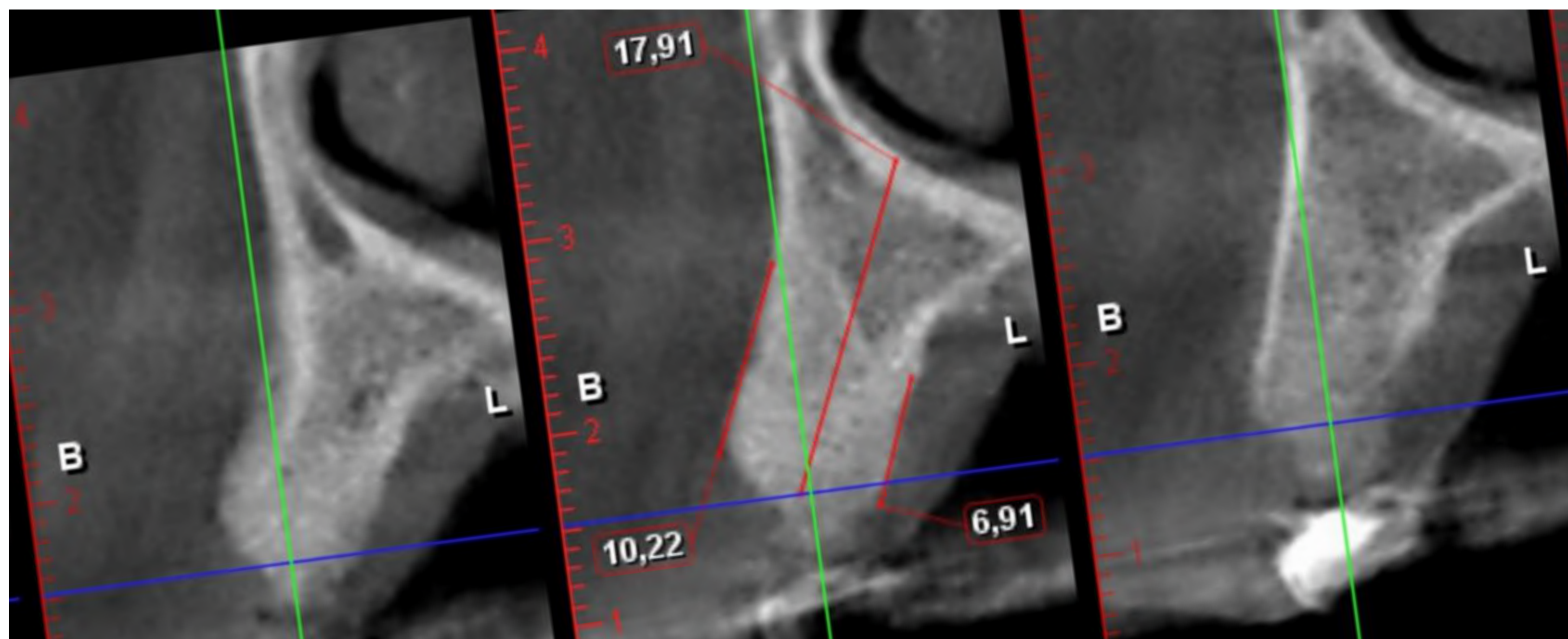
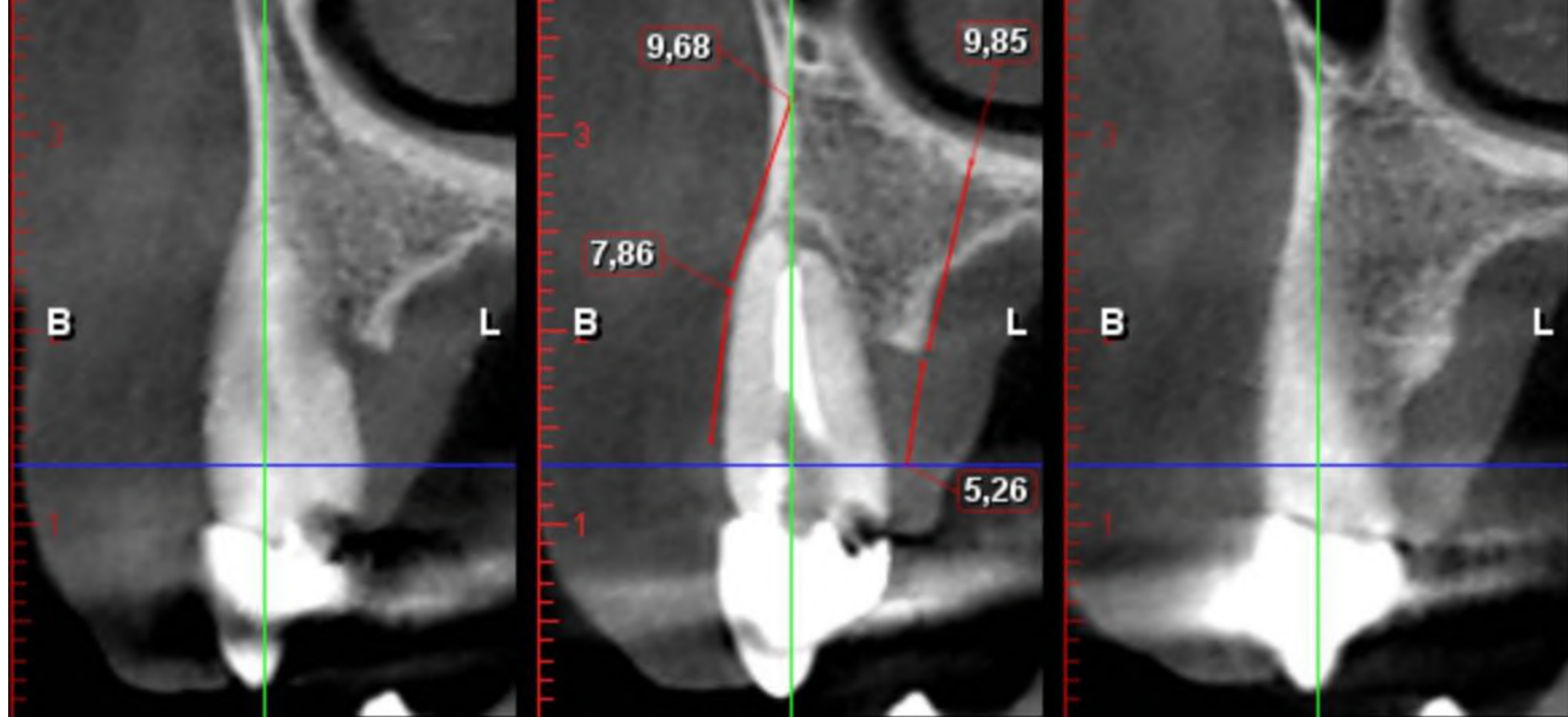




4 months after surgery



4,5 months

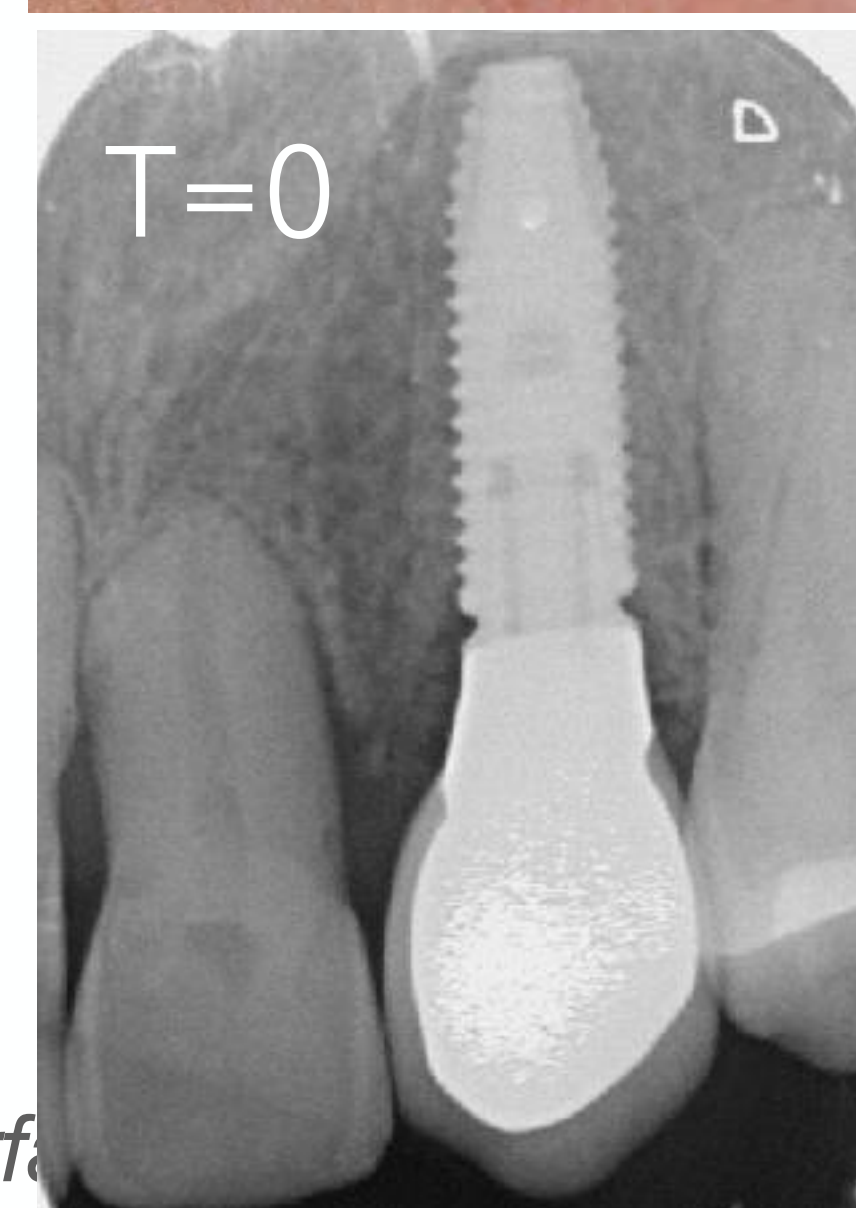




Guided surgery, dynamic navigation



Flapless, less traumatic



Cherfa

er



3 years FU



@dr-cherfane.com

Immediate guided bone regeneration of an extraction alveolus presenting a significant bone loss with allograft and exposed d-PTFE membrane: case reports.

Pierre Cherfane^a, Alexis Marin^b



Abstract

Objective: The aim of this clinical report is to propose a simple and reproducible alveolar preservation method that can regenerate alveolus with defects in the vestibular and/or lingual bony walls. The method consists of a bone substitute filling associated to a non-resorbable left exposed membrane, in a same-day setup following the avulsion. The objective is to obtain a sufficient bone volume suitable for the optimal positioning of the implant avoiding the need of a classic GBR step after the avulsion. **Materials and methods:** Two clinical cases are presented: A 61-year-old female with a fractured maxillary left canine and a 65-year-old male exhibiting terminal horizontal alveolysis on maxillary left 1st and second molars. Initially, a cone-beam computed tomography (CBCT) was performed to evaluate bone defects. Non-traumatic extraction was conducted followed by grafting with an allograft bone substitute, and placement of a non-resorbable d-PTFE membrane fixed with sutures without flap elevation. Tissue healing was evaluated two weeks post-procedure. The non-resorbable membrane was placed for six weeks after the avulsion. A follow-up CBCT was taken at three months to check the bone volume and determine optimal implant dimensions and placement. Flapless implant insertion was assisted by dynamic navigation technology. **Results:** significant bone regeneration was observed between the initial CBCT and the three months follow-up post-operation. Both bone stability and soft tissues were deemed satisfactory one year after crown placement. **Conclusion:** This method seems promising, and our findings are consistent with the existing body of literature. However, large-scale studies are imperative to validate these results and enhance the protocol refinement.

Keywords: Alveolar Bone Loss, Bone Regeneration, Bone Substitutes, Dental Implantation, Membranes.

INTRODUCTION

Constraining bone resorption subsequent to dental extraction represents a major challenge in implant treatment. Ensuring adequate bone thickness facilitates optimal implant placement, therefore it becomes an indispensable factor to obtain enhanced esthetic and functional long-term results. To reduce post-extraction resorption, numerous alveolar ridge preservation (ARP) techniques have been proposed, predominantly indicated in cases characterized by intact alveolus or those featuring buccal bone defects not exceeding one-third of the alveolar height.¹

In instances of significant defects, guided bone

regeneration (GBR) is implemented two-months post-extraction, allowing for adequate soft tissue healing.² GBR includes the use of membrane or bone blocks. However, this approach is associated with notable post-surgical morbidity because of the necessity of achieving tension-free closure of soft tissue, which requires a periosteal incision leading to swelling and potential hematoma formation. In 2001, the introduction of uncovered non-resorbable membranes in immediate extraction sites was proposed³, following promising outcomes in rats.⁴ Subsequent studies have consistently reported favorable results.

In this report, we present clinical cases demonstrating the application of GBR for advanced alveolar defects using a non-resorbable d-PTFE membrane voluntarily kept uncovered. In 2021, we introduced a classification

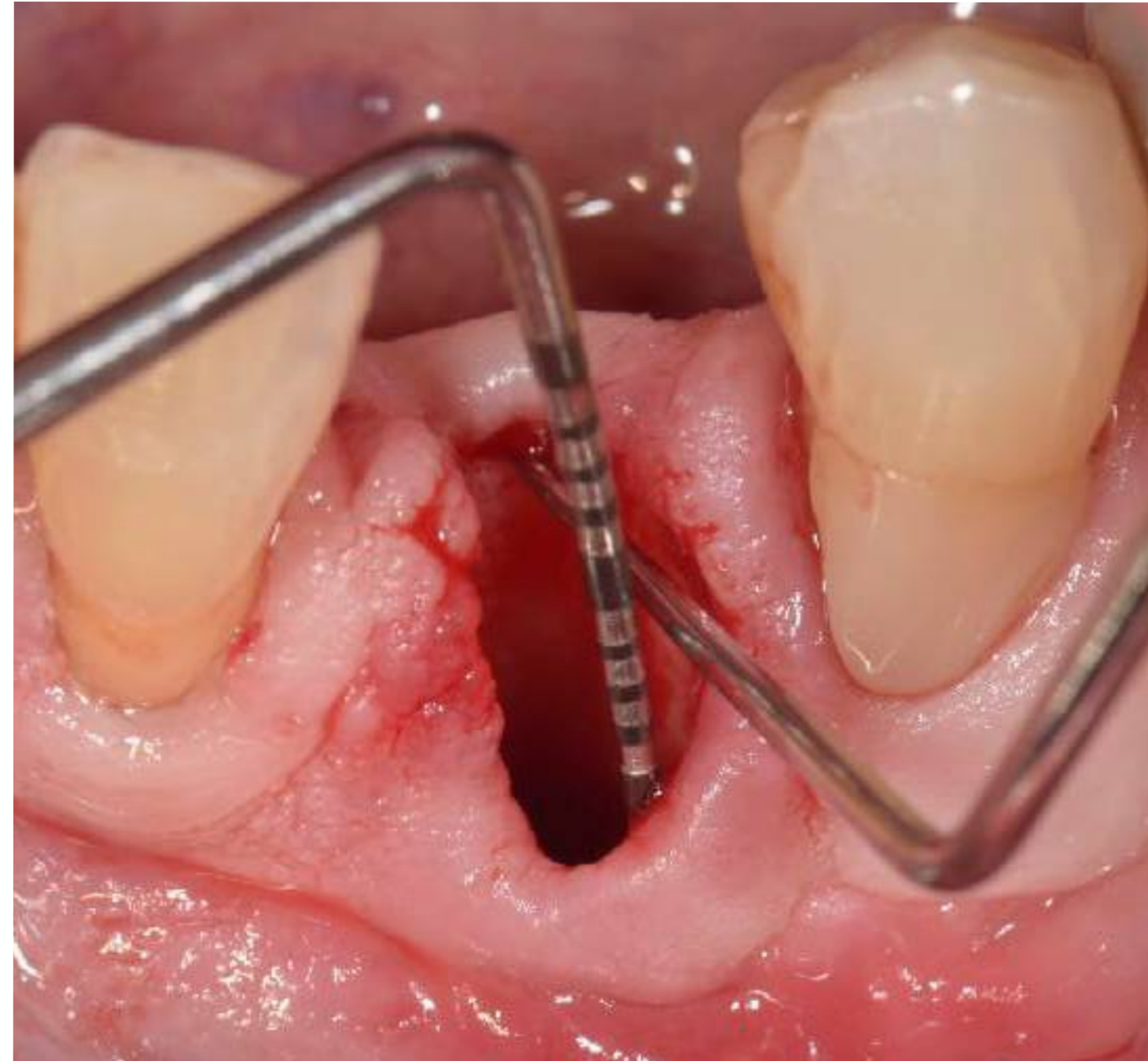
^a Pierre Cherfane, DDS, CES; Periodontics and Implantology - Private practice, Paris- France.
^b Alexis Marin, DDS; Private practice, Paris- France.

Type 4 Defect

10 mm discrepancy
B - L bone crest



Female, 74 years,
Bisoprolol, statine



pierre@dr-cherfane.com

Type 4 Defect



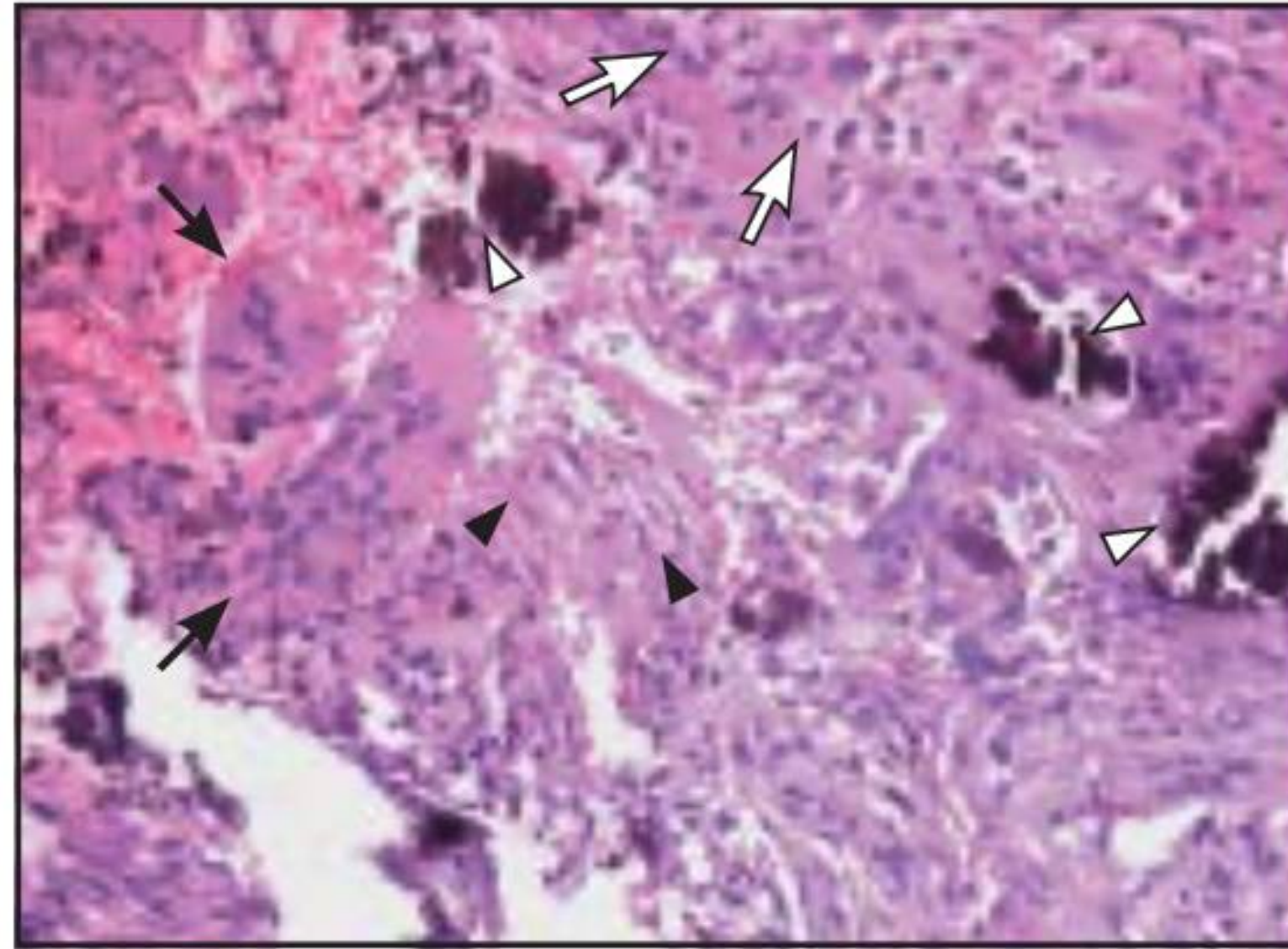
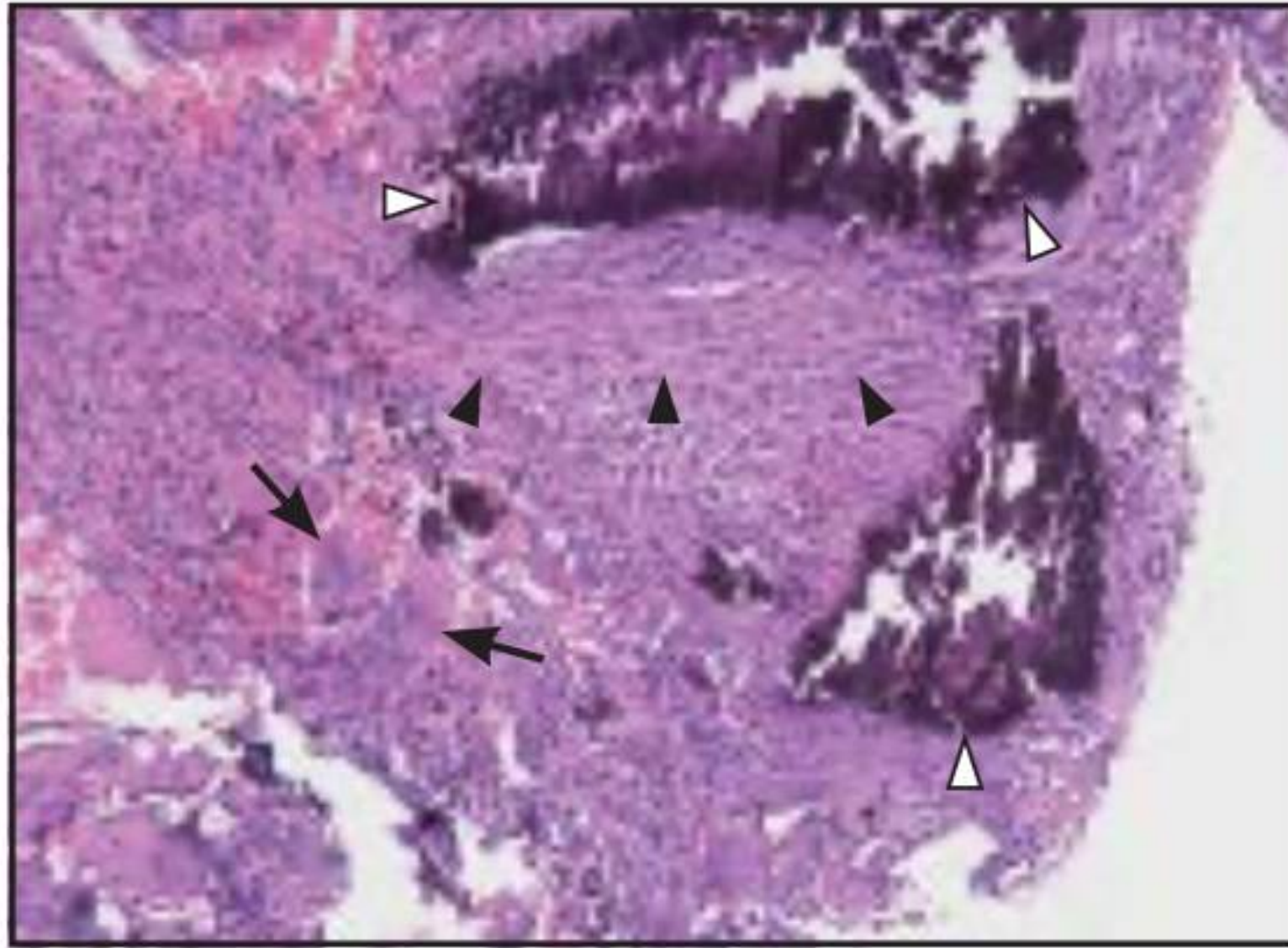
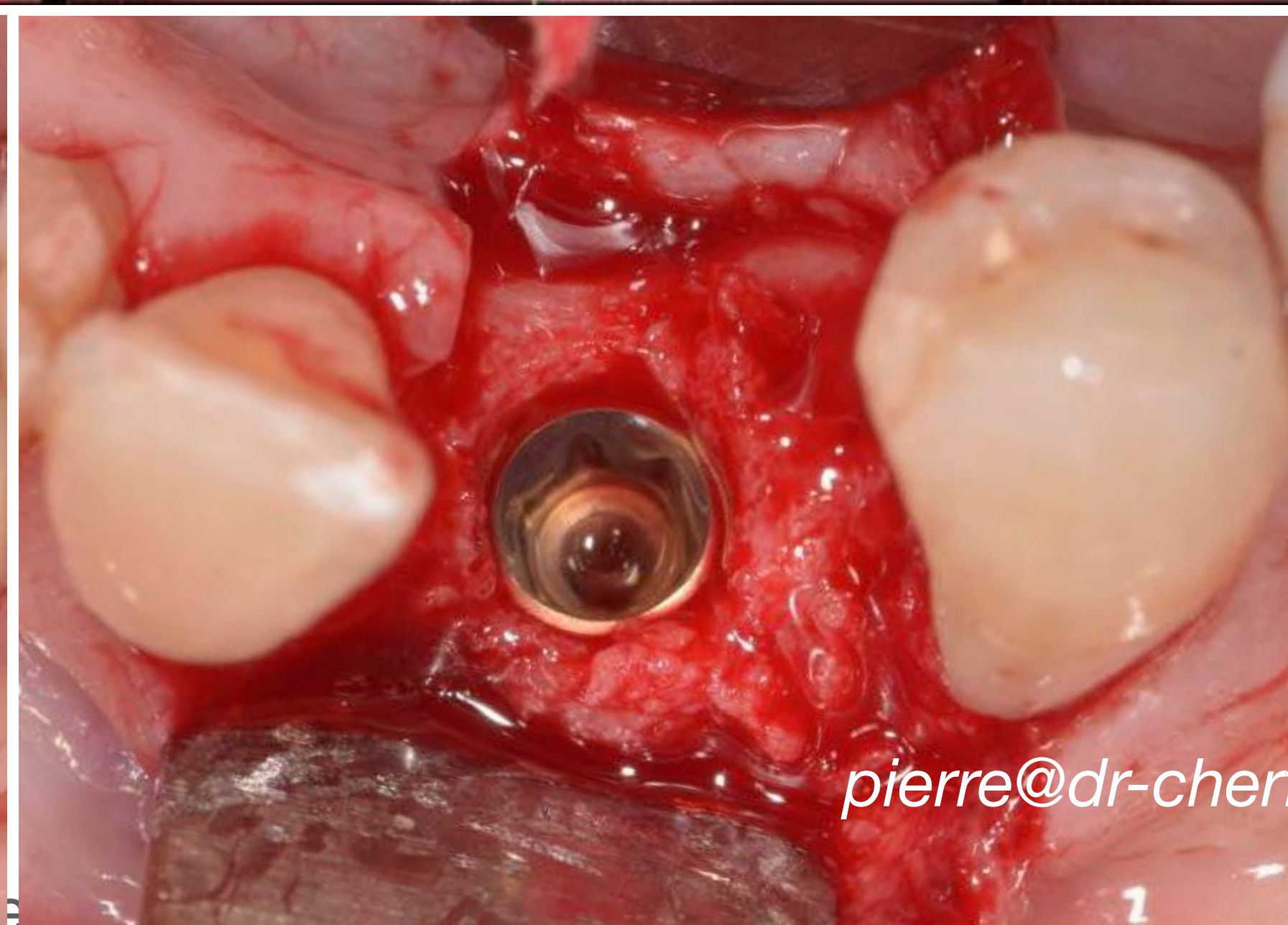
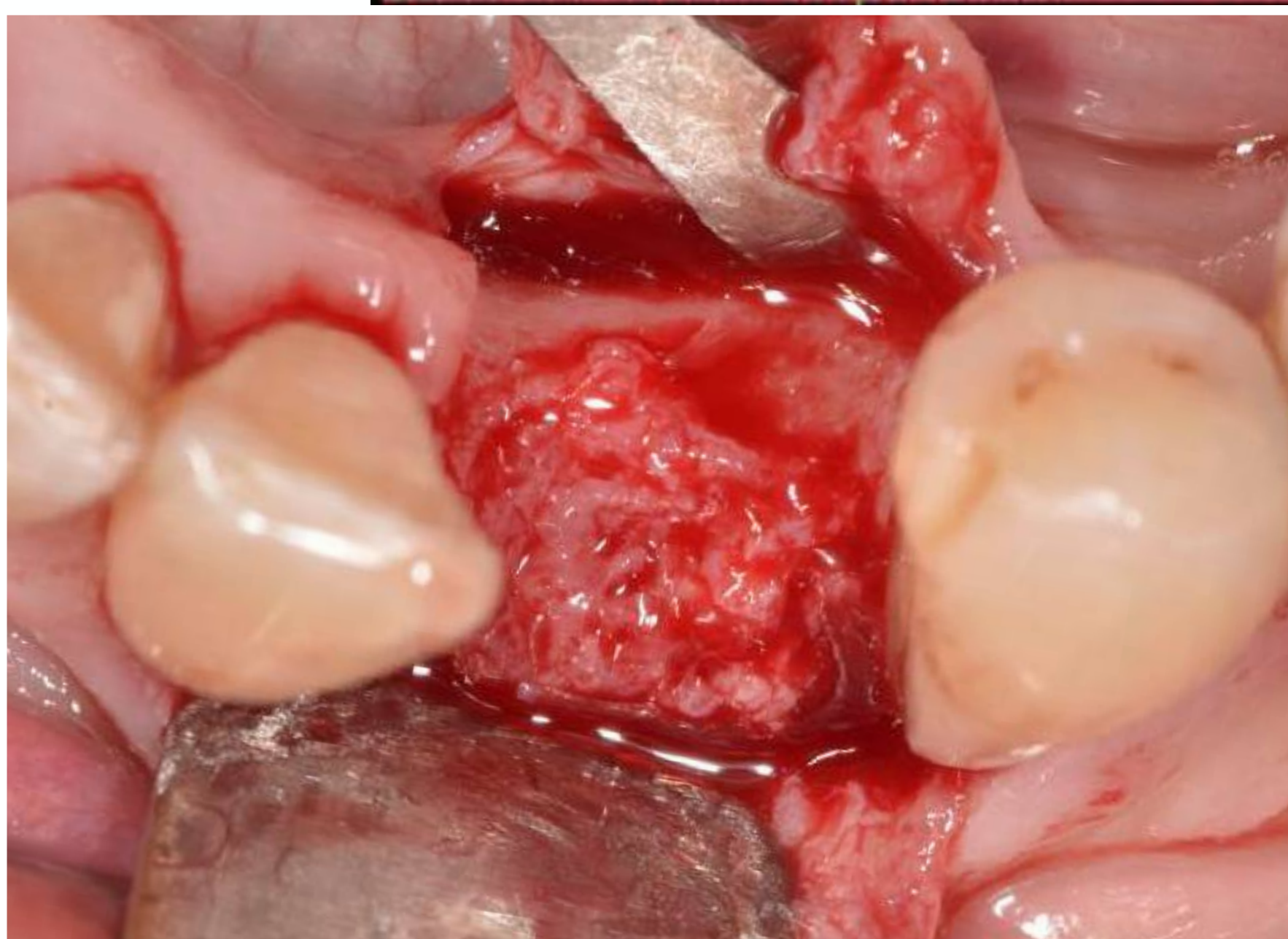
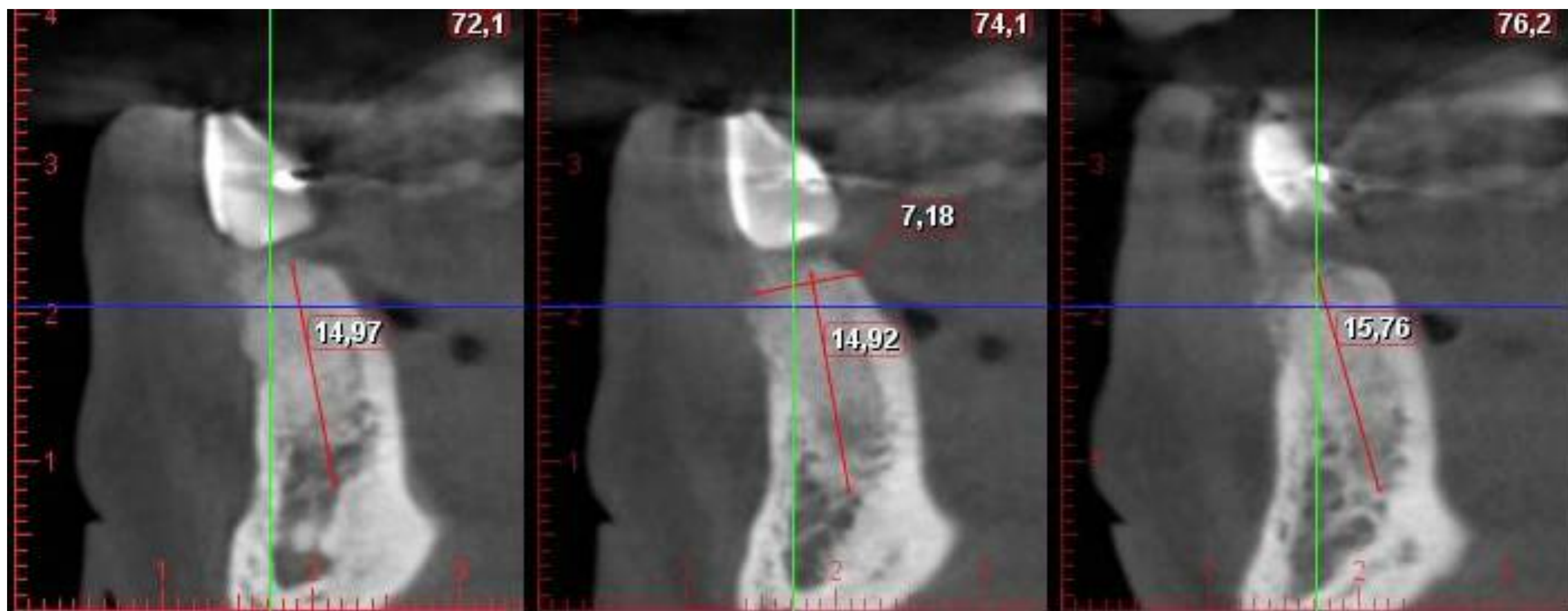


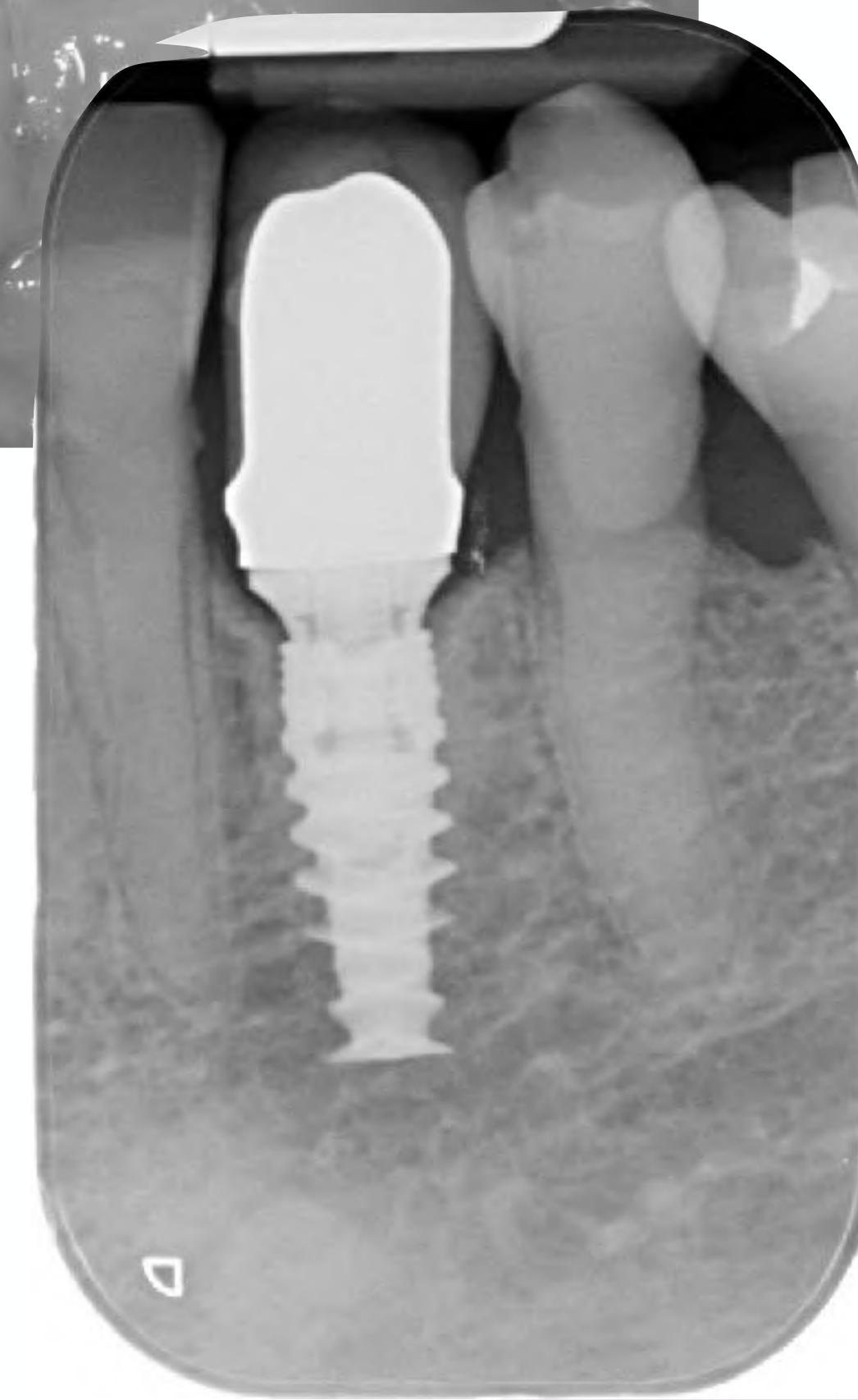
Fig 7 (left) Histologic specimen showing fibroblasts (solid arrowheads) surrounded by connective tissue matrix, with some nCHA granules (open arrowheads) and multinucleated giant cells (arrows). Hematoxylin-eosin staining; original magnification $\times 10$.

Fig 8 (right) At a higher magnification, acute inflammatory cell infiltration of polymorphonuclear granulocytes (open arrows) can be noted. Hematoxylin-eosin staining; original magnification $\times 20$.





pierre@dr-cherfane.com



Prothèse Dr Ludovic ACHE, Paris

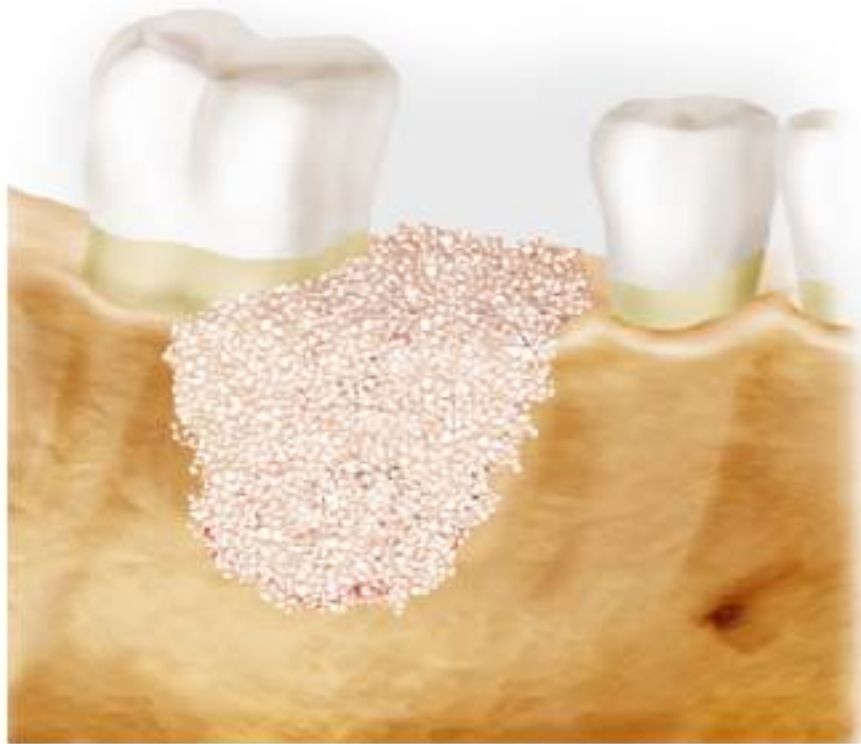
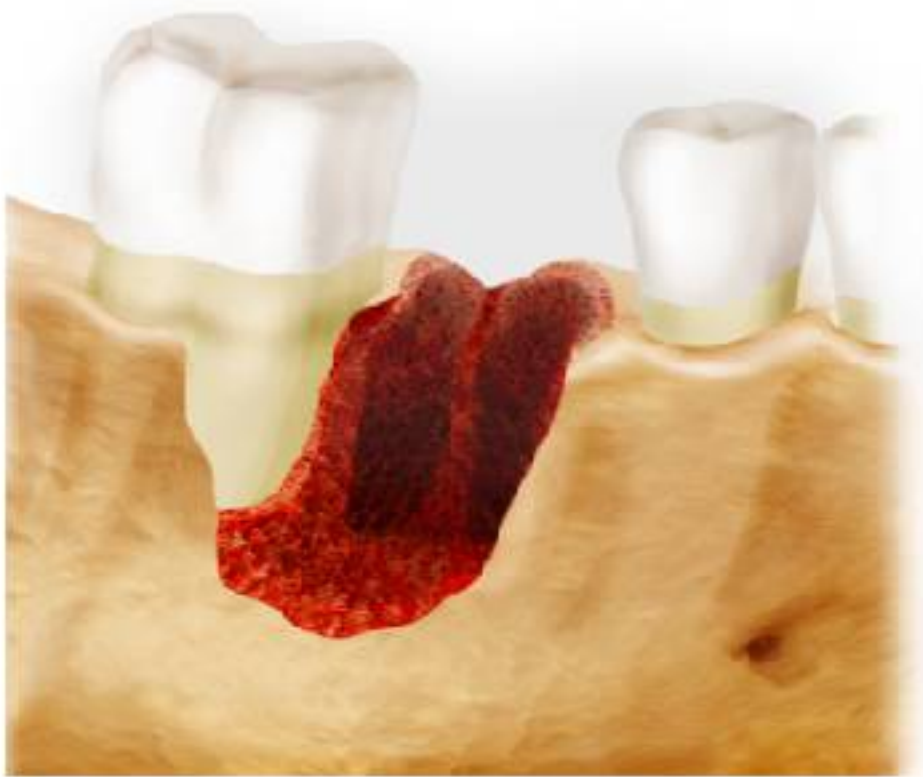
Alveolar ridge preservation using a non-resorbable membrane: randomized clinical trial with biomolecular analysis.
Mandarino D, Luz D, Moraschini V, Rodrigues DM, Barboza ESP.
Int J Oral Maxillofac Surg. 2018 Nov;47(11):1465-1473.

Less resorption and gain of keratinized tissue

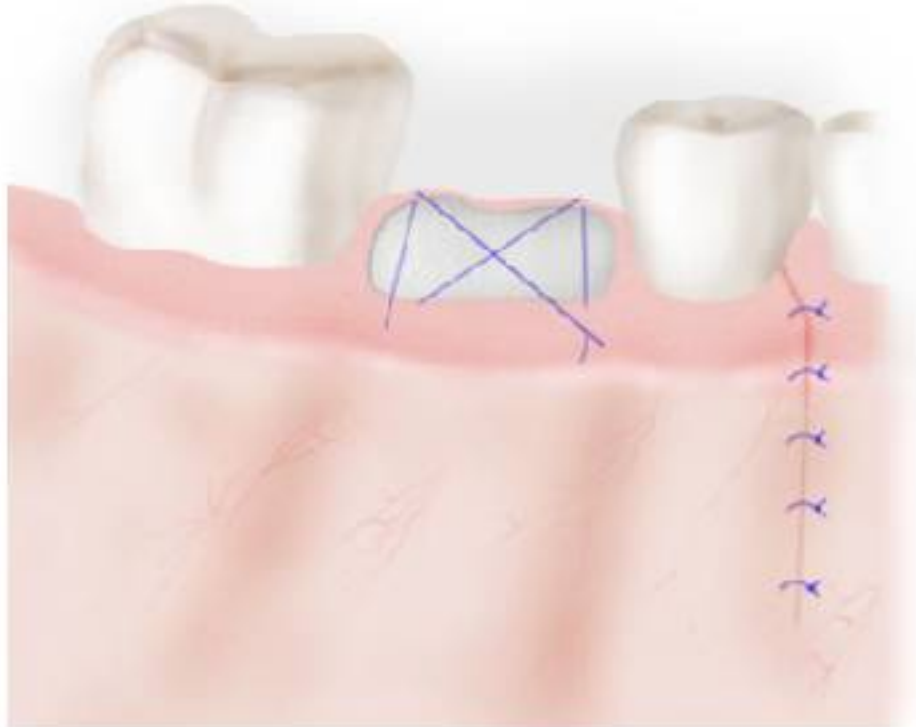
Dr Pierre Cherfane

pierre@dr-cherfane.com

DEFECT type 5

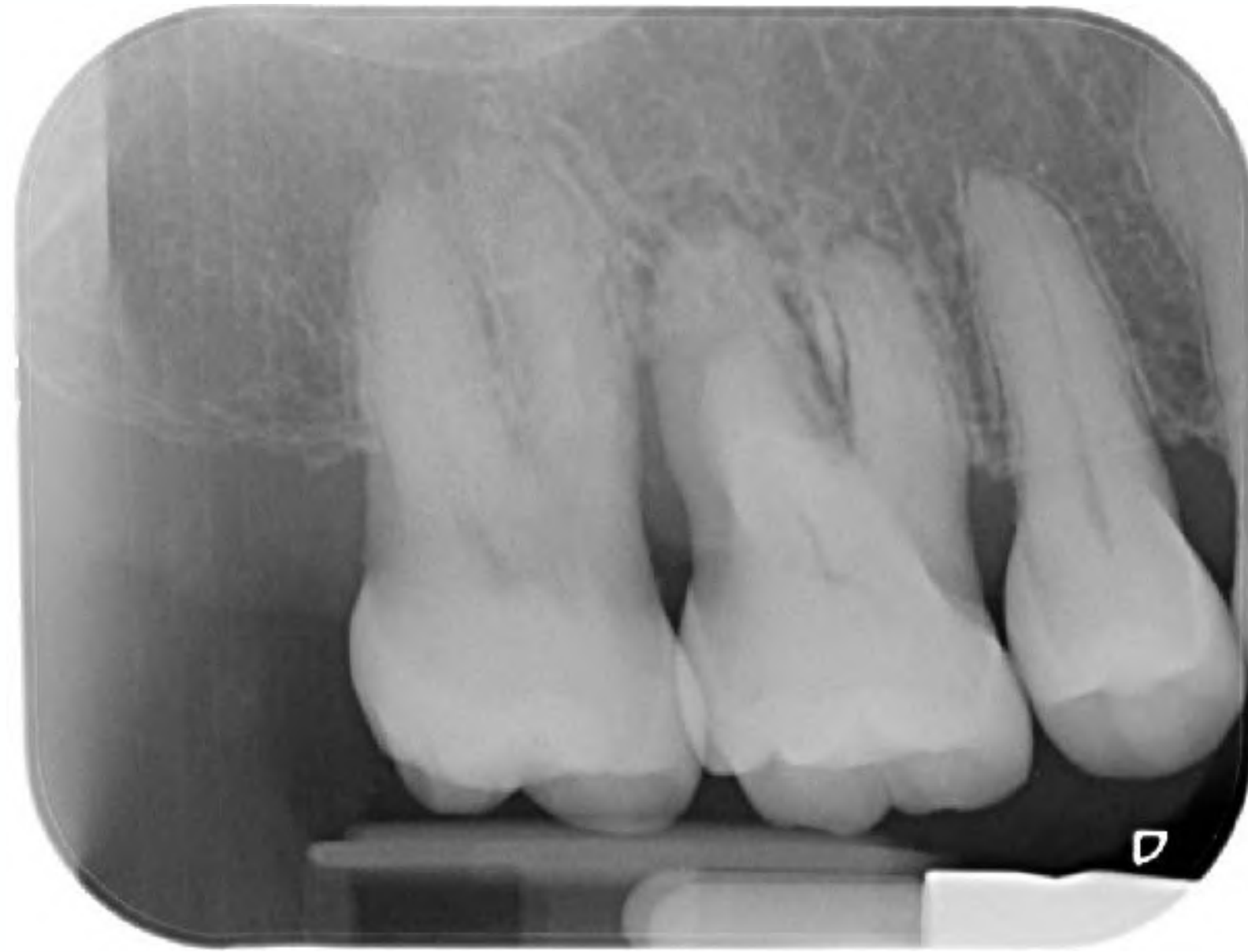


Membrane non résorbable



Membrane non résorbable





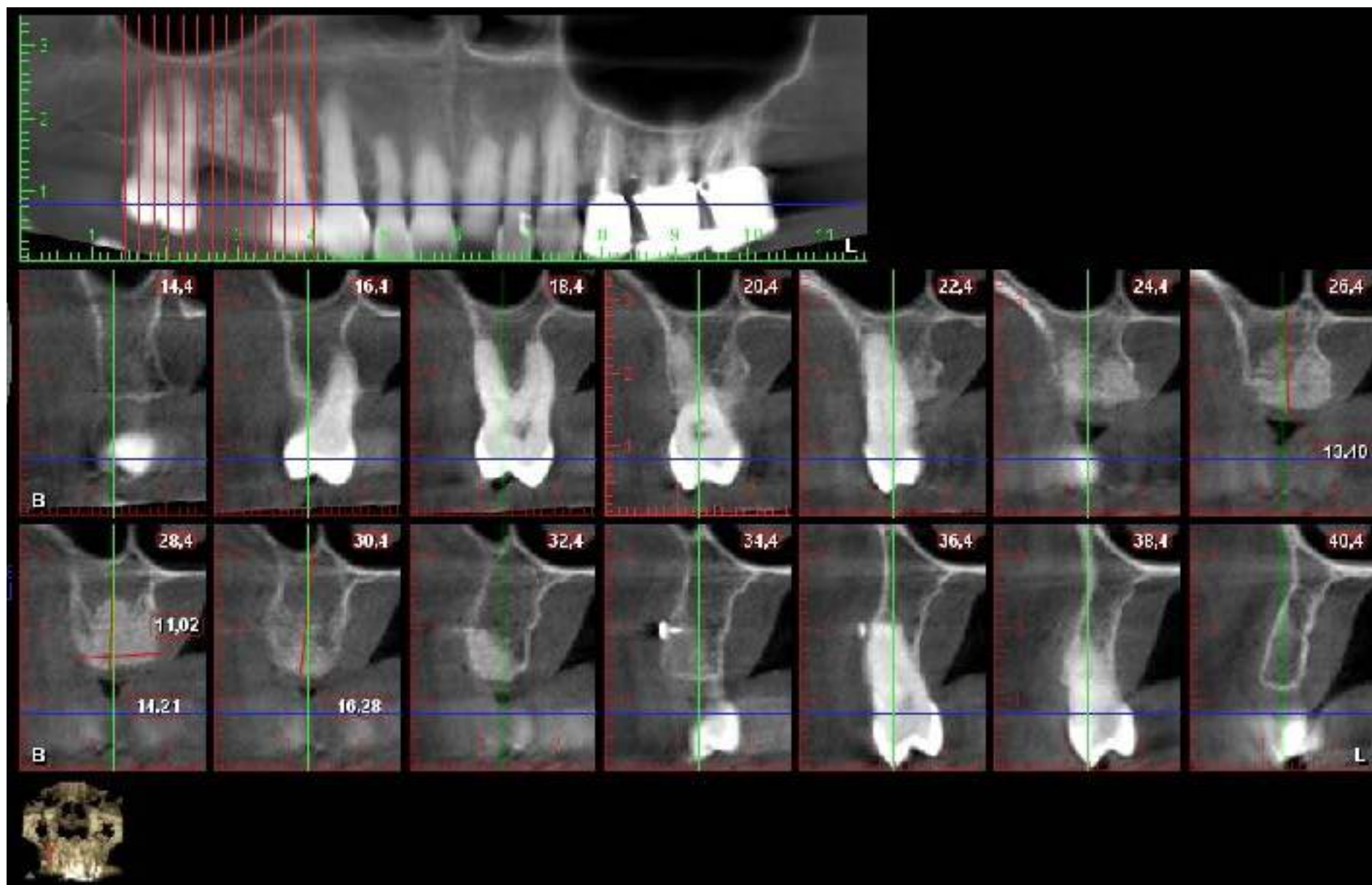
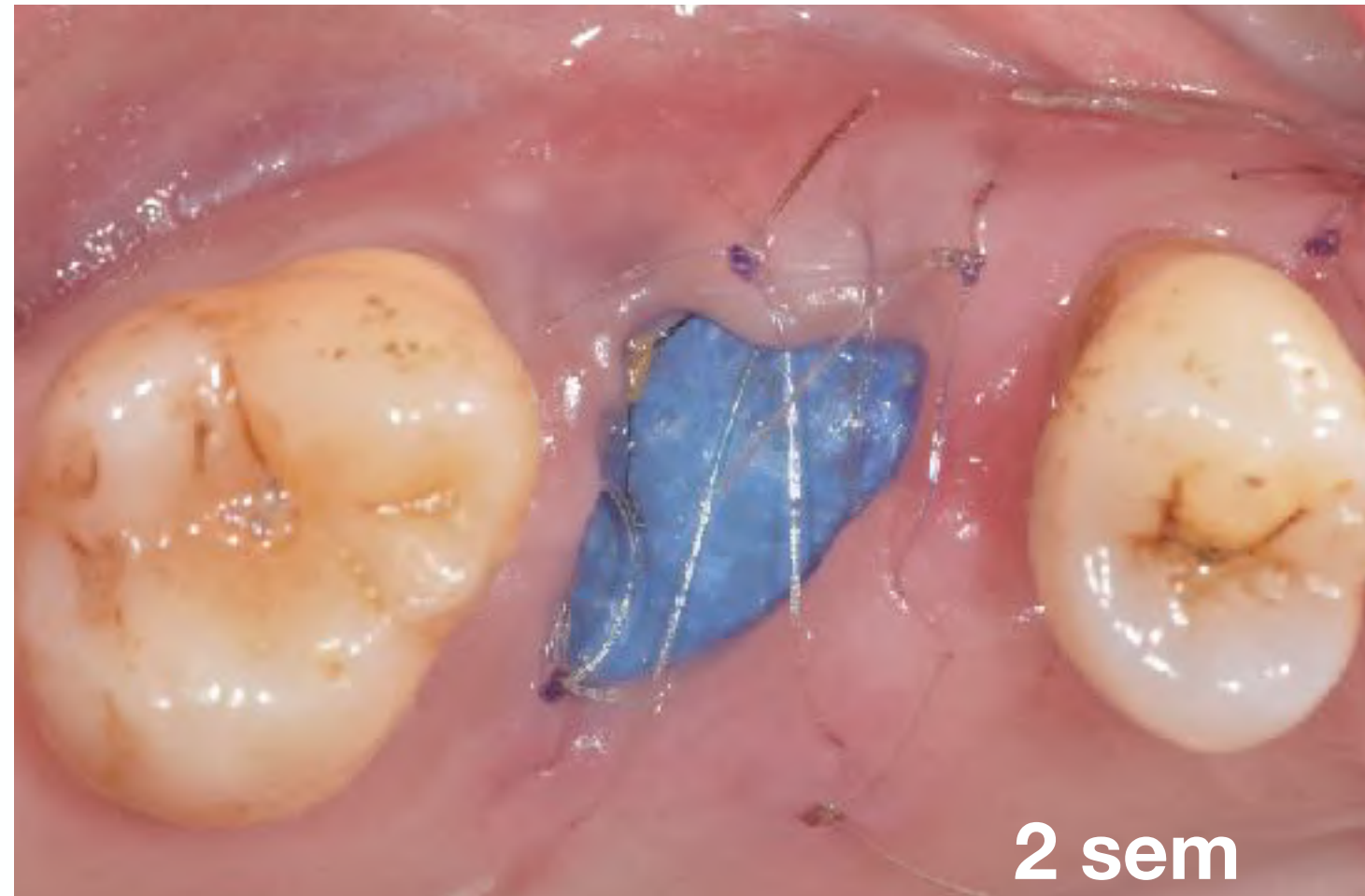
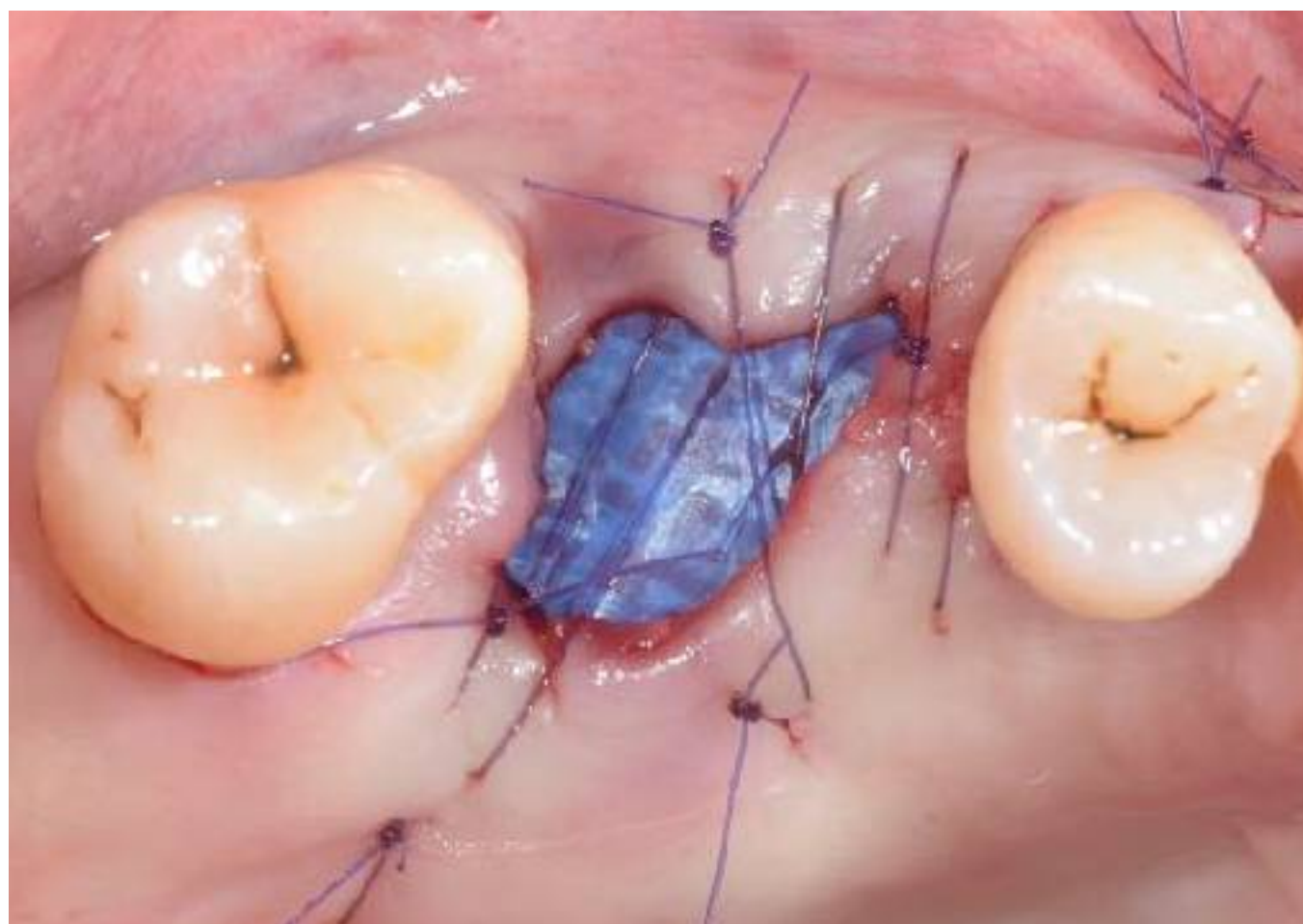
60 years old female, osteoporosis, Raloxifen, PST

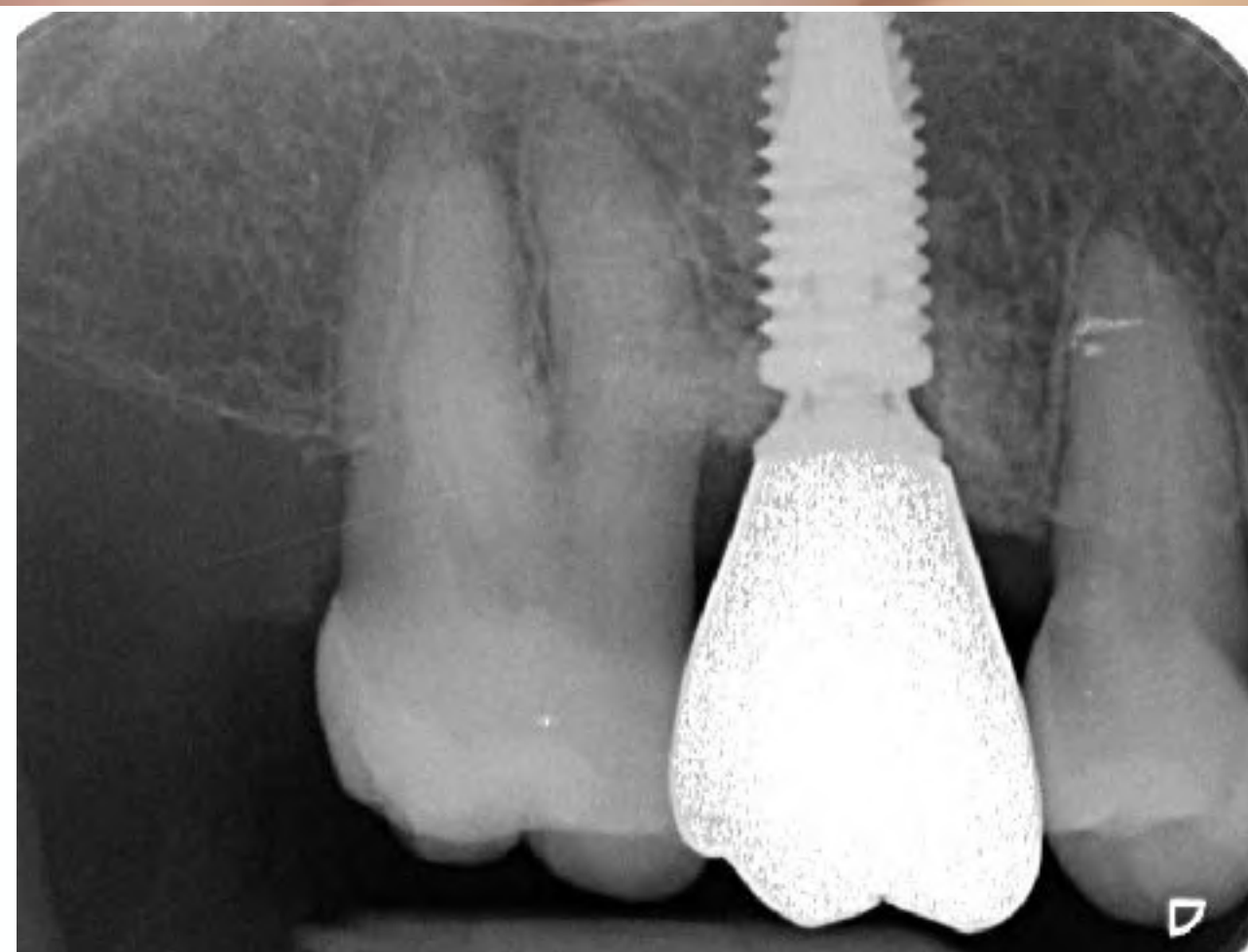




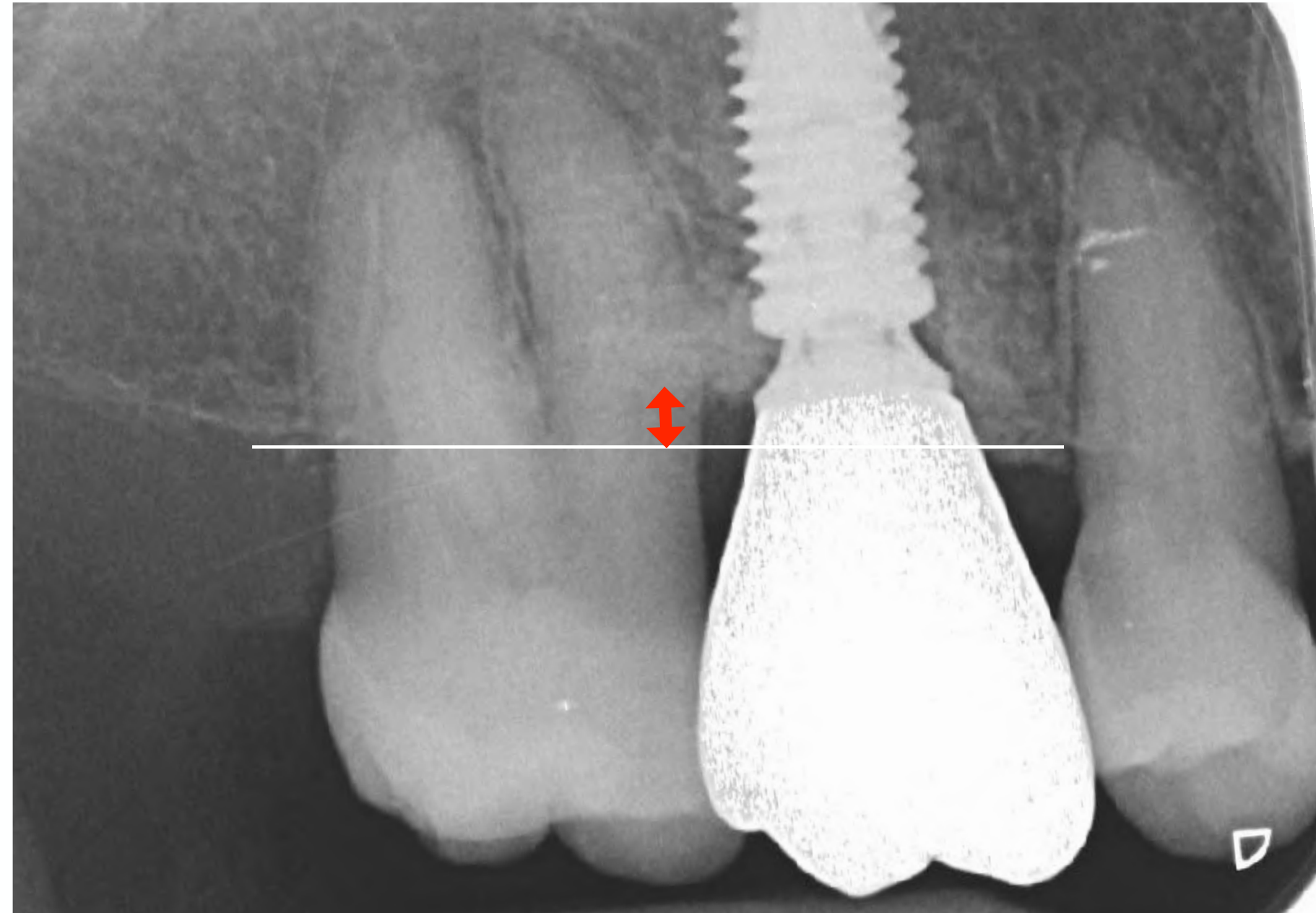
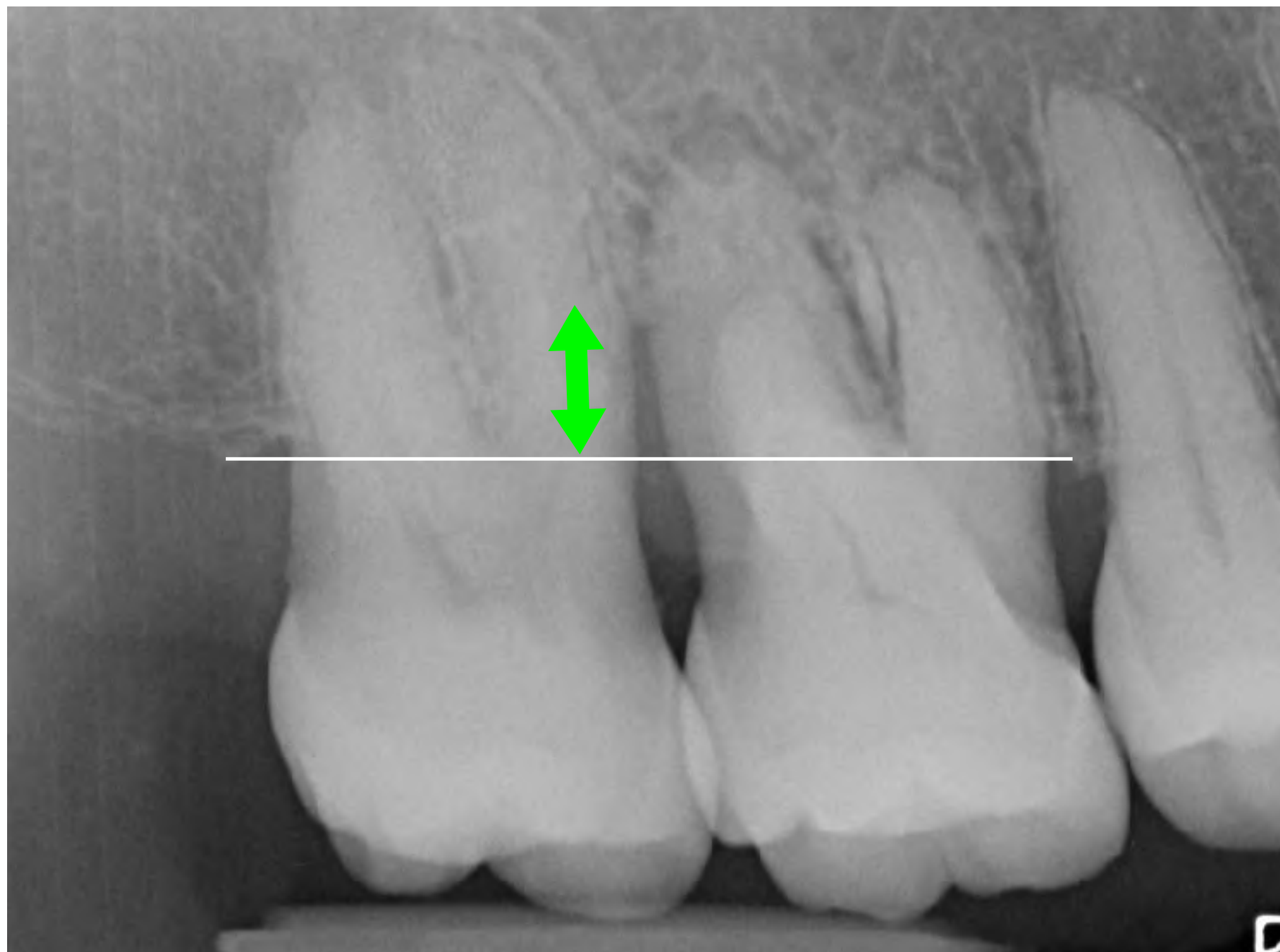
Socket wall inspection = Type 5 defect

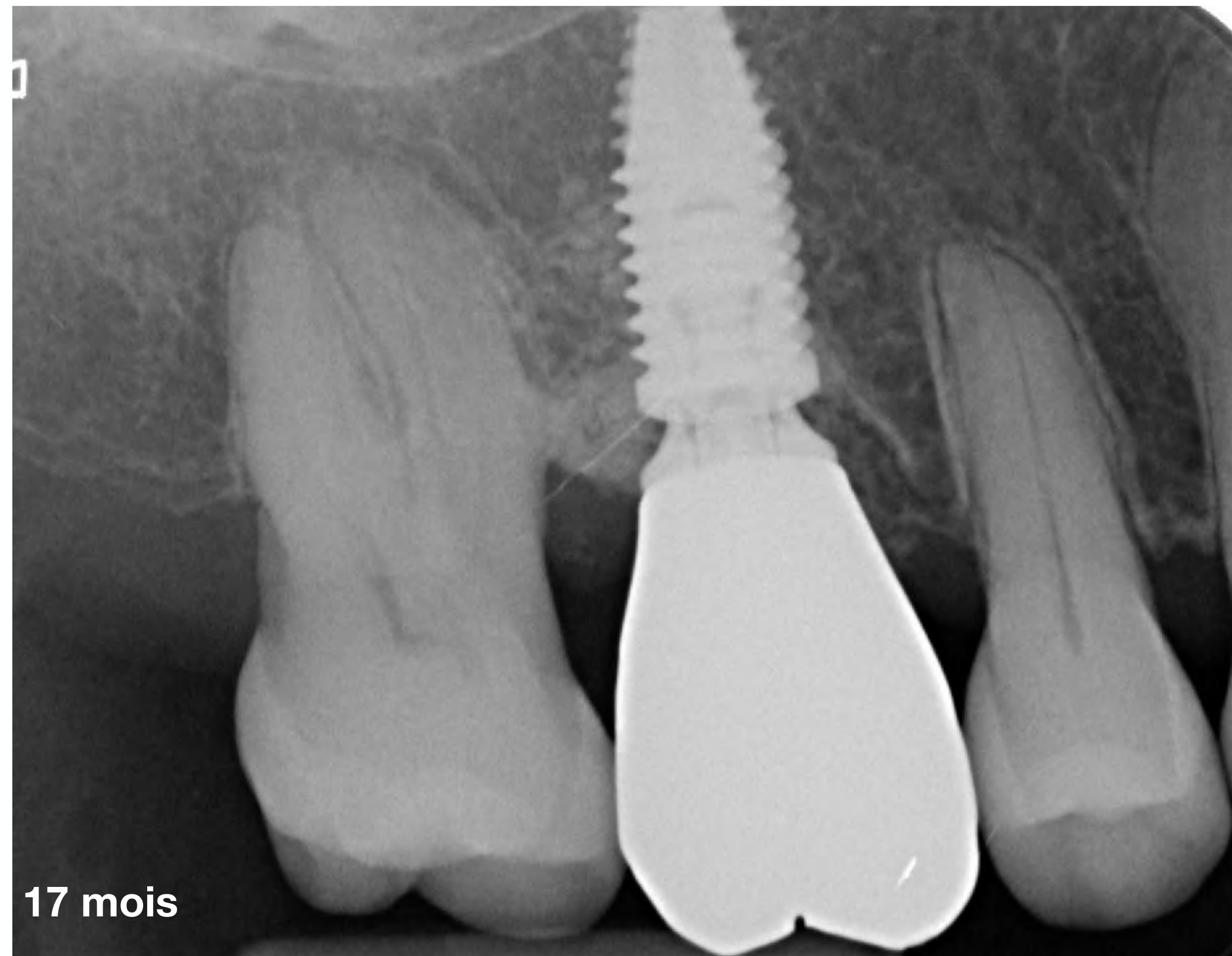
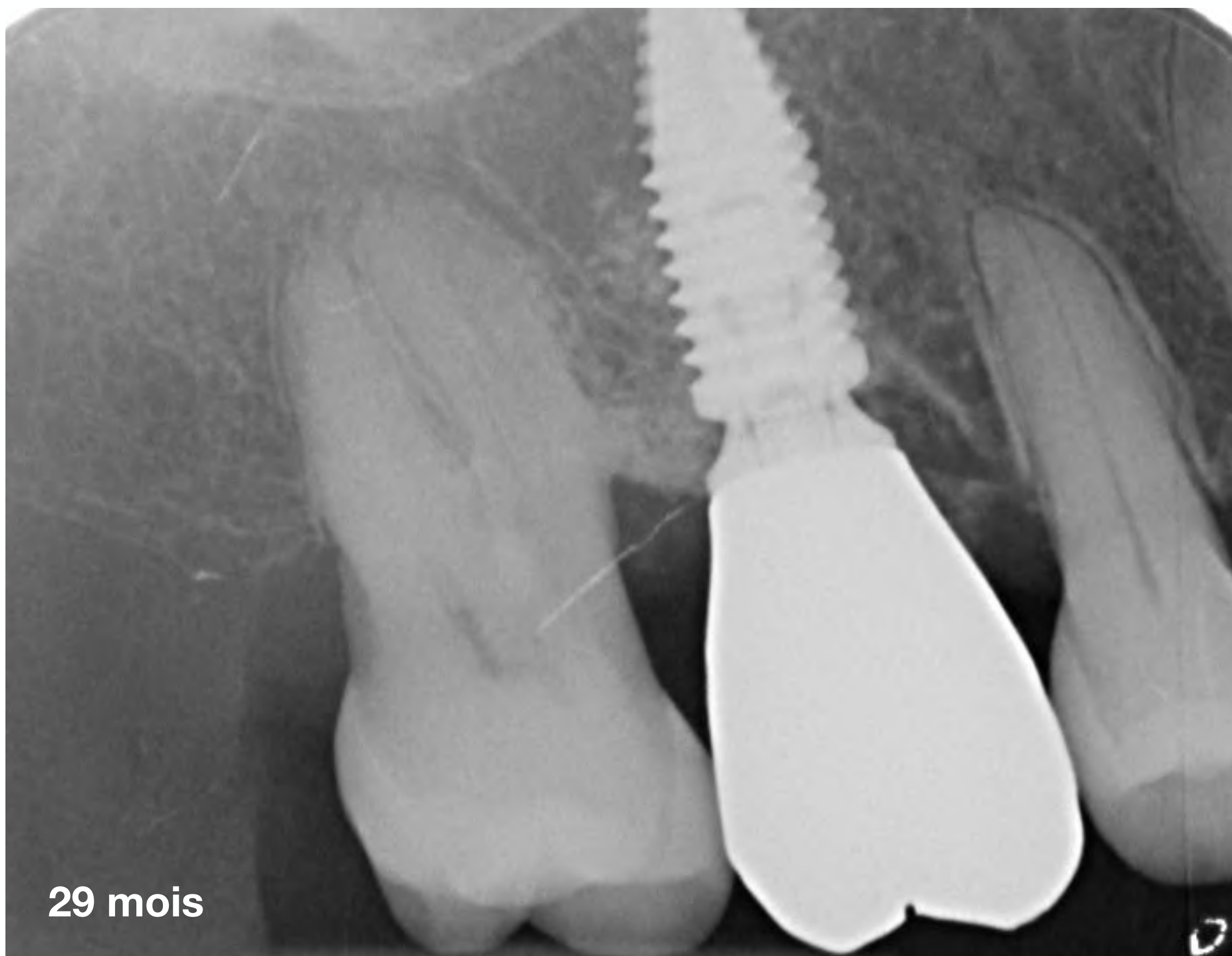






Dr Olivier VIDAL, Issy-les-moulineaux
Dr Pierre Cherfane pierre@dr-cherfane.com

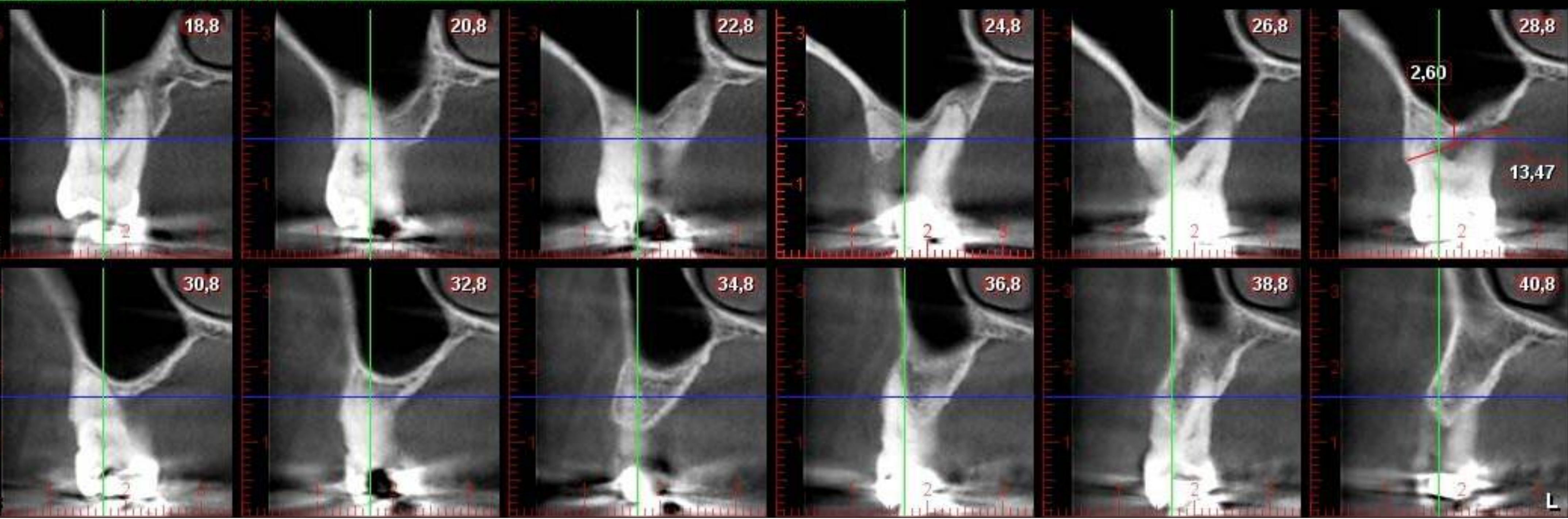
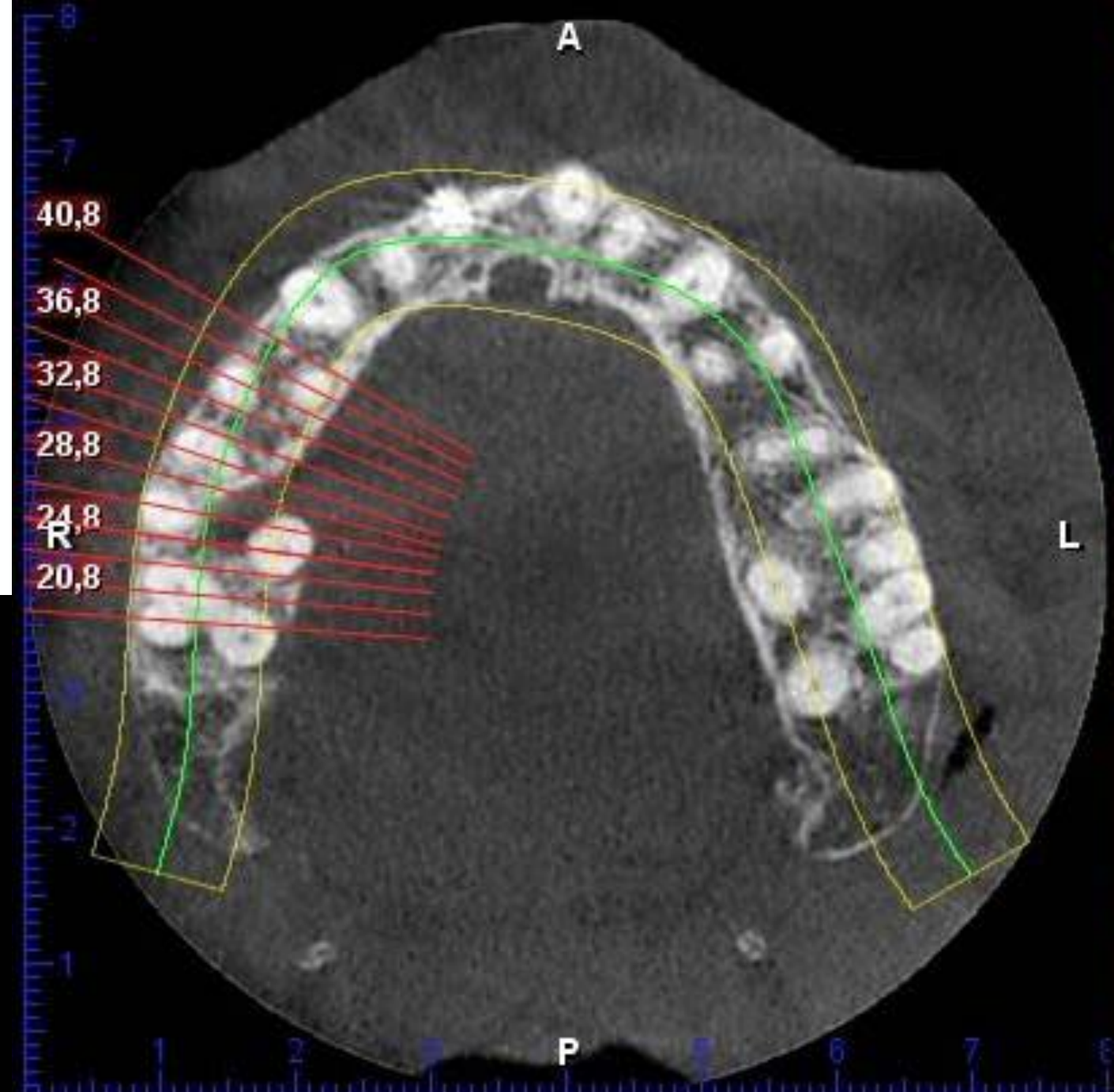
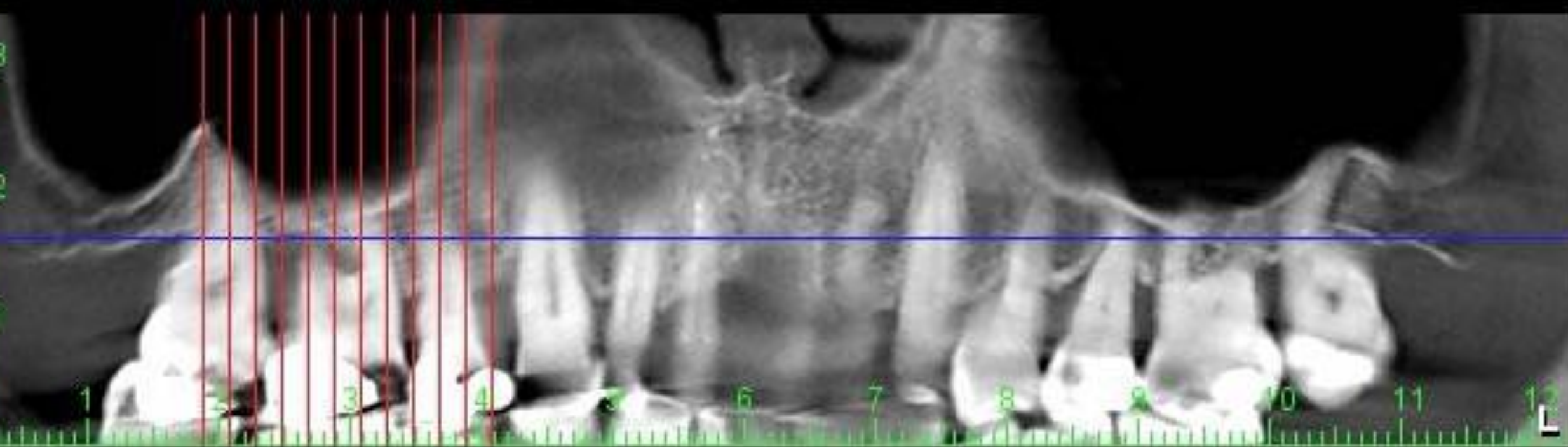


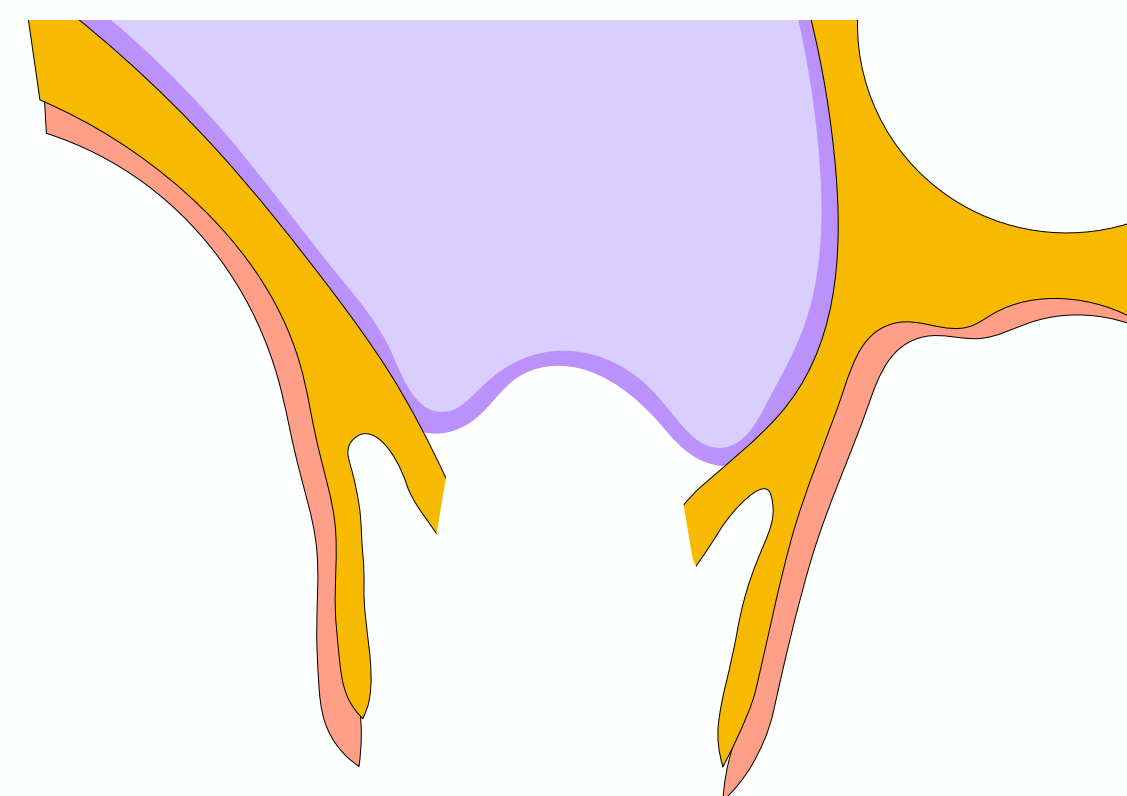
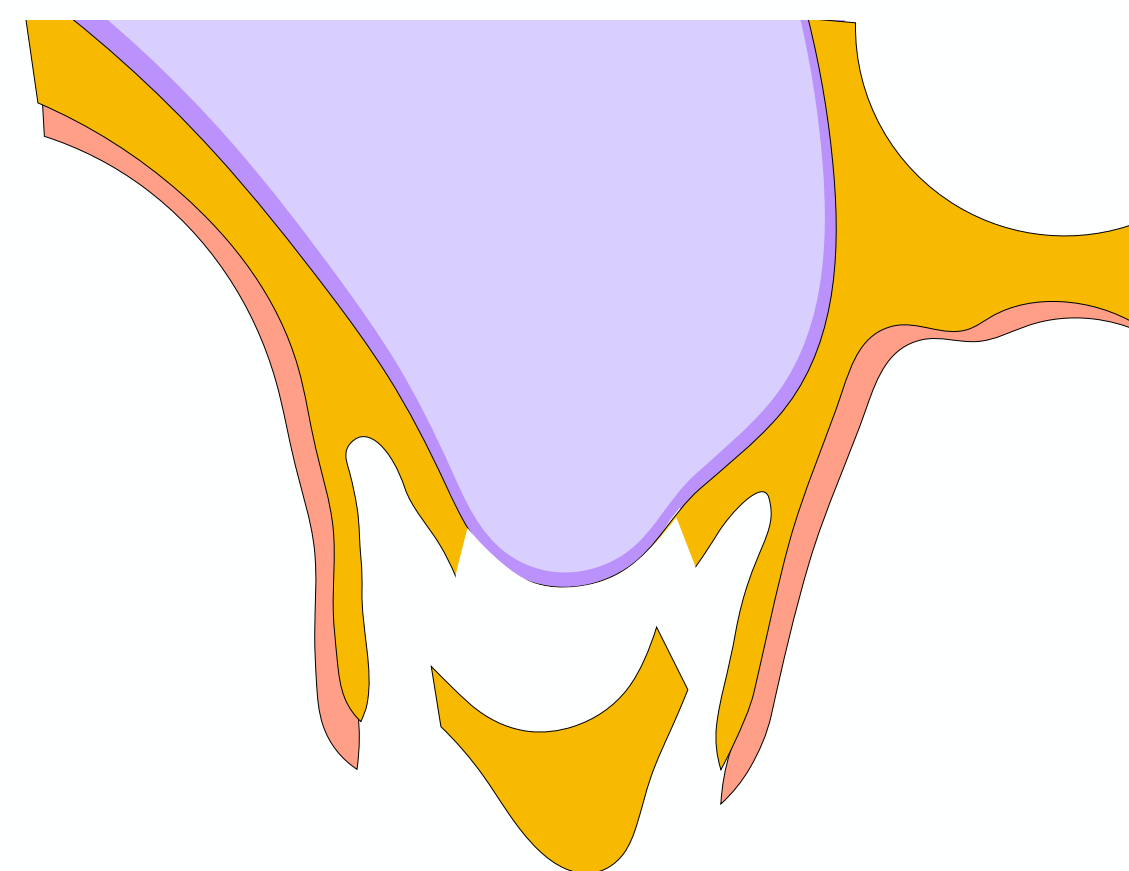
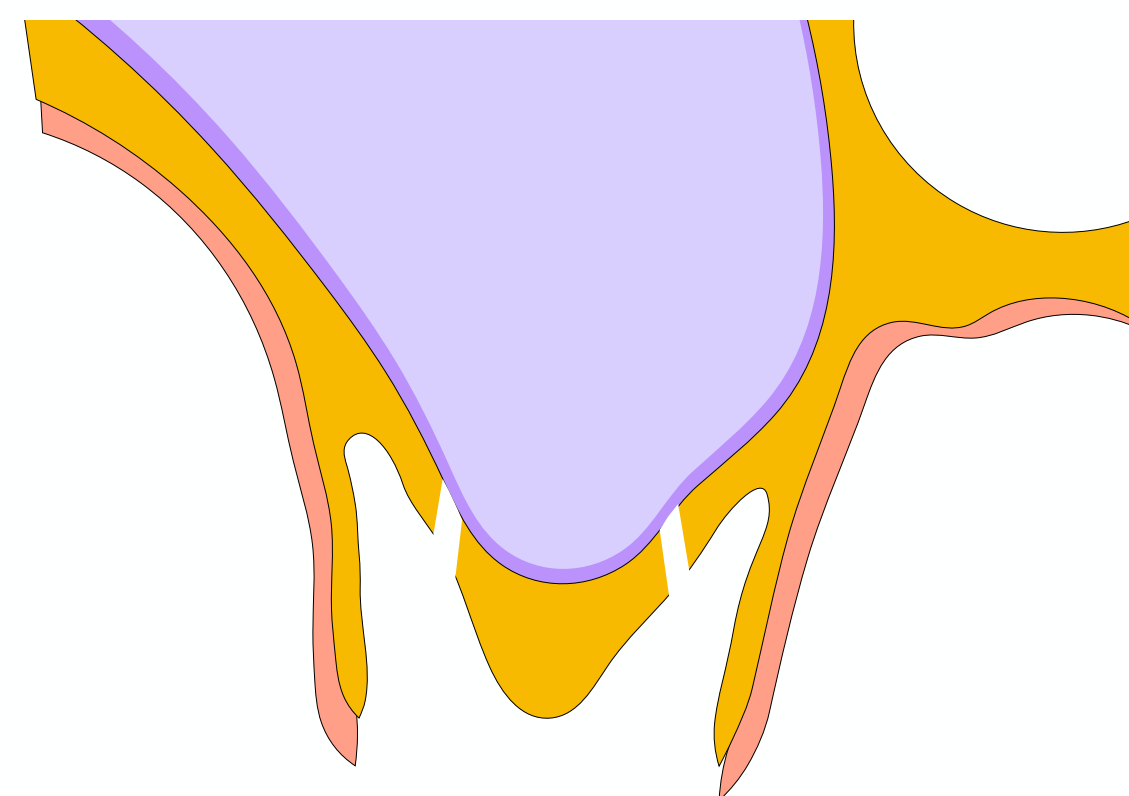
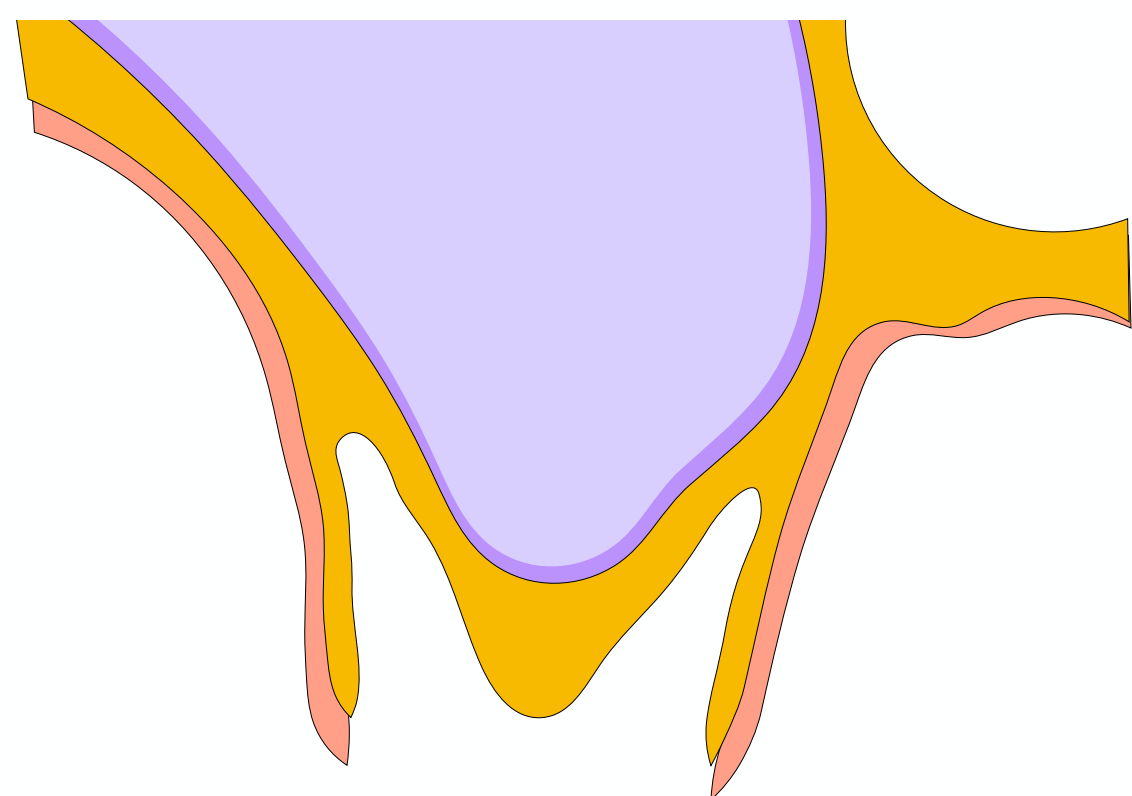




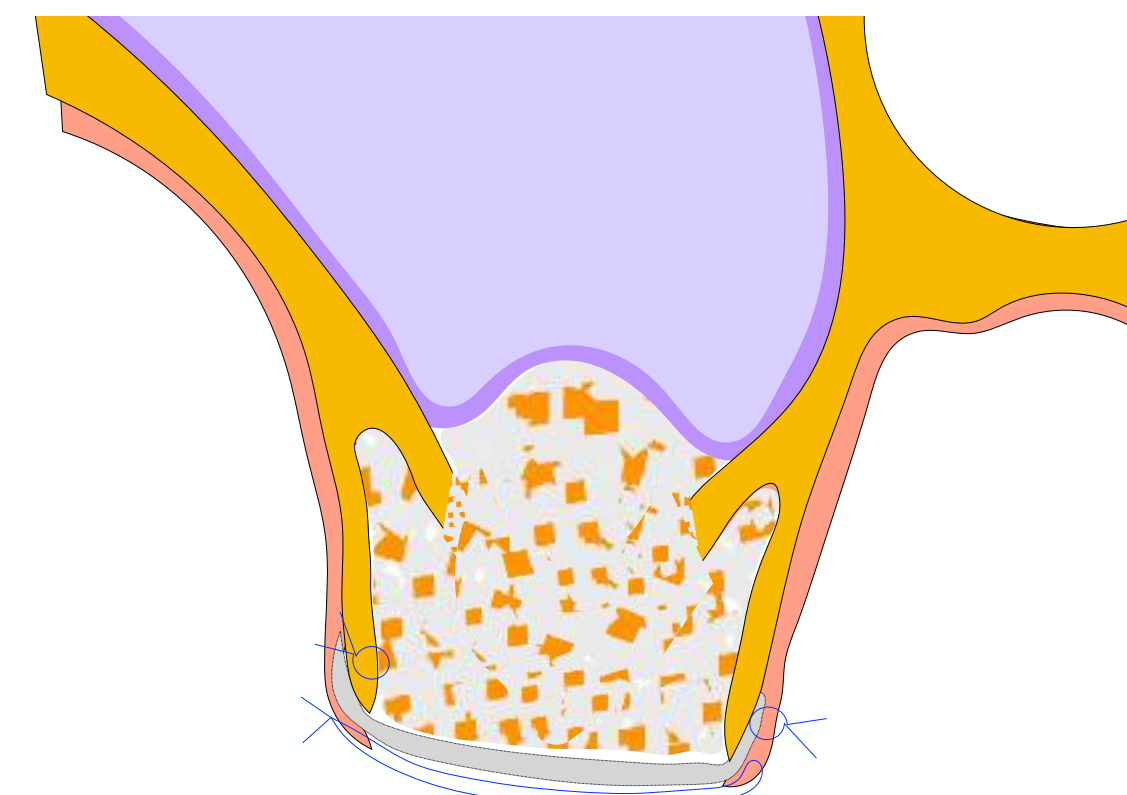
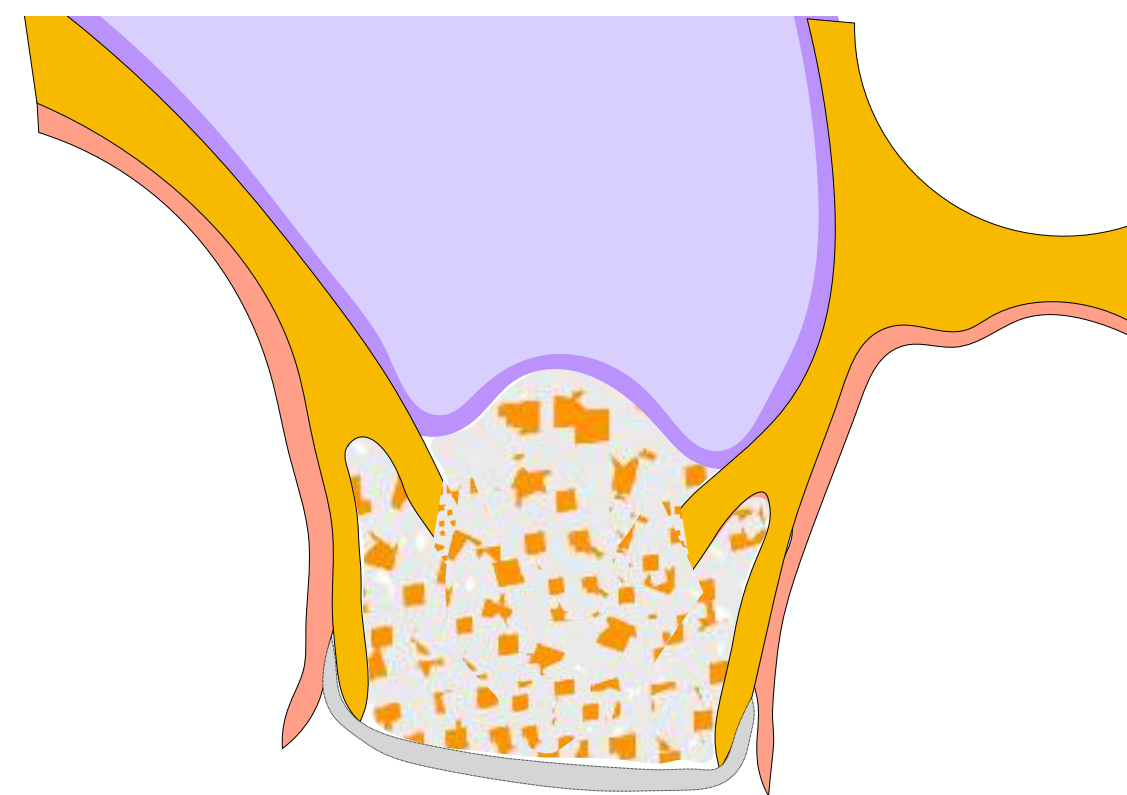
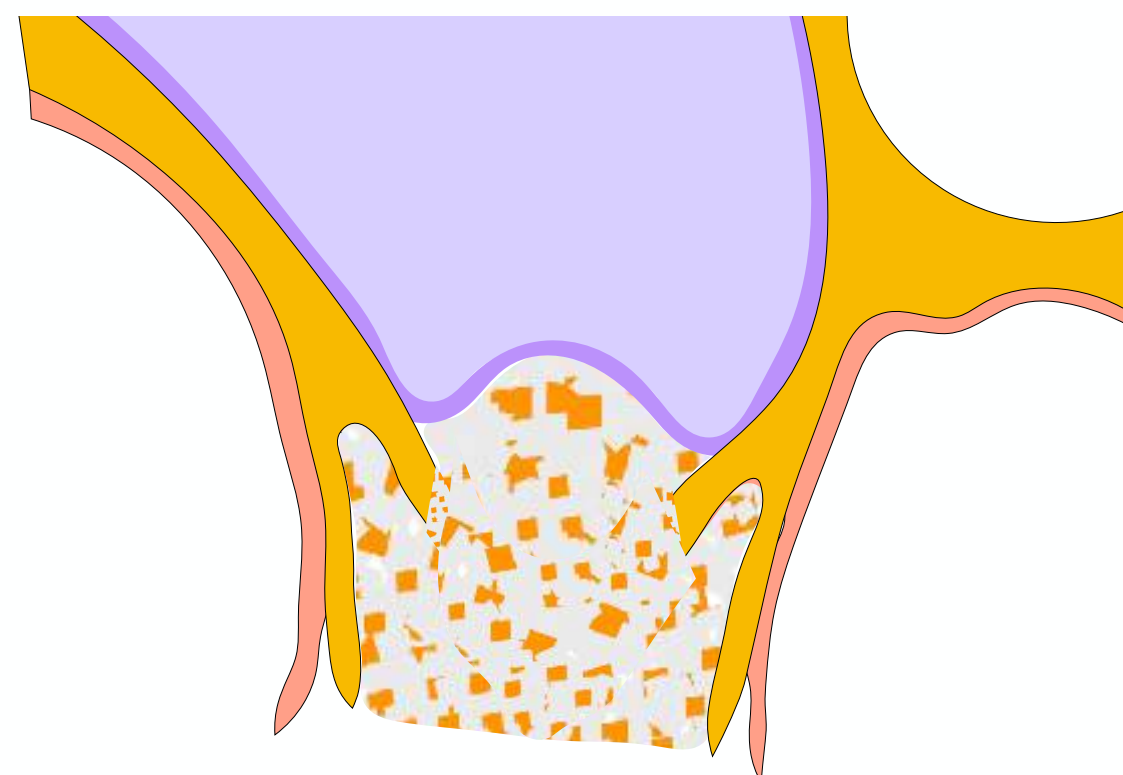
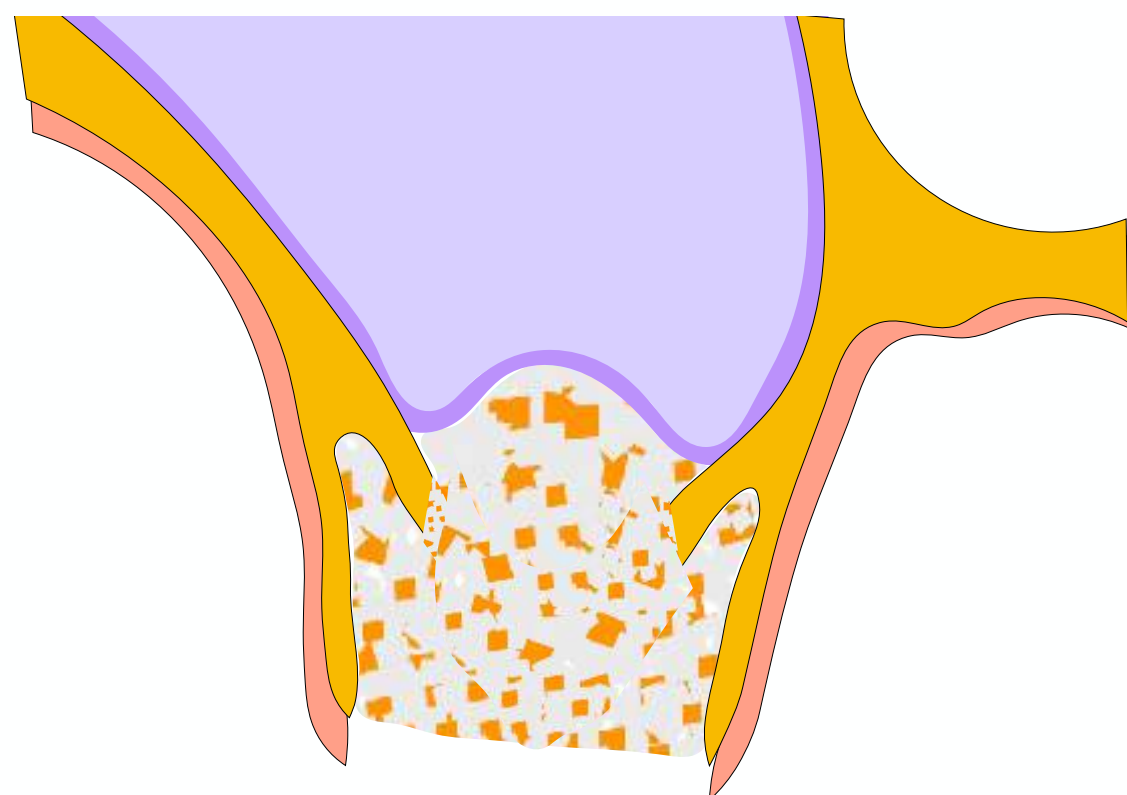
66 old years female, Raloxifen, SPT,
former smoker

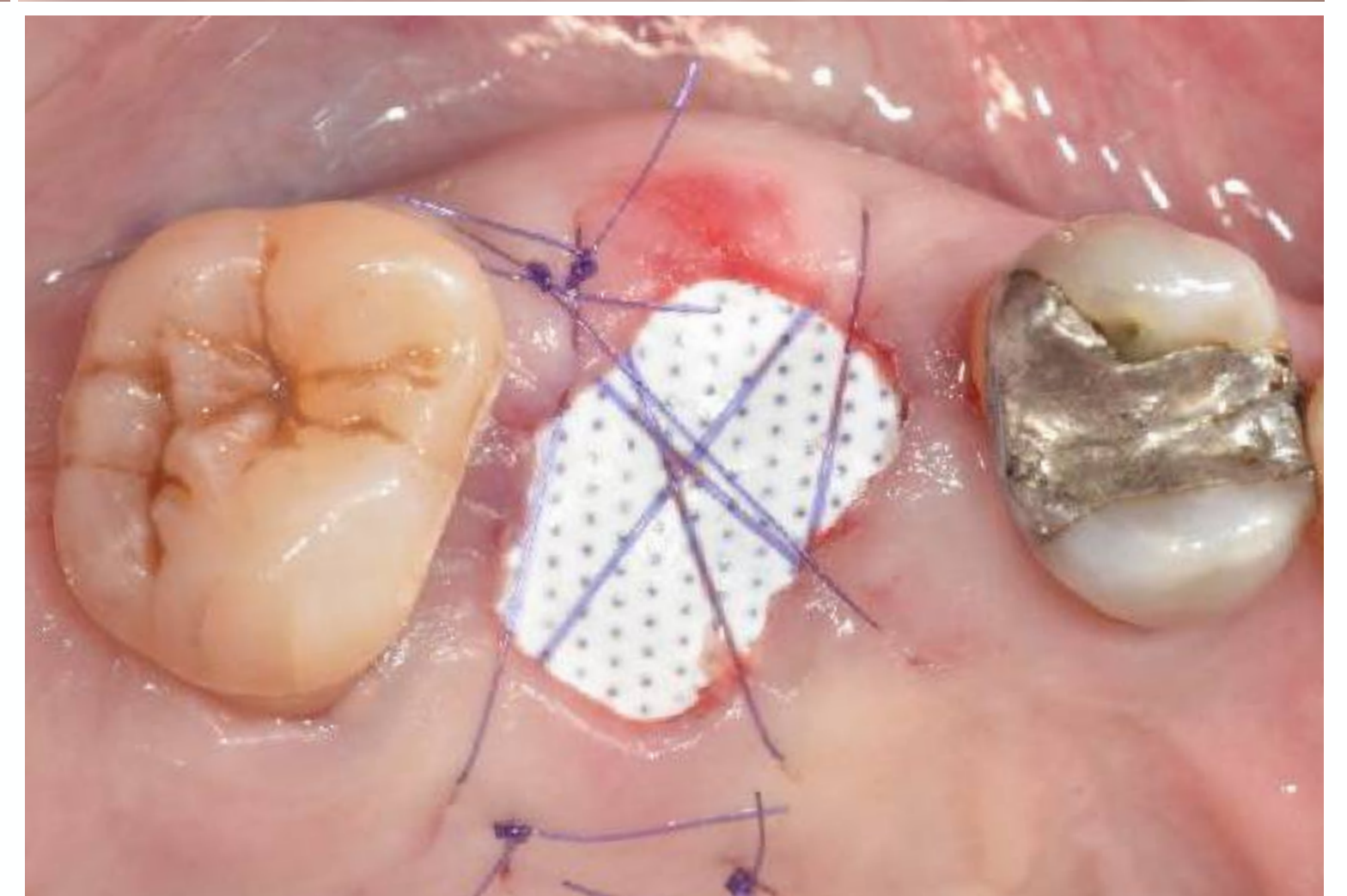


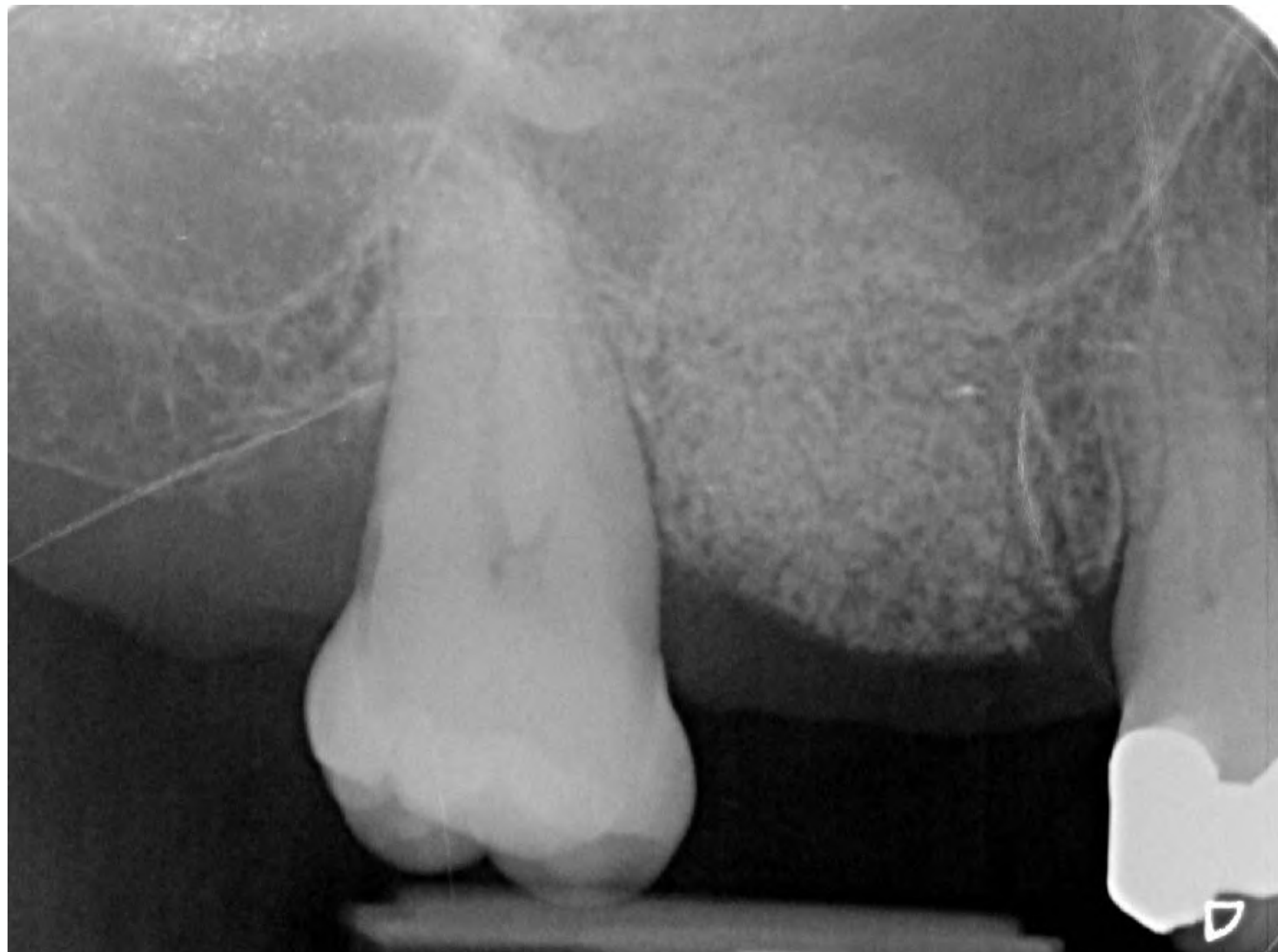


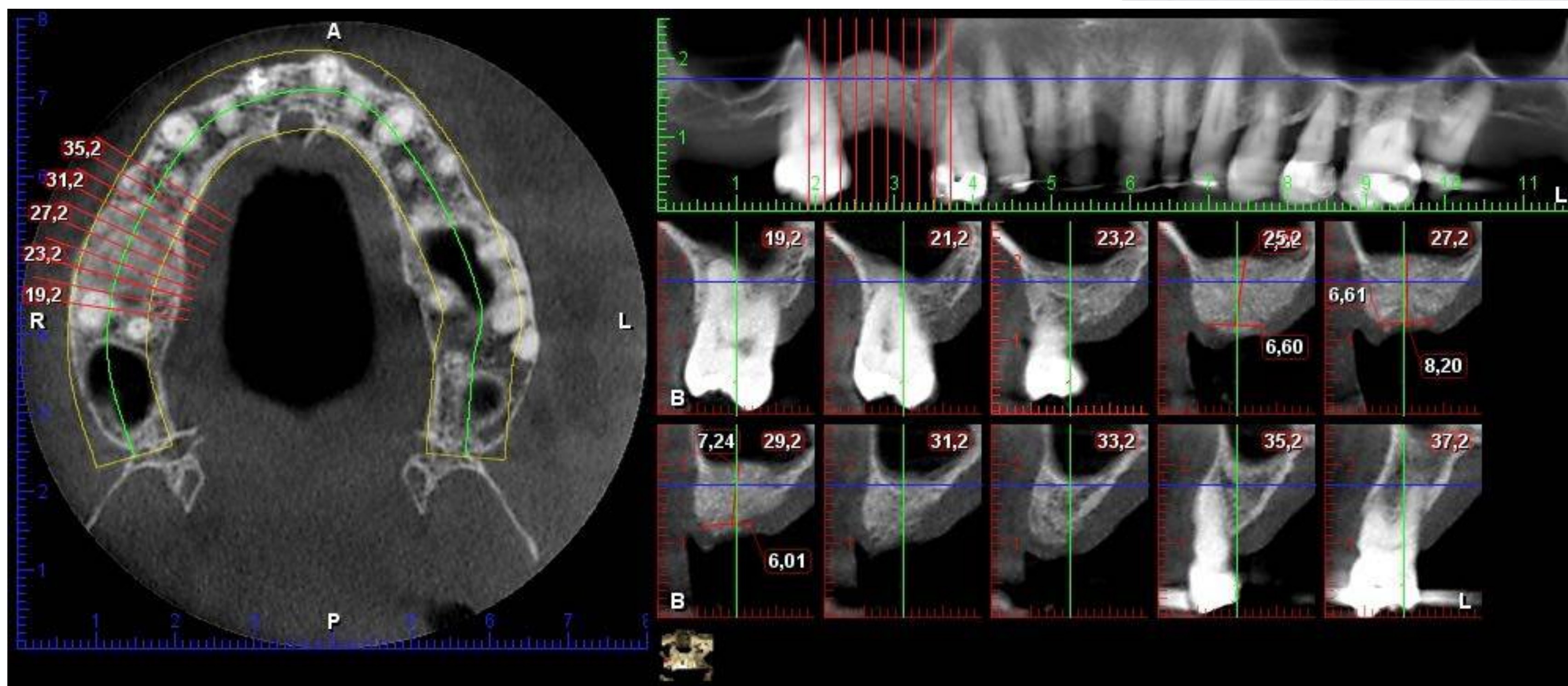


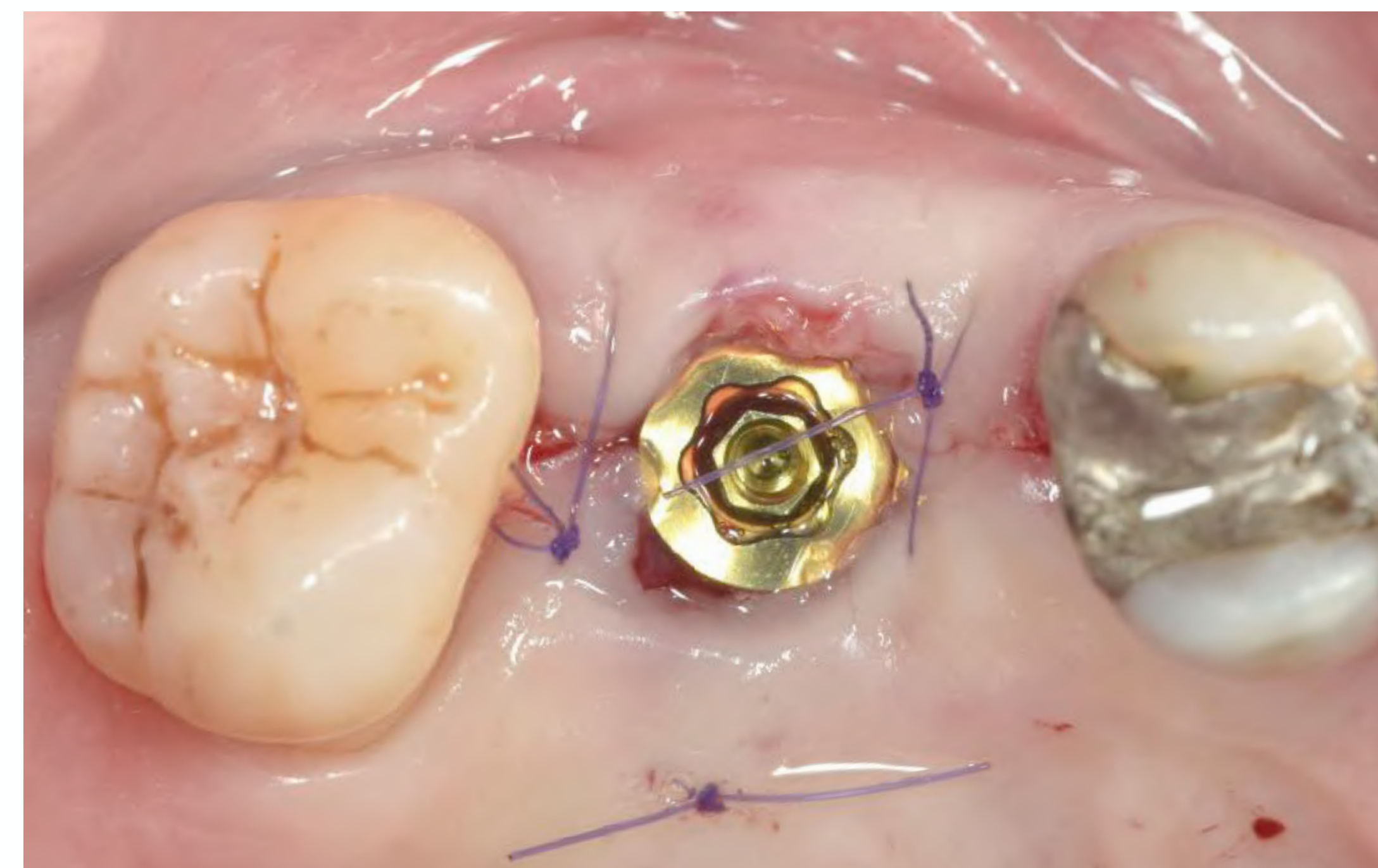
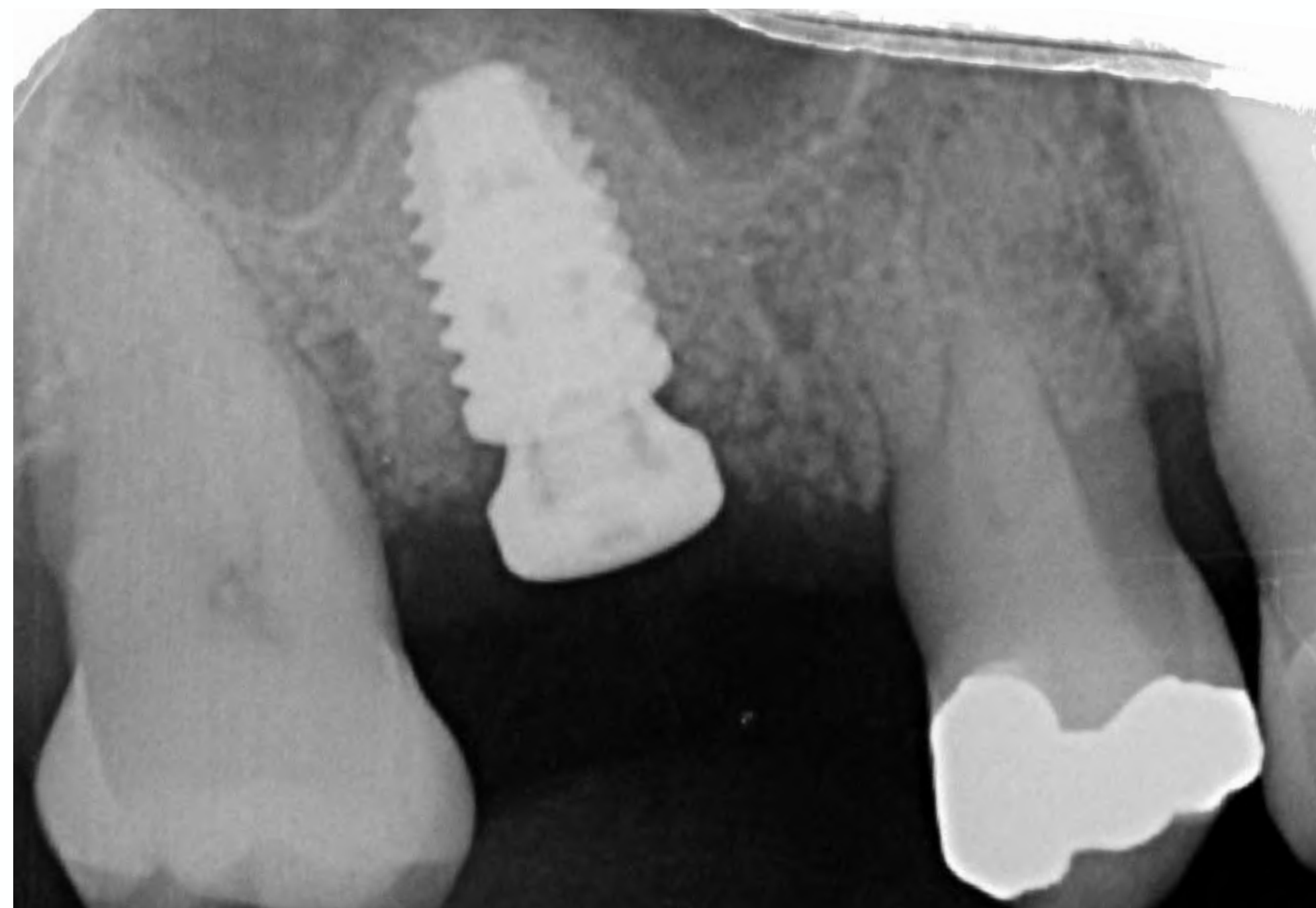
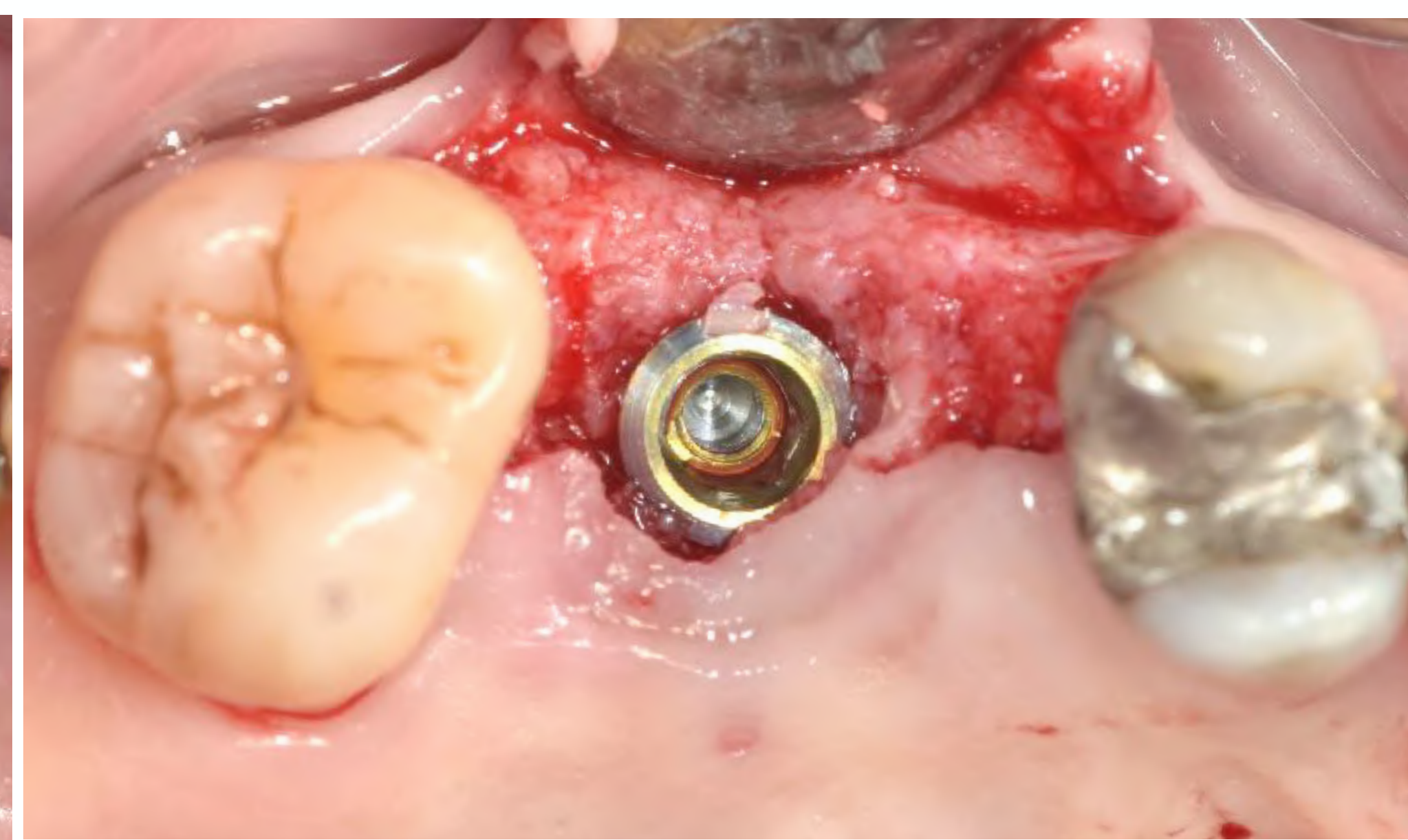
Trans Alveolar Sinus Augmentation (TASA)





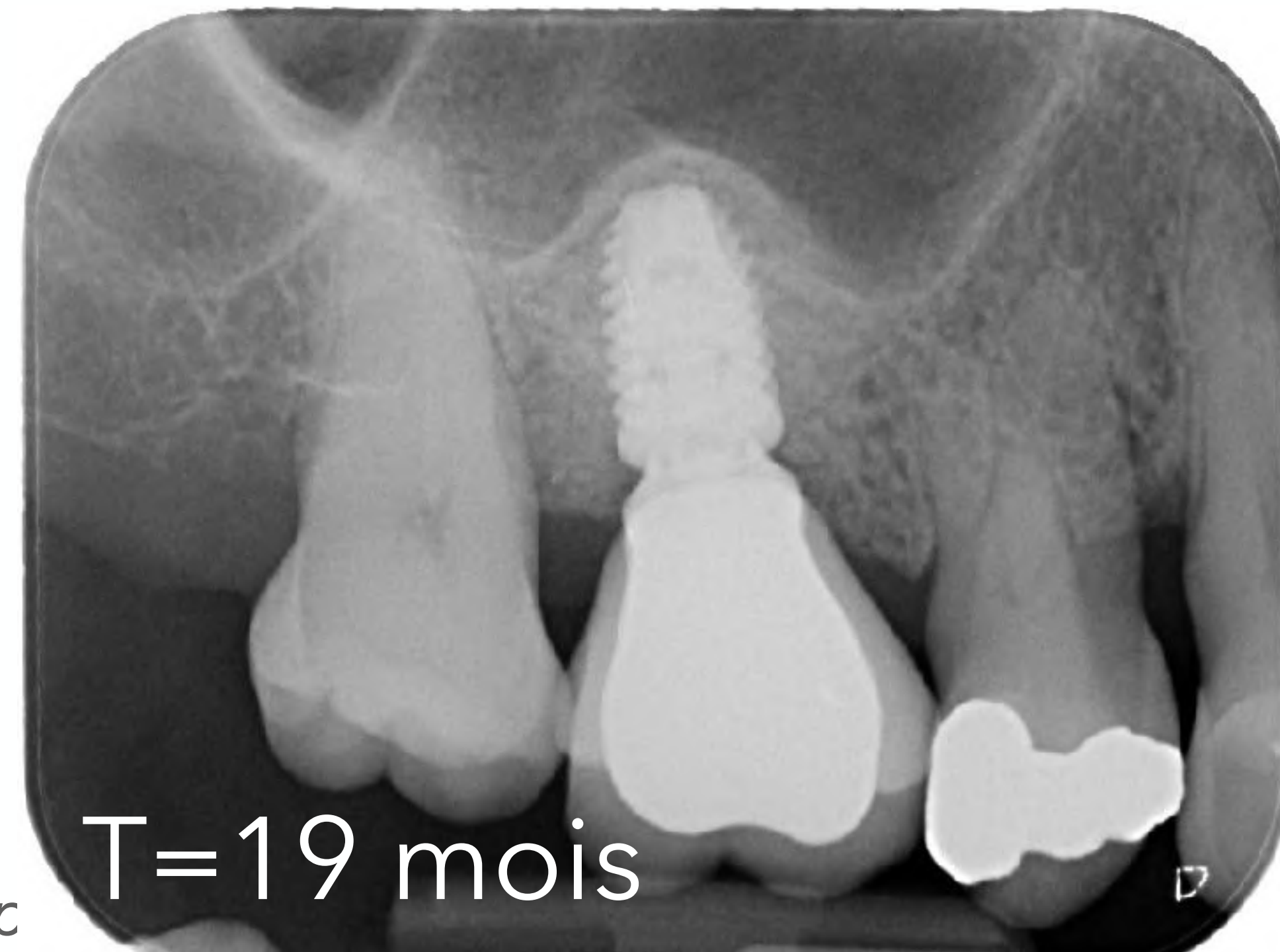
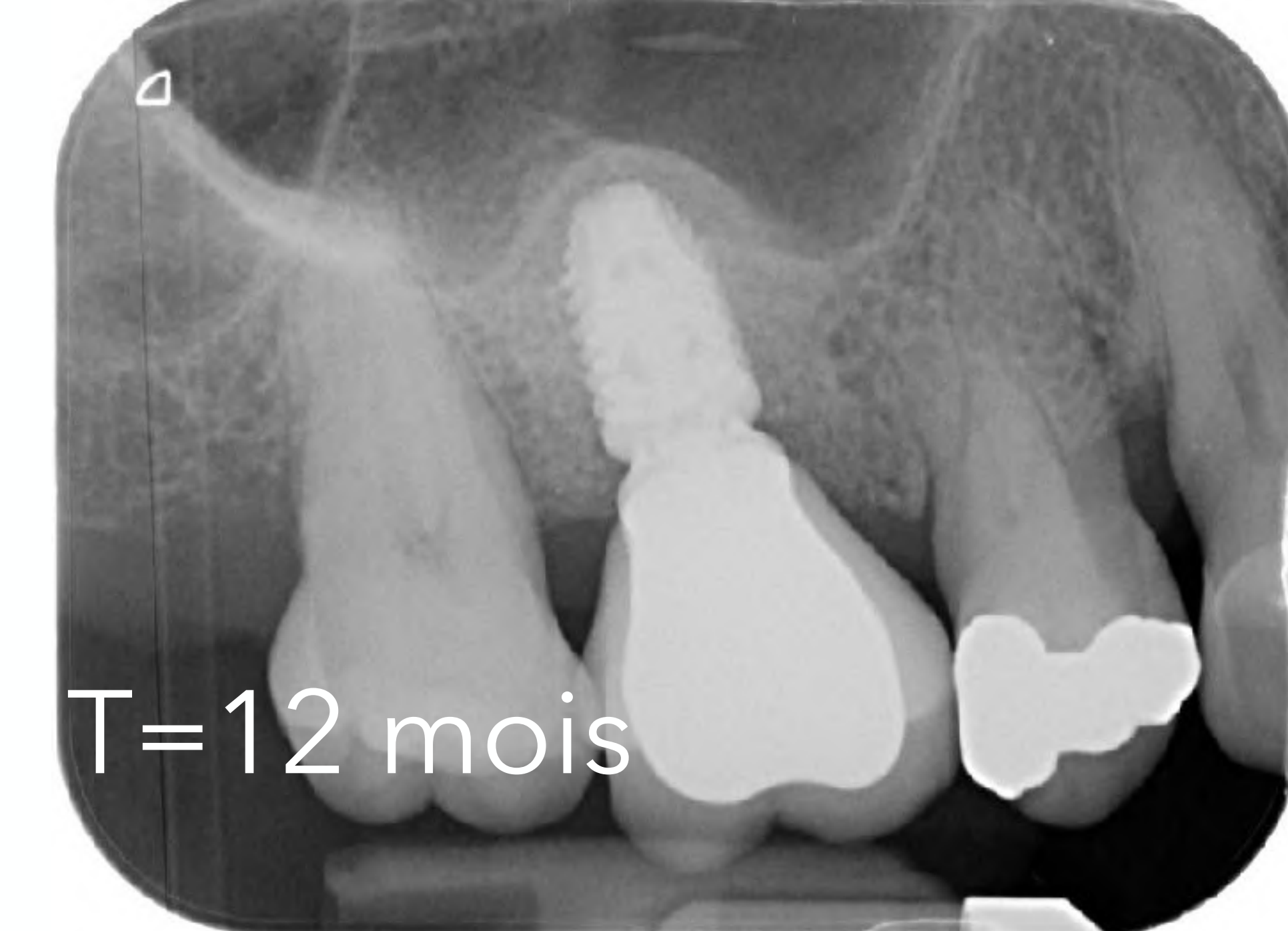


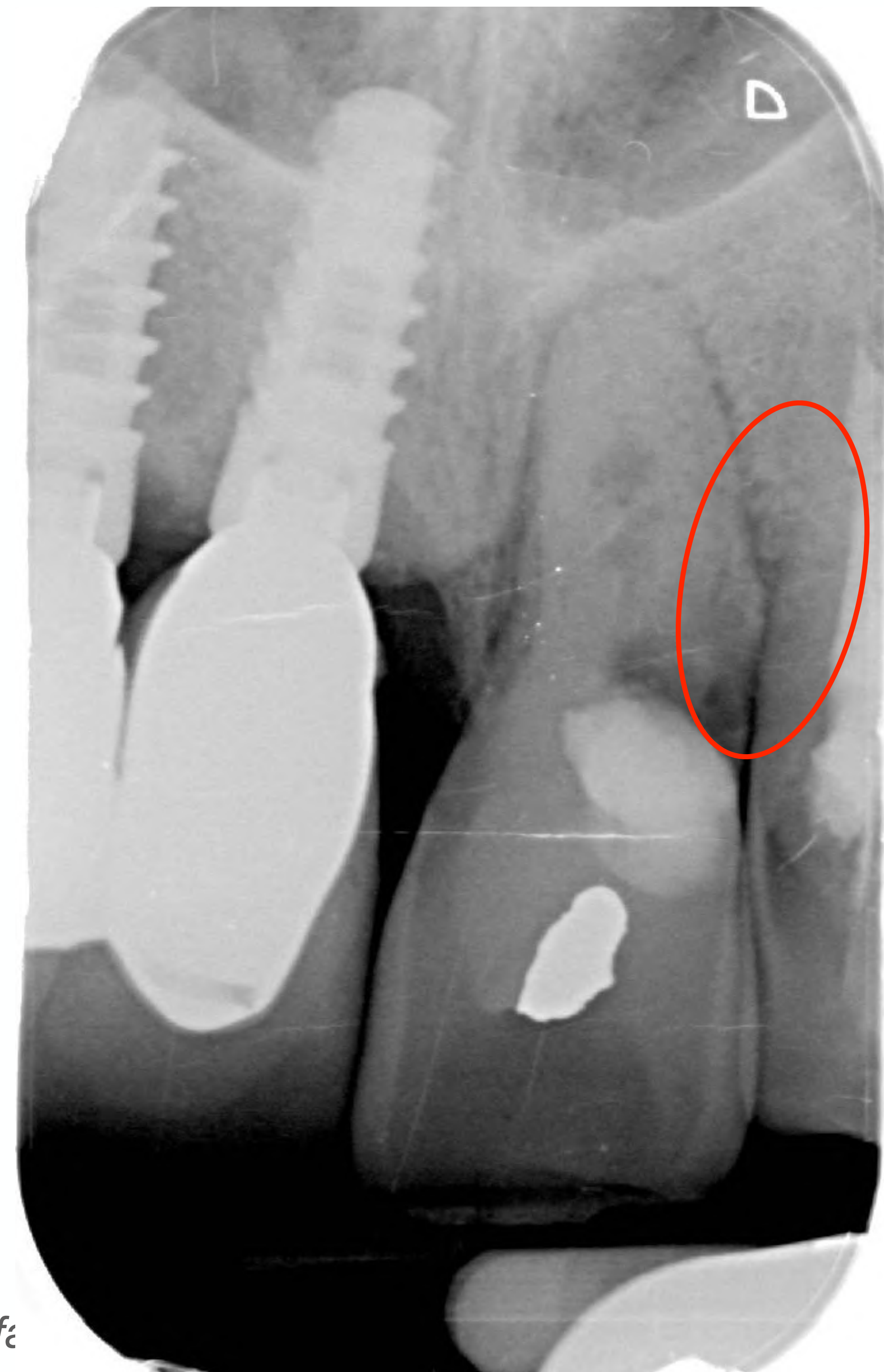
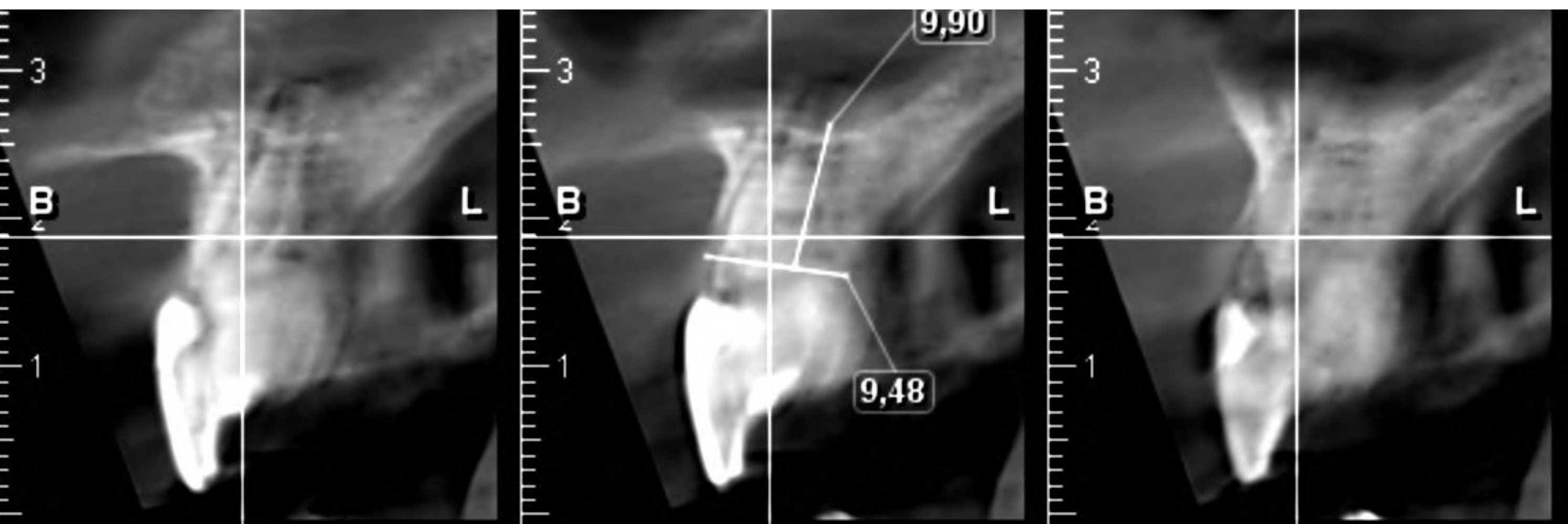






Prothèse : Dr Abdeslam Chachoua, Paris

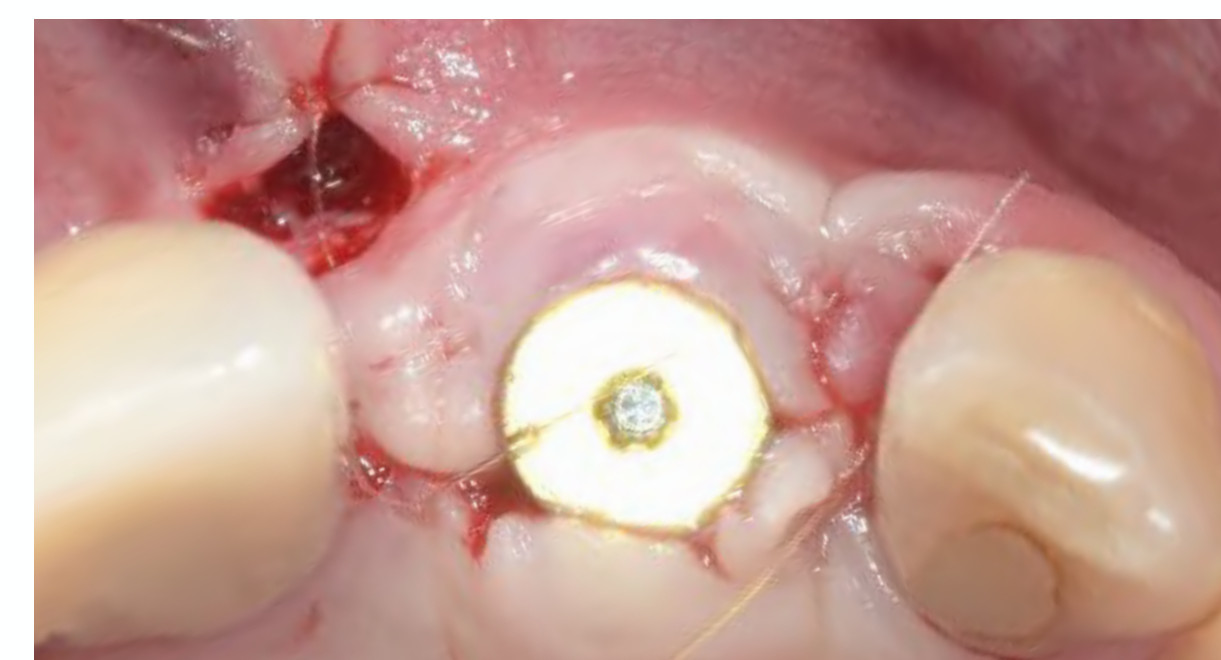
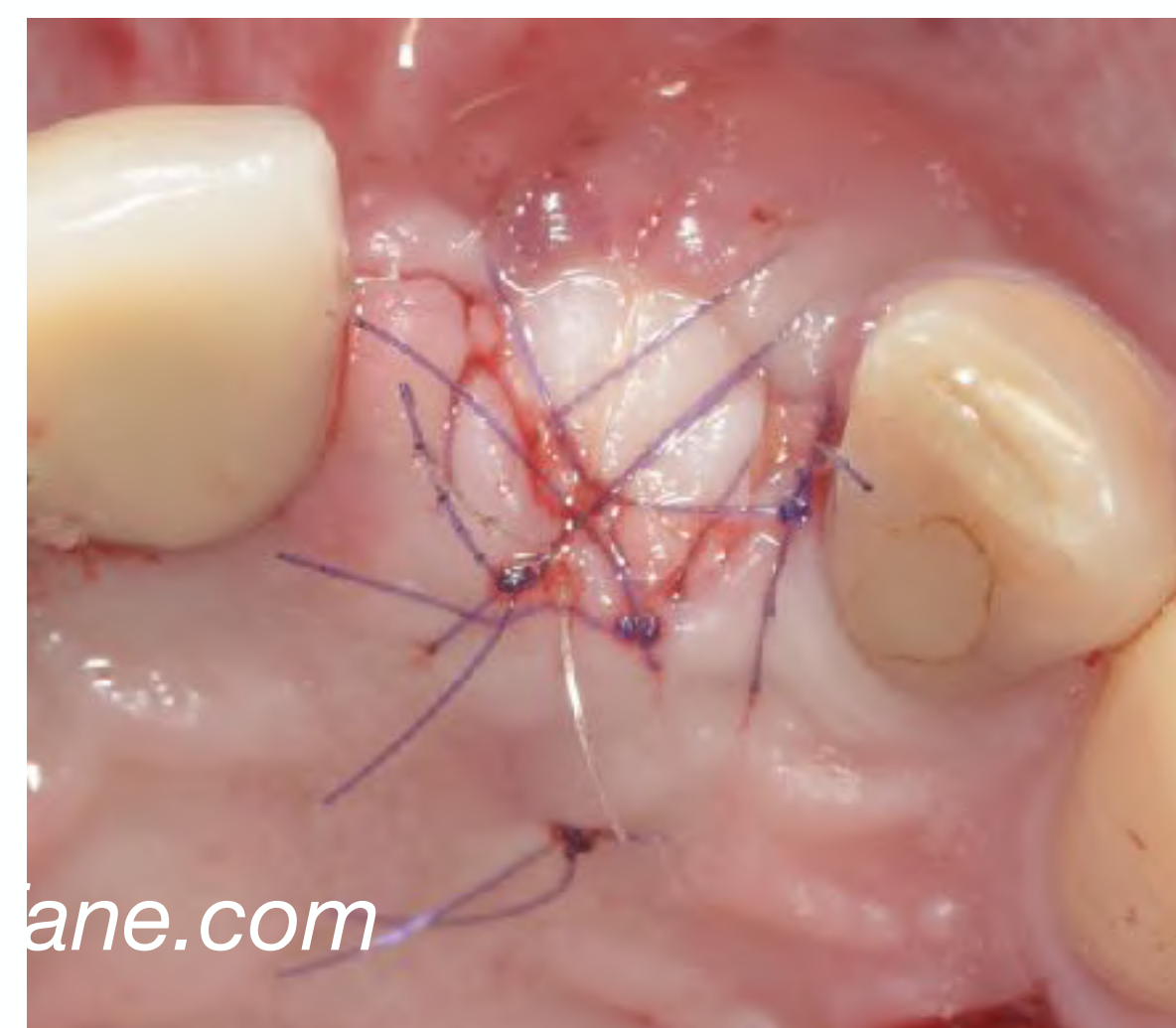
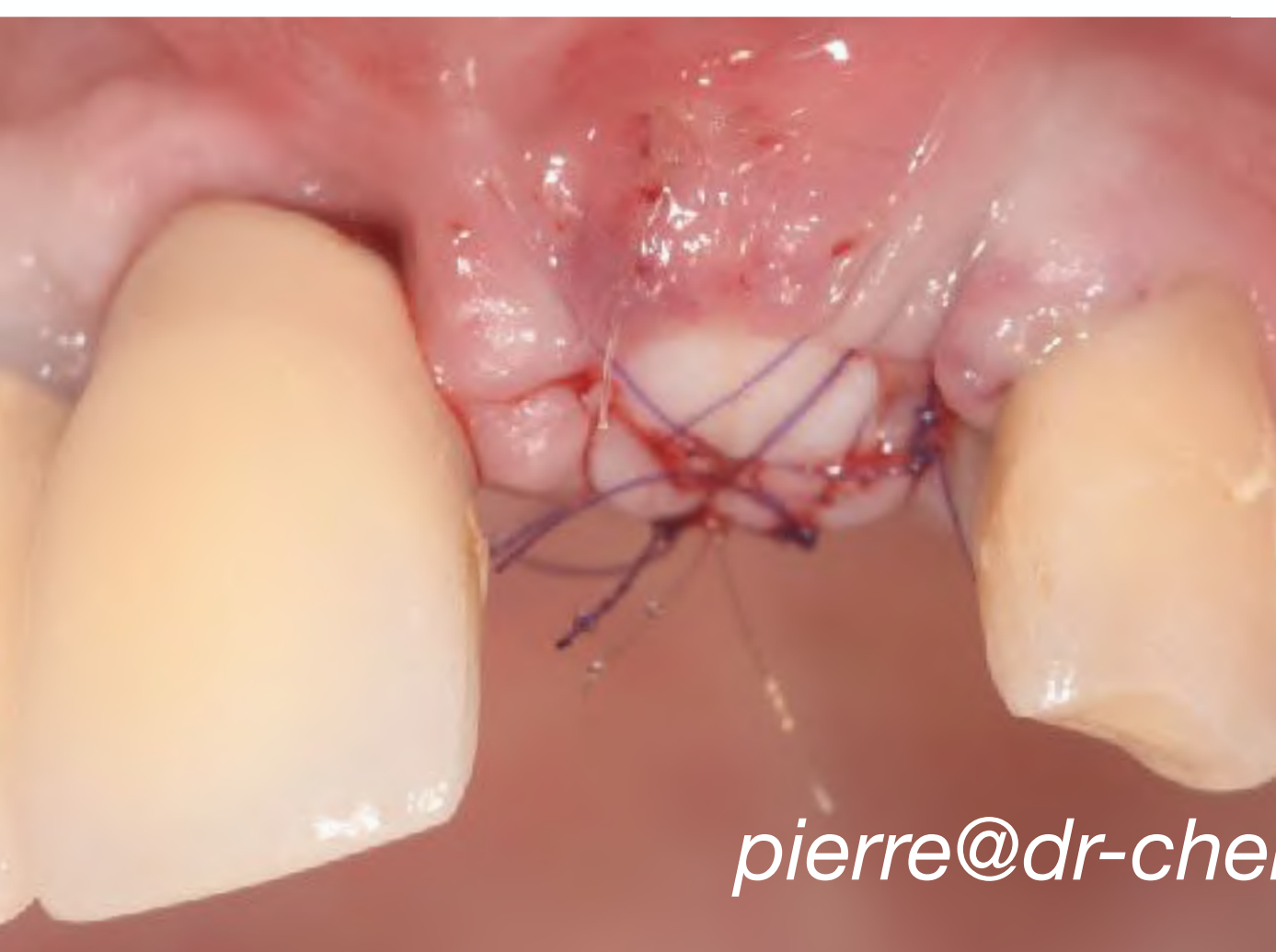
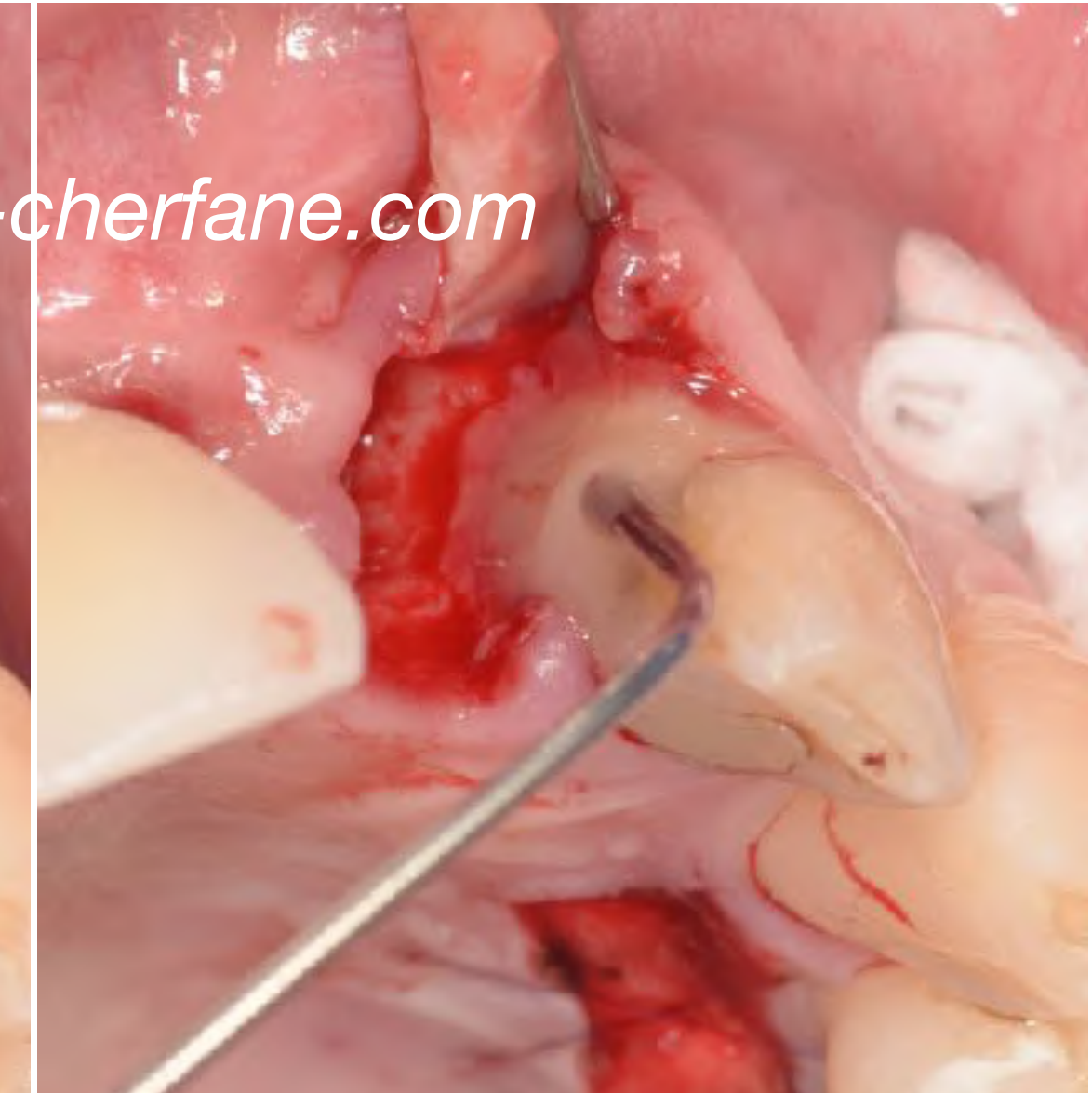
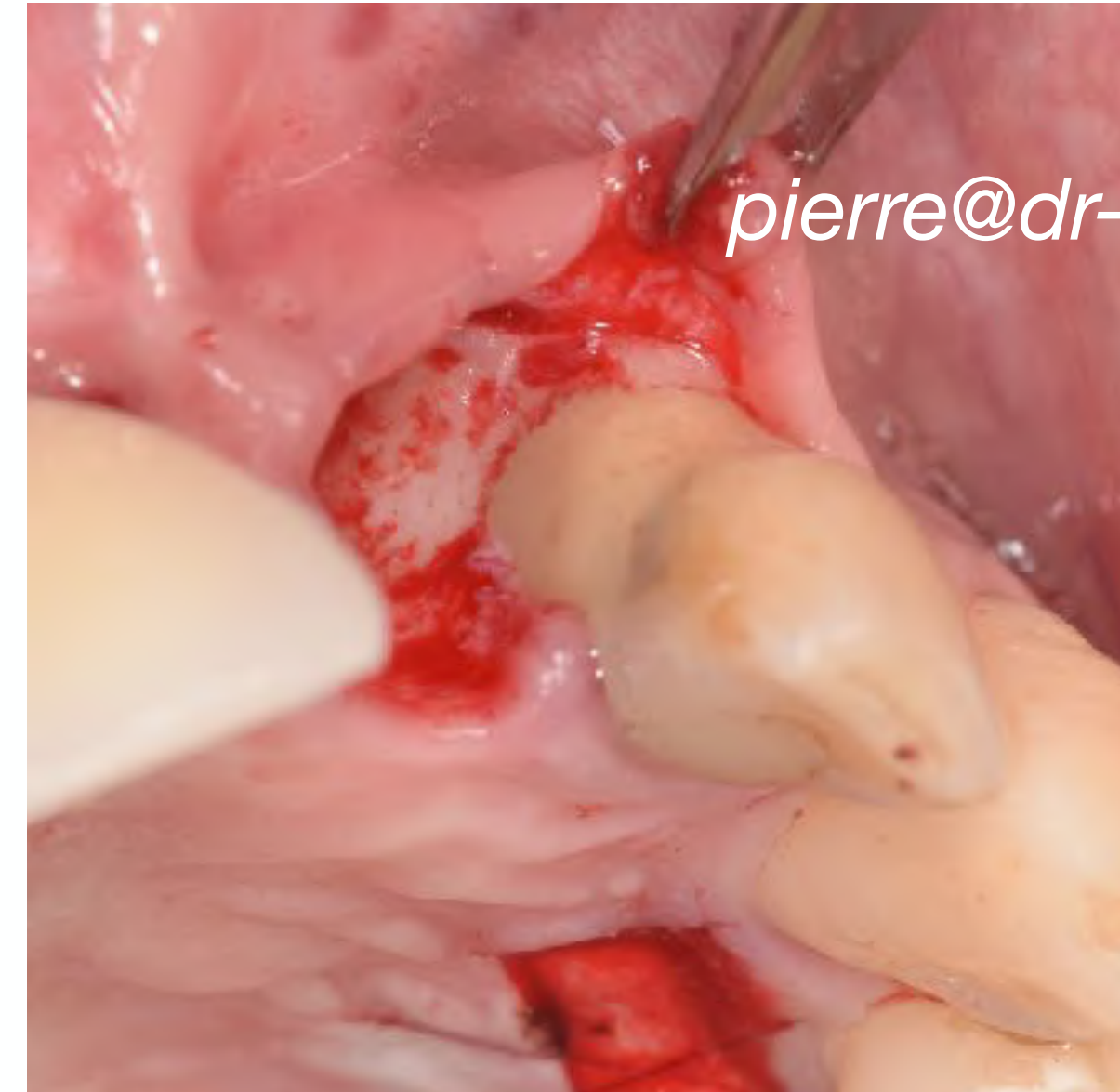




Homme, 52 ans, RAS, parodontite

Dr Pierre Cherfane

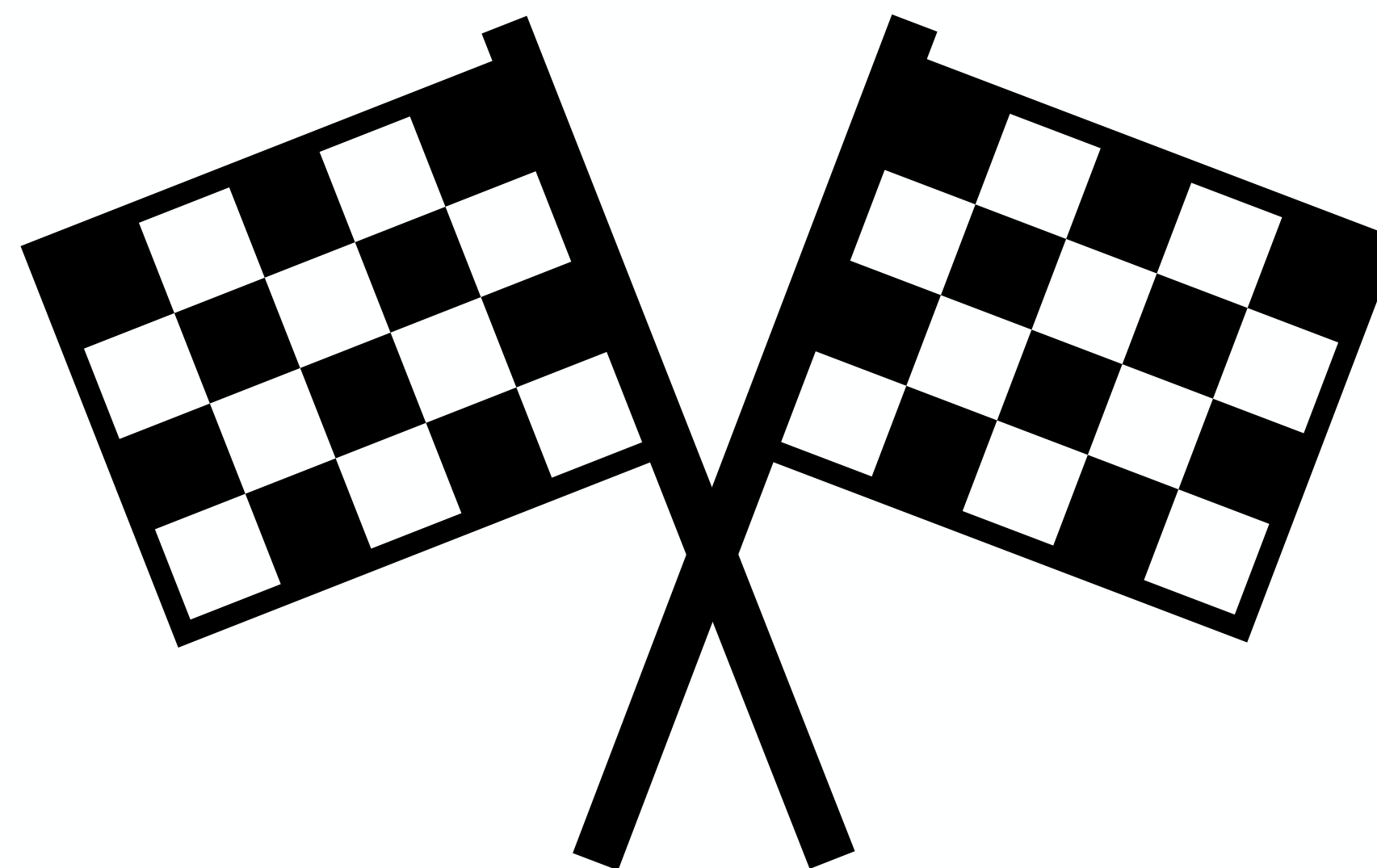
pierre@dr-cherfane.fr







Objectif



Traitement fiable à long terme avec un nombre
réduit de chirurgies minimalement invasives