

LEADING REGENERATION

Geistlich

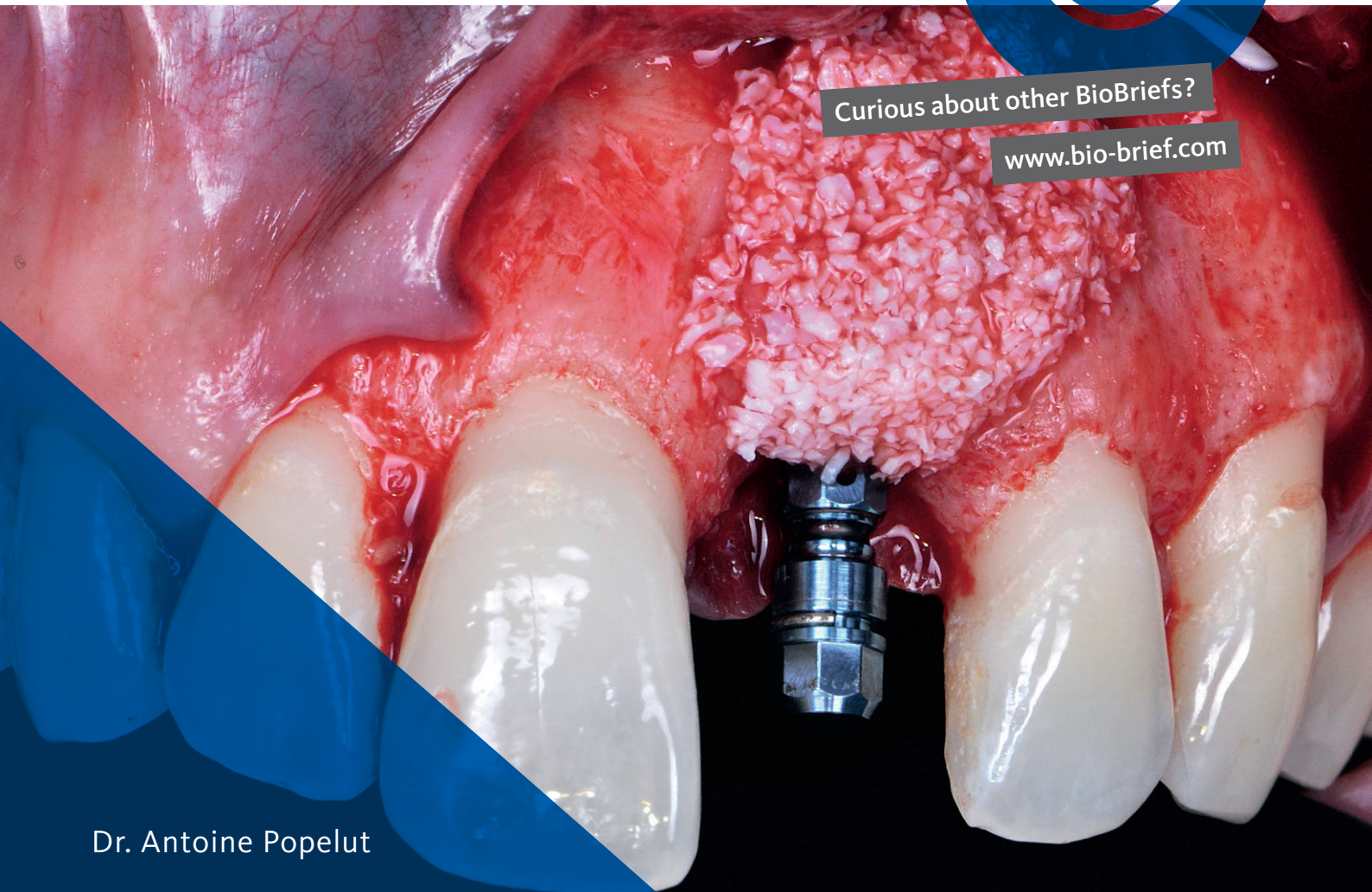
BioBrief

Minor Bone Augmentation



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Dr. Antoine Popelut

**Early implant
placement in
the esthetic zone**

The Situation

The patient is a 38-year-old male. He presented for consultation following an episode of infection on tooth 21. The radiographic examination revealed external root resorption with loss of vestibular cortical bone. Tooth extraction, fol-

lowed 6 weeks after by implant placement and Guided Bone Regeneration, were deemed necessary to restore the patient's smile. The patient demanded high-end esthetics together with long-term functional results.

The Risk Profile

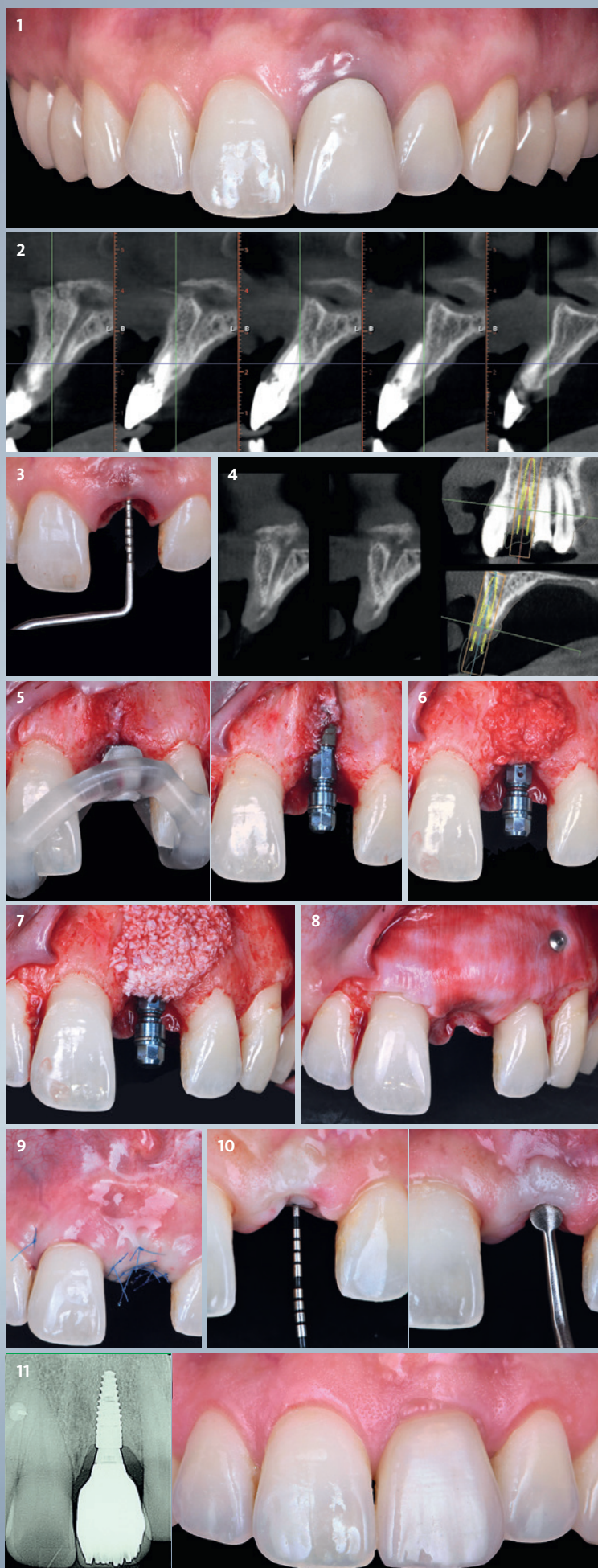
	Low Risk	Medium Risk	High Risk
Patient's health	Intact immune system/ Non-smoker	Light smoker	Impaired immune system/ Heavy smoker
Patient's esthetic requirements	Low	Medium	High
Height of smile line	Low	Medium	High
Gingival biotype	Thick – “low scalloped”	Medium – “medium scalloped”	Thin – “high scalloped”
Shape of dental crowns	Rectangular		Triangular
Infection at implant site	None	Chronic	Acute
Bone height at adjacent tooth site	≤ 5 mm from contact point	5.5–6.5 mm from contact point	≥ 7 mm from contact point
Restorative status of adjacent tooth	Intact		Restored
Width of tooth gap	1 tooth (≥ 7 mm)	1 tooth (≤ 7 mm)	2 teeth or more
Soft-tissue anatomy	Intact		Compromised
Bone anatomy of the alveolar ridge	No defect	Horizontal defect	Vertical defect



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Former University Hospital Assistant at the University of Bordeaux in periodontology

“Due to vestibular
bone loss,
immediate implant
placement was
not recommended.”



The Approach

Due to the morphology of the bony defect, the intervention consisted of implant insertion 6 weeks after tooth extraction, following the concept of early implant placement as described by Prof. Daniel Buser. At the time of implantation, Guided Bone Regeneration (GBR) was also performed using Geistlich biomaterials.

The Outcome

Early implant placement requires a 4–8 week healing period following extraction and before implants are placed. Following implant insertion, local contour augmentation was performed with harvested bone chips and Geistlich Bio-Oss® Collagen to cover the exposed implant surface, and a superficial layer of Geistlich Bio-Oss® granules was used for overcontouring. Autogenous bone chips are used to accelerate new bone formation in the defect area, whereas Geistlich Bio-Oss® and Geistlich Bio-Oss® Collagen are preferred for bone volume stability over time. The augmentation biomaterial was then covered and stabilized with Geistlich Bio-Gide®.

| 1 The patient presented at the consultation because of an infection on tooth 21 with swelling on the buccal aspect. Tooth 21 underwent root canal treatment and a ceramic crown restoration. | 2 The CBCT showed resorption of the root surface associated with buccal bone loss resulting in thin buccal wall. | 3 Atraumatic tooth extraction was performed followed by careful curettage of the socket to ensure the extraction site was infection free to place an implant at a later stage. | 4 A CBCT scan was repeated at 6 weeks which confirmed that there was buccal bone loss deficit with possible exposure of the implant shoulder if the implant were to be placed without simultaneous bone augmentation. | 5 Early implant placement with the help of surgical guide was performed after 6 weeks. A full-thickness flap was raised with two releasing incisions. One incision was distal to tooth 11. The other releasing incision was distal to tooth 23. | 6 The exposed area of the implant was covered with a mixture of harvested bone chips and Geistlich Bio-Oss® Collagen moistened by patient's blood. | 7 Geistlich Bio-Oss® granules were used to contour the buccal plate and limit the resorption process. | 8 Over the bone graft, Geistlich Bio-Gide® was fixed with help of 2 pins which were placed apically without damaging the adjacent roots. This allowed the grafting material to stabilize. | 9 The flap was sutured back in place with the help of non-resorbable sutures (5.0) after placing the healing cap over the implant. These sutures were removed after 8 days. | 10 Five-month after implant placement, the implant healing cap is removed to take an impression. The necessary steps were taken for placing an esthetic crown over the implant. | 11 A regular follow-up was recommended to the patient and the clinical situation 2 years post-surgery shows the buccal bone level and gingival margin are stable.



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Keys to Success

Full flap release

Optimized 3D implant positioning with the use
of a surgical guide

Improved stability of the augmentation material
by fixing the membrane

Tension-free primary wound closure



Guided Bone Regeneration at early implant placement
with Geistlich Bio-Oss Collagen®, Geistlich Bio-Oss®
and Geistlich Bio-Gide® is a predictable procedure for
long-term results.

