

LEADING REGENERATION

Geistlich

BioBrief

Minor Bone Augmentation



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Dr. Rafaela Nigro and
Prof. Dr. Frederico Nigro

**Filling the buccal gap at
immediate implant
placement with Geistlich
Bio-Oss® Collagen.**

The Situation

The patient C.V, 46 years old, male, had been referred by another professional for analysis of tooth element 22 due to the presence of a buccal gingiva fistula with bleeding and clinical probing depth. CBCT (cone-beam computed tomography)

confirmed extensive bone loss and the presence of a periapical lesion in the tooth due to a root fracture and subsequent infection in the region.

The Risk Profile

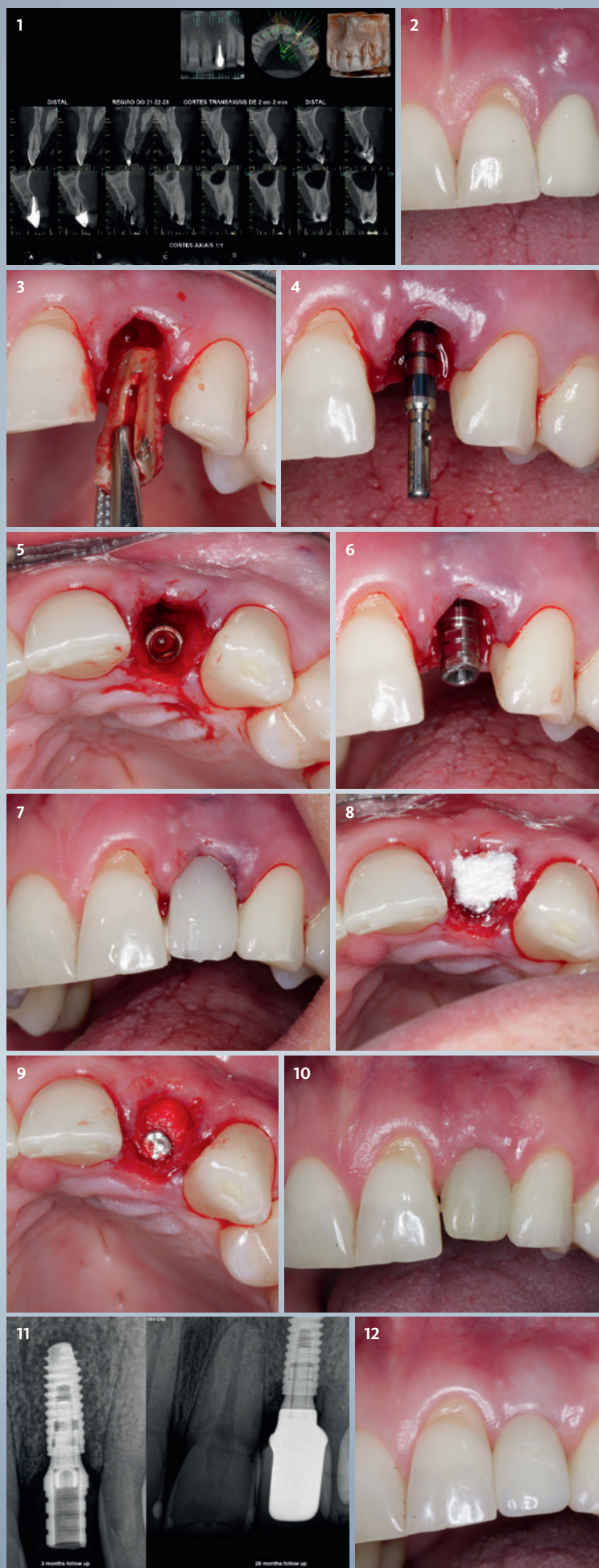
	Low Risk	Medium Risk	High Risk
Patient's health	Intact immune system/ Non-smoker	Light smoker	Impaired immune system/ Heavy smoker
Patient's esthetic requirements	Low	Medium	High
Height of smile line	Low	Medium	High
Gingival biotype	Thick – “low scalloped”	Medium – “medium scalloped”	Thin – “high scalloped”
Shape of dental crowns	Rectangular		Triangular
Infection at implant sight	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

“The compromised region affects a highly esthetic area. Thus, plans were made to place an immediate implant at surgical site in conjunction with filling of the buccal gap.”



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Dr. Rafaela Nigro graduated from the University of São Paulo (University of São Paulo School of Dentistry – FOUSP), specialized in periodontics (at the Foundation for Scientific and Technological Development of Dentistry at the University of São Paulo – FFO-USP), and obtained an MBA in business management (ESALQ-USP).
Prof. Dr. Frederico Nigro graduated from the University of São Paulo (FOB USP) with the degrees of PhD and MSc in implant dentistry and did post-doctoral work in material sciences at the Institute for Energy and Nuclear Research (IPEN). He is a specialist in Implant Dentistry and Prosthodontics.



The Approach

Geistlich Bio-Oss® Collagen was used for filling of the gap between the implant placed immediately after atraumatic extraction of tooth element 22 and the bone defect. The goal was to maintain the bone/gingiva architecture and the function of the area, thereby restoring the bone height as well as gaining thickness and volume in the region and hence maintaining the esthetic characteristics.

The Outcome

The use of Geistlich Bio-Oss® Collagen for filling the buccal gap at immediate implant placement provided satisfactory bone regeneration. The buccal bone volume profile is adequate to the esthetic requirements.

| 1 Initial preoperative tomography (CBCT). Examination shows bone loss around tooth element 22 on the transaxial sections. Horizontal and vertical bone defect in the region. | 2 Preoperative clinical situation with apparent integrity of the prosthetic crown of tooth element 22 and presence of a fistula in the buccal soft tissue. The mucosal alteration had originated from tooth 22 itself. | 3 Extraction of the fractured root with an atraumatic surgical technique and minimal deformation of the socket crucial for regeneration of bone defects immediately after extraction of the tooth element. | 4 After the bone perforations with the implant drill system, the orientation, position and degree of inclination of the future implant to be placed were verified. Seen from the vestibular perspective. | 5 Occlusal view of the implant with internal Morse-type connection placed in the palate. The implant was placed to a depth of 3 mm below the bone surface on the palatal side, and on the buccal side 3 to 4 implant threads remained exposed. | 6 Placement of the abutment beneath the implant for manufacture of the immediate provisional prosthesis. | 7 Manufacture and adjustment of the immediate provisional prosthesis. Note that this step was performed prior to the placement of the bone graft at the surgical site. | 8 Insertion of Geistlich Bio-Oss® Collagen 100 mg into the surgical site in order to minimize the physiological bone loss that occurs in the alveolar bone after tooth extraction. | 9 Placement of Geistlich Bio-Oss® Collagen in order to fill the entire space of the bone defect. It is important to have the biomaterial already hydrated at the time of placement. | 10 The surgery was completed with the placement of the immediate provisional prosthesis. | 11 Final radiography at 3 months and 26 months after surgery, respectively. | 12 Clinical situation 26 months after surgery. Note the excellent appearance of the mucosa around the implant and contour of the gingival margin.



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Keys to Success

The management of the socket must be atraumatic.

Filling the buccal to implant gap with
Geistlich Bio-Oss® Collagen.

There must be sufficient native bone for anchoring the
implant and achieve primary stability at immediate implant
placement.

The suture must be passive and tension-free.

The immediate provisional must be out of occlusion.

The patient needs to follow all the post-operative
recommendations and guidelines so that the surgically
treated area will not be injured.



Use of a high-quality biomaterial, as
Geistlich Bio-Oss® Collagen, exalts the dental
surgeon's work to excellence. Predictable
results, easy management and long-term dimensional
and volumetric stability are pivotal factors in
determining the success of the treatment.

Testimonial of Dr. Nigro Rafaela

