

# Interimplant Papilla Reconstruction and Hard and Soft Tissues Interactions: A Case Report

R. Tizzoni / M. Tizzoni MD & DDS

Tizzoni Medici Chirurghi ed Odontoiatri Associati - 30, Via San Barnaba - 20122 Milano - Italy

Mail: tizzoni.med@libero.it

Topic: Implant aesthetics

## Background and Aim

To achieve an aesthetic outcome in an implant-supported rehabilitation, the foundation for the gingival support is the underlying osseous crest (1). It has been proven that by maintaining or trying to correct the height and width of bone in the interproximal area, an aesthetic reconstruction of the papilla can be achieved (2). In the aesthetic area GBR procedures are routinely performed before or during dental implant placement to increase alveolar bone volume (3). The aim of this case report was to verify the role of bone loss in one case of GBR procedure, as a consequence of a post-surgical complication, on the presence or absence of previously reconstructed interimplant papillae.

## Methods and Materials

The premaxilla in one patient, requiring adjacent implants and fixed prosthesis, was treated with six scalloped implants from tooth number 1.3 to tooth number 2.3.

The implants were placed in a ridge with flat anatomy and in ideal 3D position four months after tooth extraction and simultaneous guided bone regeneration procedure were performed by means of particulated autologous bone and reabsorbable membranes. A surgical technique for interimplant papilla reconstruction was also carried out on bone structures at the time of implant placement, and on soft tissues at II stage surgery (4). A total of 5 interimplant papillae were examined. Four flat-platform-implants were also inserted to rehabilitate posterior areas.



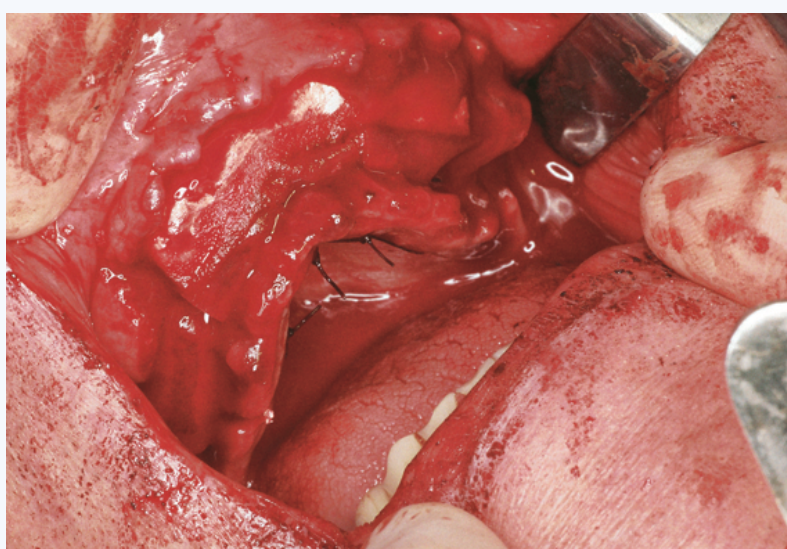
Pre-operative - lateral-right-Note the aggressive periodontal disease associated with severe buccal bone plate resorption



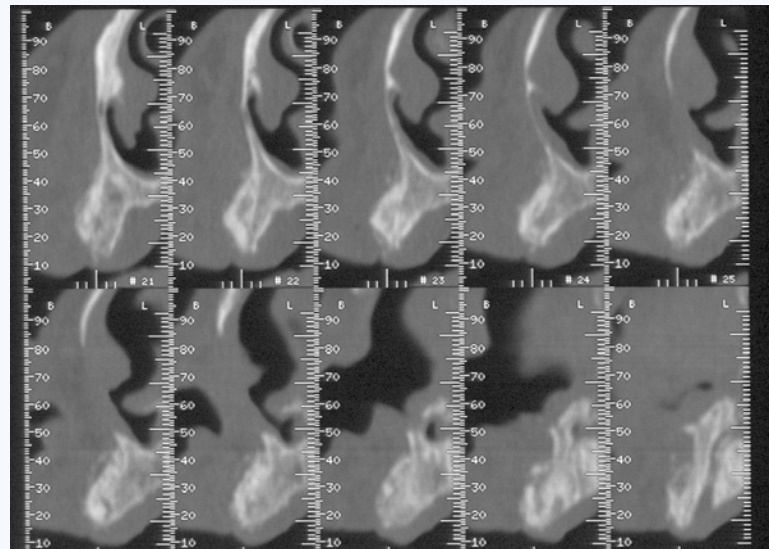
Pre-operative-frontal



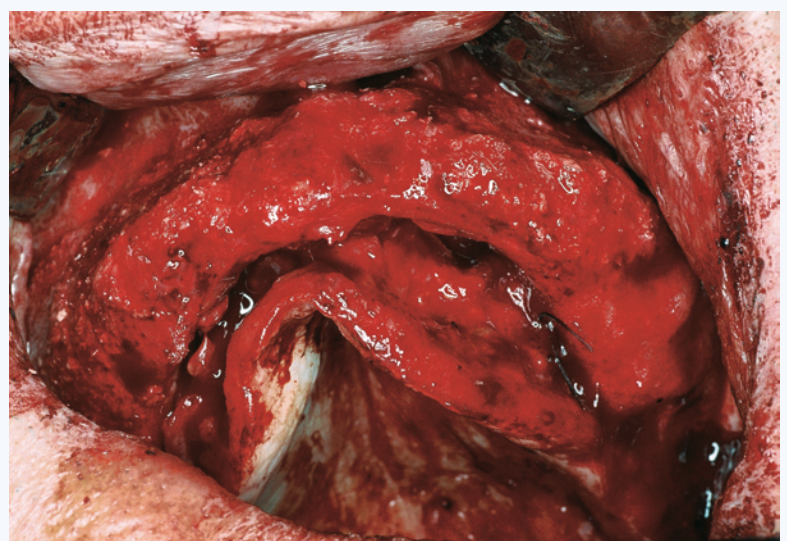
Pre-operative-lateral left



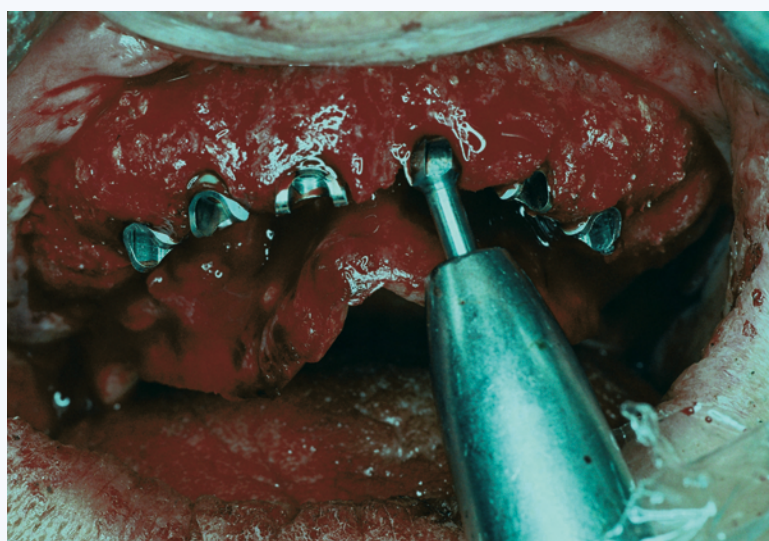
GBR-Membranes cover bone particulates and are sutured to the palatal flap



Four months after GBR



Four months after GBR, during implants placement



Aesthetic area implants-placement, according to R. Tizzoni's inter-implant papilla reconstruction technique



Healing 7 days after anterior implant surgery



Healing 20 days after anterior implants placement. Note spontaneous healing of a deiscence. Deiscence caused bone resorption



II stage surgery



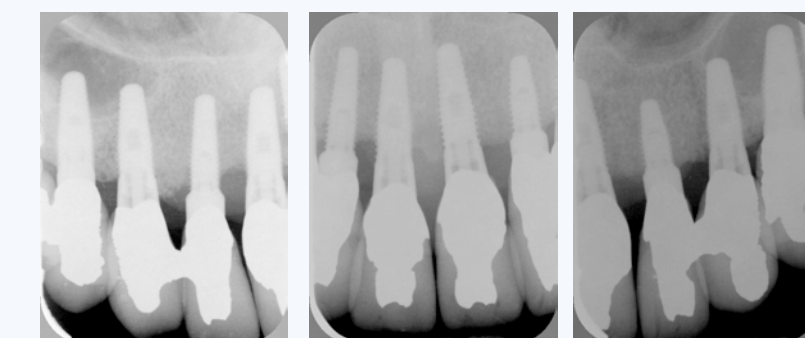
Final prosthesis lateral right. The aesthetics is jeopardized due to bone resorption and consequent lack of soft tissue support



Final prosthesis-frontal view



Final prosthesis lateral left



## Results

All implants were stable and successfully in function at one year follow-up, resulting in 100% cumulative survival rate. 80% of the interimplant spaces analysed showed aesthetically pleasant papilla reconstruction two weeks after II stage surgery and at one year follow-up, one interimplant papilla (20%) started to fail to maintain underlying hard tissue support 7 days after implant placement due to a deficiency in wound closure, even if complete spontaneous wound healing was accomplished 20 days after implant placement.

Nevertheless no bone support was achieved for that papilla and the aesthetics was jeopardized.

## Conclusions

This case report indicates that for an aesthetic reconstruction of interimplant papillae the following factors need to be considered:

- 1) bone grafting is applied for good initial implant stability, to prevent resorption of the buccal bone plate and to support the buccal and interproximal gingiva for an optimal aesthetic result of the peri-implant soft tissues (5)
- 2) the results of the present study seem to confirm that interimplant papillae reconstruction is now achievable, as previously reported (4)
- 3) an uneventful soft tissue wound healing is desirable to allow bone graft stability, to prevent extensive bone resorption and reconstructed interimplant papilla maintenance.

## References

- 1) Salama H, Salama MA, Garber DA, Adar P. The interproximal height of bone: a guidepost to predictable aesthetic strategies and soft tissue contours in anterior tooth replacement. *Pract Periodontics Aesthet Dent* 1998;10(9):1131-1141
- 2) Grunder U, Gracis S, Capelli M. Influence of the 3-D bone-to-implant relationship on esthetics. *Int J Periodontics Restorative Dent* 2005;25:113-119
- 3) Buser D, Halbritter S, Hart C, Bornstein MM, Grutter L, Chappnis V, Belser UC. Early implant placement with simultaneous guided bone regeneration following single-tooth extraction in the esthetic zone: 12 months results of a prospective study with 20 consecutive patients. *J Periodontol* 2009 Jan; 80 (1): 152-162
- 4) Tizzoni R. New technique for inter-implant papilla reconstruction between two or more implants in patients with variably resorbed ridges and flat anatomy. Results of a series of nine consecutive clinical cases. Abstract number 069 *Clin Oral Implants Res* Vol 20 - Issue No. 9 Sept 2009
- 5) Meijndert L, Raghoobar GM, Schupbach P, Meijer HJ, Vissink A. Bone quality at the implant site after reconstruction of a local defect of the maxillary anterior ridge with chin bone or deproteinised cancellous bovine bone. *International Journal of Oral and Maxillofacial Surgery* 2005;34:877-884