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Socket preservation with intentionally exposed non-resorbable d-PTFE membrane as atraumatic alternative to GBR

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After tooth extraction, a cascade of biological events occurs, typically resulting in significant local anatomic changes, including reduced height and reduced width of the residual ridge. In order to improve the aesthetic predictability of post-extractive implants, several studies and systematic reviews have been conducted to evaluate the efficacy of different socket-filling approaches involving different grafting materials, with or without barrier membranes. A recent systematic review concluded that high-density polytetrafluoroethylene (d-PTFE) membranes protect the grafting material and/or the initial healing clot from bacterial contamination, leading to successful regeneration without a significant risk of infection. The aim of this study is to show the quantitative histological examination of bone reconstructed with d-PTFE membrane, left intentionally exposed in postextraction sockets grafted with anorganic bone material and removed after 4 weeks versus extraction and guided bone regeneration (GBR), performed two months later. Conclusions: with the limitation of the present study, buccal plate reconstruction with an intentionally exposed non-resorbable membrane is an effective and easy procedure for regenerating a resorbed buccal bone plate, reducing the need for guided bone regeneration.

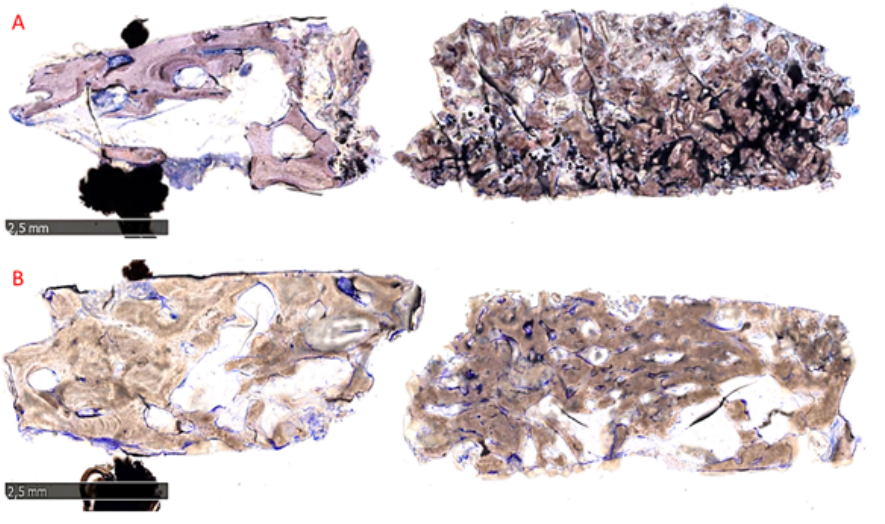

Figure 1: Overview of two representative samples: A) Socket preservation, B) GBR. A large amount of regenerated bone surrounds grafted blocks in the coronal portion of the biopsies (right side), while in the apical portion (left side), basal bone is observable in both groups. Total magnification 25x, Toluidine Blue and Pyronine Yellow staining.

Recent publications

1. Mecall RA, Rosenfeld AL. Influence of residual ridge resorption patterns on implant fixture placement and tooth position. 1. Int J Periodontics Restorative Dent 1991;11:8–23.

2. Darby I, Chen ST, Buser D. Ridge preservation techniques for implant therapy. Int J Oral Maxillofac Implants 2009; 2:260–71.

3. Carbonell JM, Sanz Martı´n I, Santos A, Pujol A, Sanz-Moliner JD, Nart J: High-density polytetrafluoroethylene membranes in guided bone and tissue regeneration procedures: a literature review. Int. J. Oral Maxillofac. Surg. 2014; 43:75–84.

Biography

Roberto Luongo graduated with honors in Dentistry at the univeristy of Bari in 1996. In 2002 received his certificate in Implant Dentistry of the two-year, full time advanced program at New York University College of Dentistry, Head D. Tarnow and Director N. Elian. In 2004 he participated to the annual course of Periodontology held by Dr. S. Parma Benfenati, in 2008 the annual fixed prosthesis of Dr. M. Fradeani, in 2020 the annual advanced course in in Mucogengival Surgery held by Prof. G. Zucchelli. From 2003 to 2010 he acted as the Adjunt Professor in implant dentistry at the University G. D'Annunzio of Chieti. Since 2000, he is a member of the American Academy of Osteointegration, since 2016 active member of the Italian Society of Implantology (SIO) become Italian Academy of Osteointegration (IAO) in 2017. From 2012 he is the director of the program in Implant Dentistry held at Istituto Stomatologico Mediterraneo in Bari.

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