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# Comparative analysis of autogenous vs. xenogenous bone grafts in rabbit mandible: Preliminary histological results

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**F**or this split mouth randomized study nine adult New Zealand rabbits were considered. The control side of the mandible was augmented with autograft block harvested from the iliac crest, while xenograft was used on the test side (Heket Biomaterials, Vicenza, Italy). Dimensions of the graft were 10 mm diameter x 3 mm height. Recipient bed sites were equally perforated. Grafts were fixed with 1.5x10 mm titanium positional screws and covered with a collagen membrane (Heket Biomaterials, Vicenza, Italy). Three animals were sacrificed at 07, 20 and 60 days respectively. Biopsies were taken for histological analysis. Paraffin sections were stained with Hematoxylin-Eosin and Masson's Trichrome. At 07 days, xenografts showed a scaffold with empty lacunae, while autografts presented a complex pristine bone architecture including osteocytes and bone marrow. Blood clot and inflammatory cells infiltration were observed arising from recipient bed perforations in both groups. At 20 days, a sparse immature and non-organized new bone formation was found for xenograft, while autograft presented an intense woven bone formation. Osteoblast bone matrix deposition and osteoclast resorption activity was also observed as part of remodelling

bone process. For both autograft and xenograft groups, a clear delimitation between graft and recipient bed was still noticed. However, at this time, graft union was more evident for autograft. New bone was found forming mostly from recipient bed perforations and close to the membrane for both groups. At 60 days, xenograft showed a higher level of resorption when compared to autografts. Graft union became bridged by well-organized bone for both groups. Considering the limitations of the present study, it can be suggested that autograft provides a better bone formation and maintenance overtime.

## Biography

Samuel P Xavier (Oral and Maxillofacial Specialist since 1995) has completed his PhD from Sao Paulo State University, Brazil and Postdoctoral studies from University of Freiburg, Germany (2008-2009) respectively. He is currently working as an Associate Professor in the Department of Oral Maxillofacial Surgery and Periodontology, Faculty of Dentistry at University of Sao Paulo. He has published more than 50 papers in reputed journals and is a Member of the Board of the Oral and Maxillofacial Surgeons at the Hospital of the Medical Faculty of University of Sao Paulo since 1997.

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