New trends in the treatment of grade II furcation defects using second generation platelet concentrates.

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Abstract

The furcation defect is defined as the pathological reabsorption of interradicular bone that occurs in multi-rooted teeth in advanced stages of periodontal disease. Some surgical strategies to cover furcation defects and exposed roots include free gingival grafts, pedicle flaps, subepithelial connective tissue grafts, and application of different biomaterial-based grafts. The Platelet Rich Fibrin (PRF) has different characteristics like a high concentration of platelet and leukocytes, as well as fibrin/fibronectin, and a low concentration of thrombin that makes flexible its structure, facilitating the uptake of cytokines and migration of other cells involved in the regenerative process. Two furcation defects on 47 and 46 teeth grade I/II (n=2) respectively were evaluated from a healthy male patient 46 years-old who was receiving dental treatment on dentistry Faculty of Antonio Nariño university. He was treated with coronally displaced flap (CDF) and PRF.

A mucoperiosteal partial superficial thickness flap was lifted up from affected teeth and PRF was obtained from a patient blood sample (10mL) in a glass tube without anticoagulant, which was immediately processed. The flap was repositioned to coronal level beyond the cementoenamel line with 2 PRF membranes placed on the root surfaces and sutured. Morphometric and clinical measurement was performed 6 months after the procedure to analyze the interradicular molar zones.

RESULTS The CDF with PRF performed showed presence of hard and soft tissues evaluated clinically and tomographically with a significant coverage of p <0.05 in the fornix zones of the molars. On the interradicular area morphometric values shows that tooth 46 there was a decrease (0.0005) of -1.127 (2.104 ± 0.06 vs 0.977 ± 0.07) of defect and tooth 47 (0.0047) of -0.850 (1.891 ± 0.04) vs 1.041 ± 0.05) CONCLUSION Use of CDF together with PRF can be considered as a treatment option because it achieves a ostensibly osteoconductive, biocompatible function and reduces patient recovery time improving the prognosis of established defects.

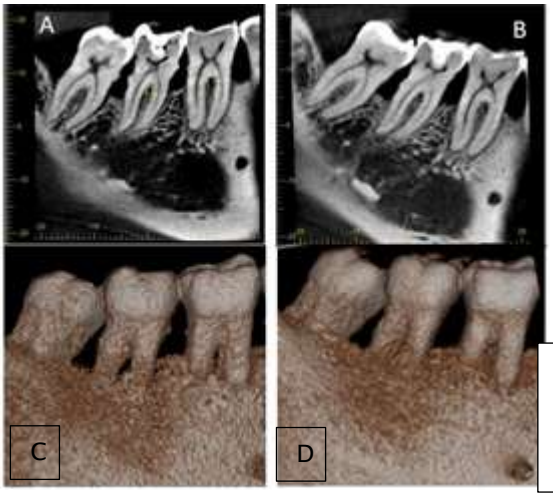


Figure 1 (A& C) Preoperative Tomography (B&D) Post-operative tomography membranes 6 months follow up.

Recent Publications

1. Borie, E., D. G. Olivi, I. A. Orsi, K. Garlet, B. Weber, V. Beltran, and R. Fuentes, 2015, Platelet-rich fibrin application in dentistry: a literature review: Int J Clin Exp Med, v. 8, p. 7922-9.
2. Cairo, F., U. Pagliaro, and M. Nieri, 2008, Treatment of gingival recession with coronally advanced flap procedures: a systematic review: J Clin Periodontol, v. 35, p. 136-62.
3. Choukroun, J., A. Diss, A. Simonpieri, M. O. Girard, C. Schoeffler, S. L. Dohan, A. J. Dohan, J. Mouhyi, and D. M. Dohan, 2006, Platelet-rich fibrin (PRF): a second-generation platelet concentrate. Part IV: clinical effects on tissue healing: Oral Surg Oral Med Oral Pathol Oral.
4. Eren, G., and G. Atilla, 2014, Platelet-rich fibrin in the treatment of localized gingival recessions: a split-mouth randomized clinical trial: Clin Oral Investig, v. 18, p. 1941-8.
5. Wu C-L, Lee S-S, Tsai C-H, Lu K-H, Zhao J-H, & Chang Y-C. Platelet-rich fibrin increases cell attachment, proliferation and collagen-related protein expression of human osteoblasts. Aust Dent J. 2012 Jun; 57(2): 207-12.



Biography

Dr. Juan Pablo Pava Lozano is currently working as Periodontist at the University Antonio Nariño, member of Bucal Innovation group endorsed by COLCIENCIAS. Dr Pava completed his specialization studies in Periodontics at the National University of Colombia. He then worked as Invited professor at the University of Valle. Author “Clinical description of the tissue response to intraoral tattoos (new forms of body art): Pilot study”. Dr Pava has presented as academic speaker in some international conferences as XXII International congress of dental iberolatinamerican federation (Puerto Vallarta Mexico may 24-27/2017), IX Metropolitan dental congress (Caracas Venezuela may 28-31 2015) and his investigation lines reflect his research interests in tissue engineer.

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Notes/Comments: