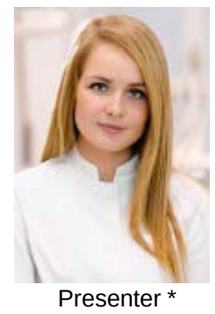
Abstract #1933

Treatment of intrabony defects with PRG or OFD
A preliminary study

F. Dőri[1], B. Pilihaci*[1], Zs. Papp[1], N. Tari[1], N. B. Arweiler[2], A. Sculean[3]

[1]Dept. of Periodontology, Semmelweis University of Medicine, Budapest, Hungary, [2]Dept. of Periodontology, University of Marburg, Marburg, Germany, [3]Dept. of Periodontology, University of Bern, Bern, Switzerland


Presenter *


Author

Background

Growth factors contained in platelets are universal initiators of almost all wound healing. The platelet rich plasma (PRP) accelerates existing wound healing pathways and is an autologous source of platelet derived growth factor (PDGF) and trasforming growth factor beta (TGF-β). PDGF is the first growth factor in the wound and leads toward revascularization, collagen synthesis and bone regeneration. TGF-β represents a growth factor mechanism that not only can initiate bone regeneration but also can sustain long-term healing. Transforming PRP to a gel format (PRG) allows its use alone, without a graft material and not least is easier to apply in the osseous defect.

Aim of the study

To evaluate clinically the results following treatment of intrabony defects with platelet-rich gel (PRG) versus open flap debridement (OFD).

Materials and Methods

16 (8/8) patients with advanced chronic periodontitis, each of whom displayed one deep intrabony defect, were randomly treated with PRG (test) or OFD (control). Clinical evaluation was performed at baseline and at six months following therapy. Registered parameters were: probing pocket depth (PPD), clinical attachment level (CAL), and 'bone sounding' (BS). Surgery consisted from full flap preparation, curettage of the defect, scaling, root planing, preparation of the PRP before, and PRG during the surgery (test). Application of the PRG in defects in the test group, sutures. Pre-and postoperative use of chlorhexidine 0.2%, and postoperative antibiotics per os.

PRP and PRG preparation

To produce PRP extracts, 8.5 ml of anticoagulated (ACD-A) autogenous venous blood was centrifugated in a GLO GT416 centrifuge (*Glotech Co., Ltd., Korea*) for 5 minutes at 1200g Soft Start. To compress the platelets into a single pellet, a second centrifugation step was performed for 10 minutes at 1200g Soft Start. At the end of the PRP preparation 1 ml of PRP was taken from the GLO PRP syringe (*GLO PRP kit, Glotech Co*.).

To prepare PRG, 0.2 ml Ca-gluconate and 0.4 ml autogenous venous blood was added to 1ml PRP. After 10 minutes PRG was formed.

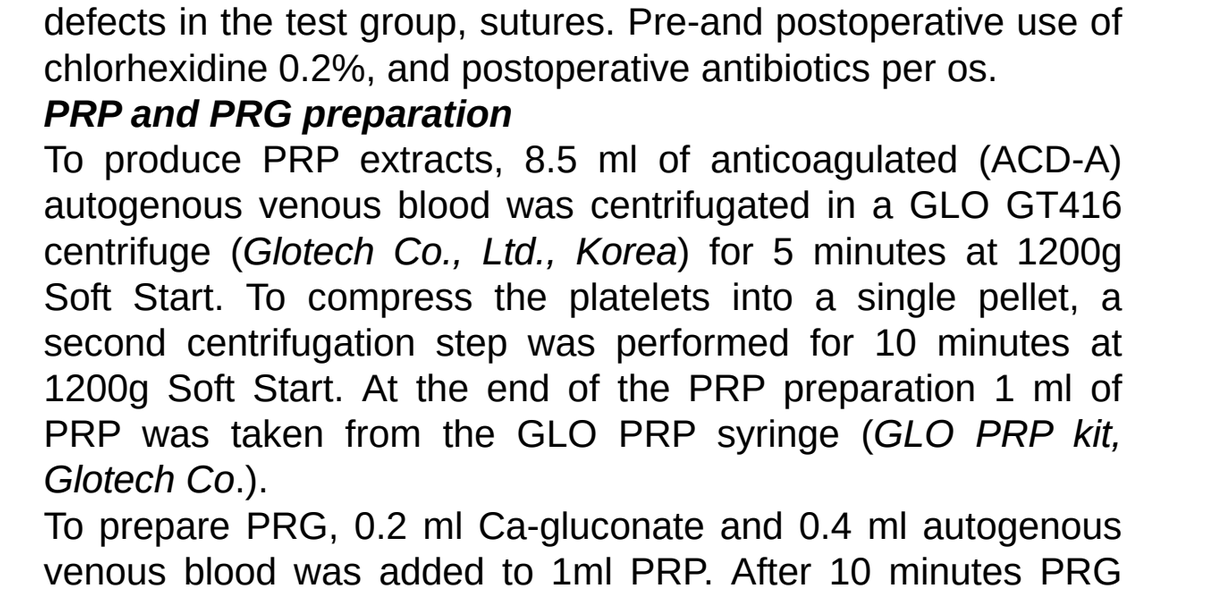


Fig. 1. PRG preparation

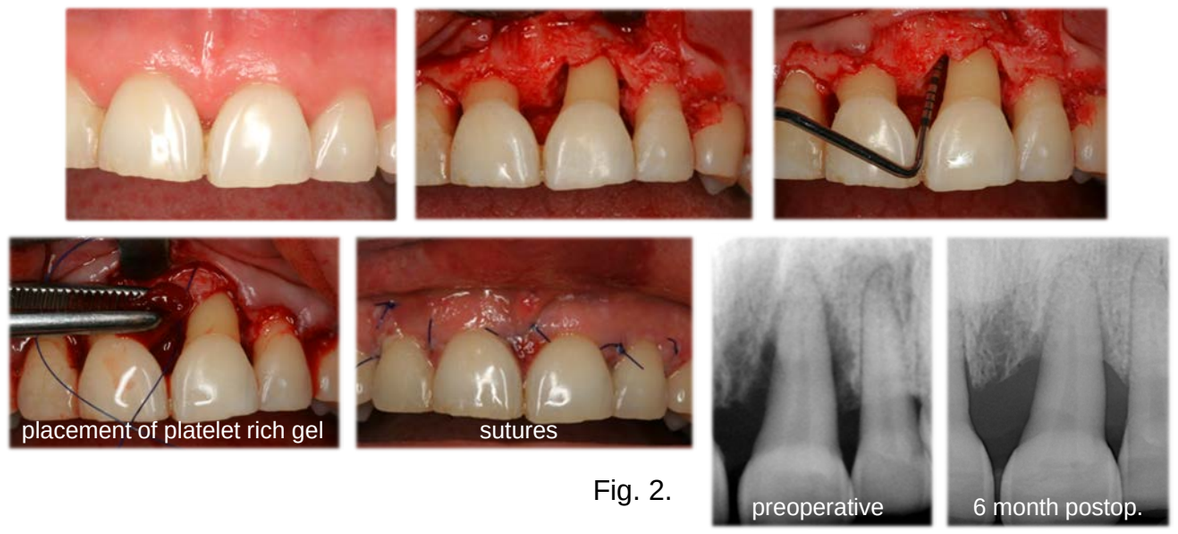


Fig. 2.

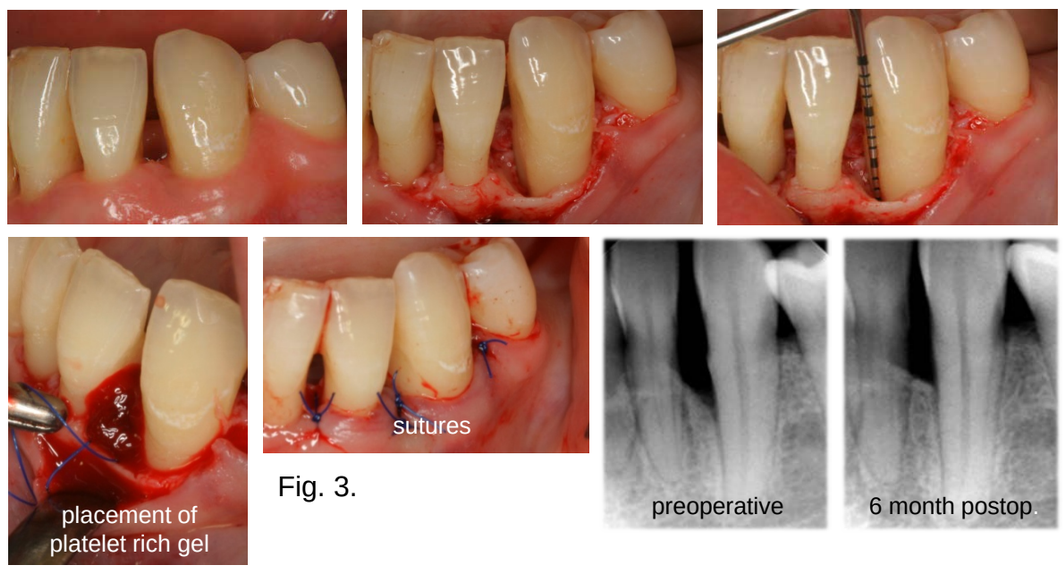


Fig. 3.

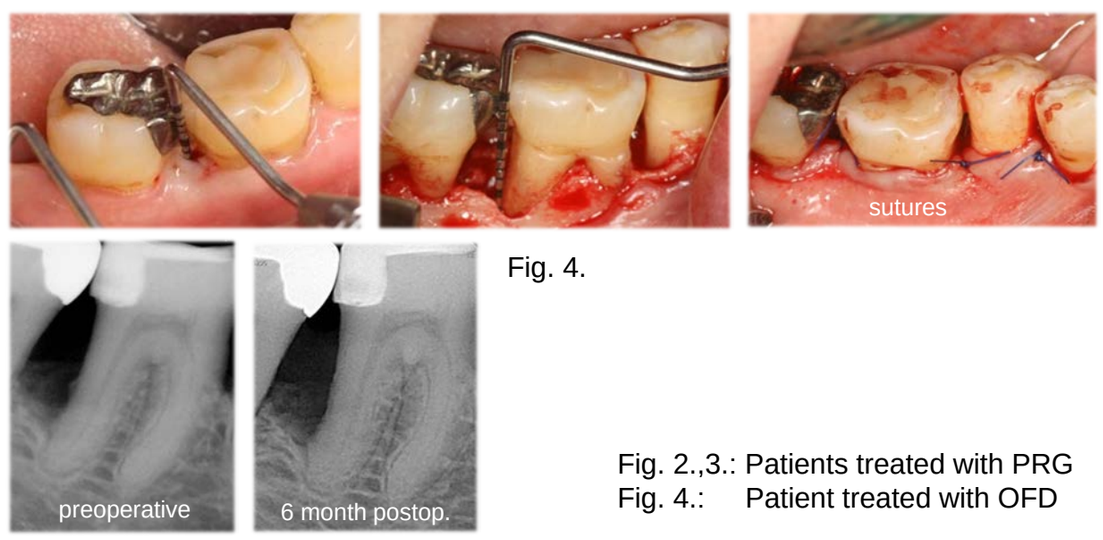


Fig. 4.

Fig. 2.,3.: Patients treated with PRG
Fig. 4.: Patient treated with OFD

Results

		PRG (test)	OFD (control)	P value
PPD (mm)	preoperative	8.50± 2.27	7.50± 0.75	n.s.
	6 month	5.00± 1.93	6.13± 1.81	n.s.
	p value	s.	s.	
BS (mm)	preoperative	9.13 ± 1.96	8.75 ± 0.707	n.s.
	6 month	6.25 ± 1.49	7.25 ± 1.28	n.s.
	P value	**s.**	**n.s.**	
CAL (mm)	preoperative	9.63± 1.77	8.13± 1.46	n.s.
	6 month	6.63± 2.07	7.88± 2.23	n.s.
	P value	**s.**	**n.s.**	

Conclusions

Over the observation period (6 month), the investigated parameters (PPD, BS, CAL) showed significant improvement in the test group. In the control group only PPD values showed significant improvement. The residual pocket depth values measured 6 month after the surgery call our attention that none of the two methods give satisfactory results regarding the pocket elimination.