

# SOFT TISSUE AUGMENTATION OF MILLER I AND II RECESSION WITH SECOND-GENERATION PLATELET-RICHED FIBRIN PRF

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- THE MUCOGINGIVAL SURGICAL MODALITY SCTG+CAF (SUBEPITHELIAL CONNECTIVE TISSUE GRAFT-SCTG + THE CORONALLY POSITIONED FLAP-CAF) IN THE TREATMENT OF MILLER I AND II GINGIVAL RECESSIONS, IS CONSIDERED "GOLD STANDARD", THAT IS, A TECHNIQUE FOR PREDICTABLE AND COMPLETE GINGIVAL ROOT COVERAGE DEFECTS, WITH LONG-TERM CLINICAL STABILITY OF THE OBTAINED RESULTS. THE COUNTERPART OF THIS TYPE OF TECHNIQUE IS THE RELATIVELY YOUNG PRF+CAF OPERATIONAL MODE, WHICH RECENTLY HAS A LARGE NUMBER OF SUPPORTERS, DUE TO THE BIOLOGICAL CHARACTERISTICS OF THIS AUTOLOGOUS PLATELET CONCENTRATE-PRF (ANGIOGENESIS, MITOGENESIS, OSTEOPROMOTION, IMMUNOMODULATION AND THE CAPTURE OF STEM CELLS).

- Case report: A 37-year-old man was admitted to the Clinic for Oral Surgery at JZU USKC "St. Panteleimon"-Skopje, for surgical treatment of localized maxillary gingival recession Miller II at 31. Periodontal clinical parameters were measured preoperatively: vertical dimension of gingival recession (RD/VGR), periodontal pocket depth (PPD/PD), level of keratinized/attached gingiva (CAL), width of keratinized gingiva (KTW/KMW) and thickness of gingiva (GT), all measured in mm, as well as gingival biotype. A CAF+PRF therapy modality was used for the treatment of the gingival defect. One month postoperatively, repeated measurements of the values of the clinical periodontal indices were performed and they were compared with the measurements obtained preoperatively.



CAF- design



Conditioning with EDTA



Application of PRF membrane



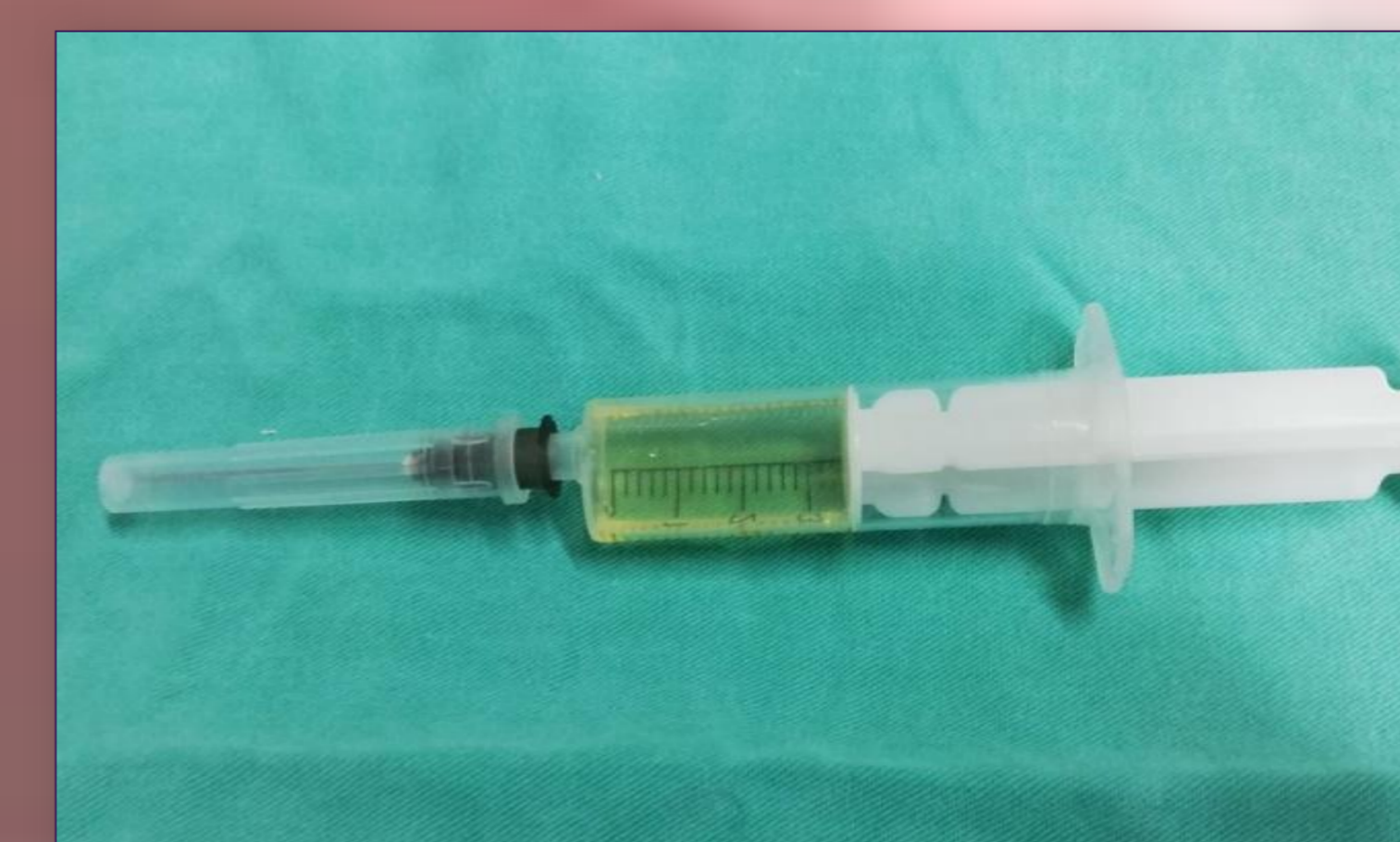
BIOBASE-machine



A-PRF and I-PRF



PRF membranes



I-PRF



Suturing

The **AIM** of this paper is to evaluate the clinical efficacy of the CAF+PRF combined technique, in the treatment of localized individual gingival recessions Miller I and II, through the comparison of the values of periodontal clinical parameters, measured preoperatively and 1 month postoperatively, as well as through the obtained immunohistochemical and histomorphometric analyzes of the taken biopsy material from the recipient site (the area of the grafted gingival defect), 1 month postoperatively.

*Table 1. Value of preoperative periodontal parameters*

Probing pocket depth PPD	Recession depth RD	Clinical attachment level-CAL (PPD+R)	Width of keratinized/attached gingiva KAW(Lang & Loe)	Biotype of the gingiva (Ochsenbien & Ross) $\leq 1.5$ =thin $\geq 2.5$ =thick	Gingival thickness mm	Class of the recession (Miller)
Hydro merenje 1	3	4	1.2	Thin	0,8	✓ I Class II Class

*Table 2. Value of postoperative periodontal parameters*

Probing Pocket Depth PPD	Recession depth RD	Clinical attachment level-CAL (PPD+R)	Width of keratinized/attached gingiva KAW (Lang & Loe)	Biotype of the gingiva (Ochsenbien & Ross) $\leq 1.5$ =thin $\geq 2.5$ =thick	Gingival thickness mm	Class of the recession (Miller)
Hydro merenje 0.5	2	2.5	1.4	Thin	1.1	✓ I Class II Class



Rete peg lenght



Zones of vascularisation

**CONCLUSION:** A significant decrease in the values of RD, PPD and CAL were determined at the 1 month measurements postoperatively. A non-significant gain in KTW and GT values was noted one month post.opp.

There were no changes in the gingival biotype before and after surgery. PRF as second generation autologous concentrates is not only an adjuvant and/or replacement of SCTG - the "gold standard" in the treatment of Miller I and II recessions, but it is also a superior alternative in the surgical treatment of this type of shallow mucogingival defects.

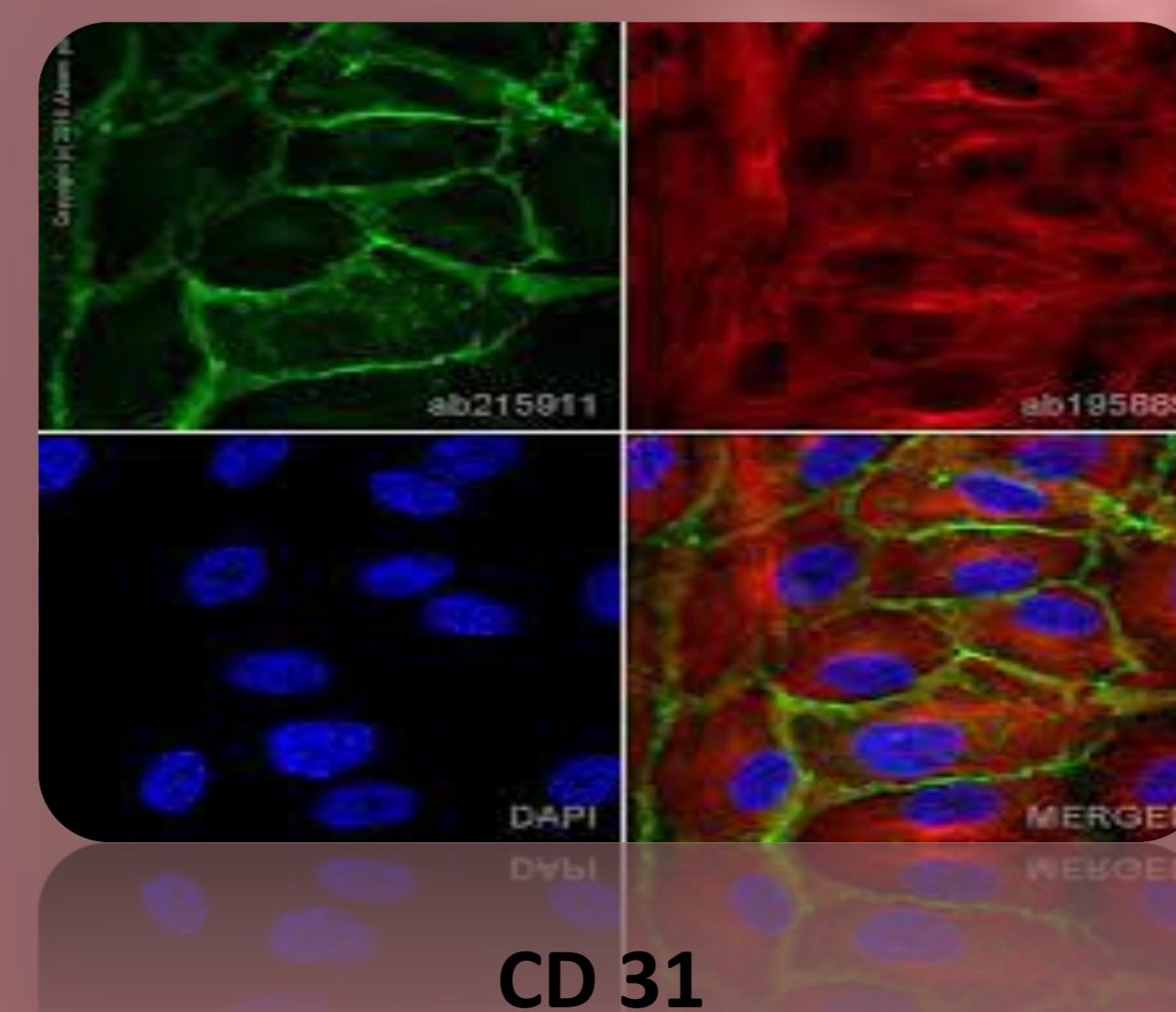
**ХИСТОПАТОЛОШКИ НАОД**

**ВИДИ НАОД!**

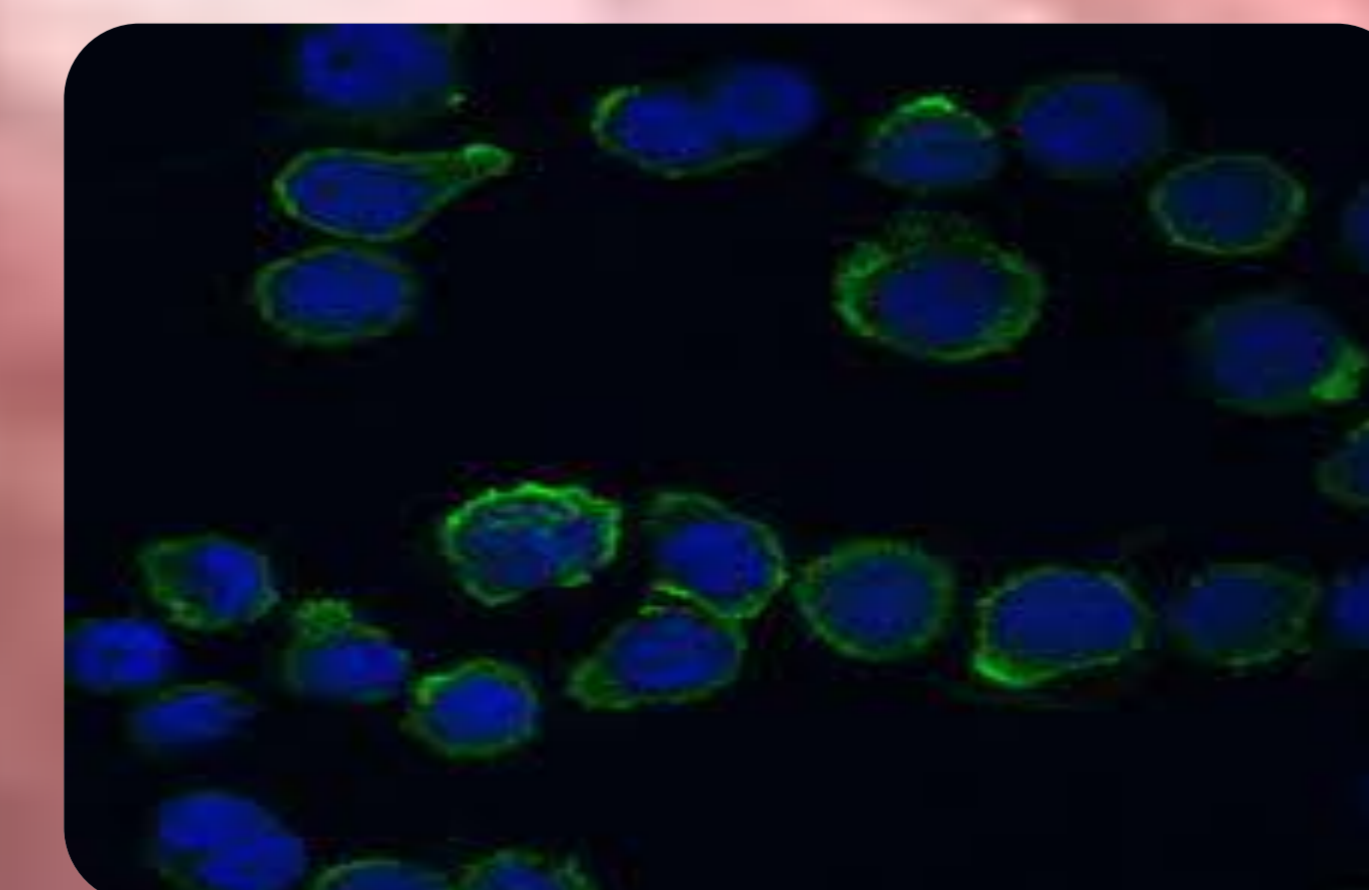
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**Макроскопски наод :**  
Доставена е „micro-gum punch“ биопсија од гингива регија 33“ со барање за “хистоморфометрија (бр. на новосоздадени крвни садови, зони на васкуларизација и должина на епителни пролиферации)”, вклучена во 1 капа за ПХА. Пресеците се боени со HeЕo и имунохистохемиски за CD 31, CD 34, VEGF.

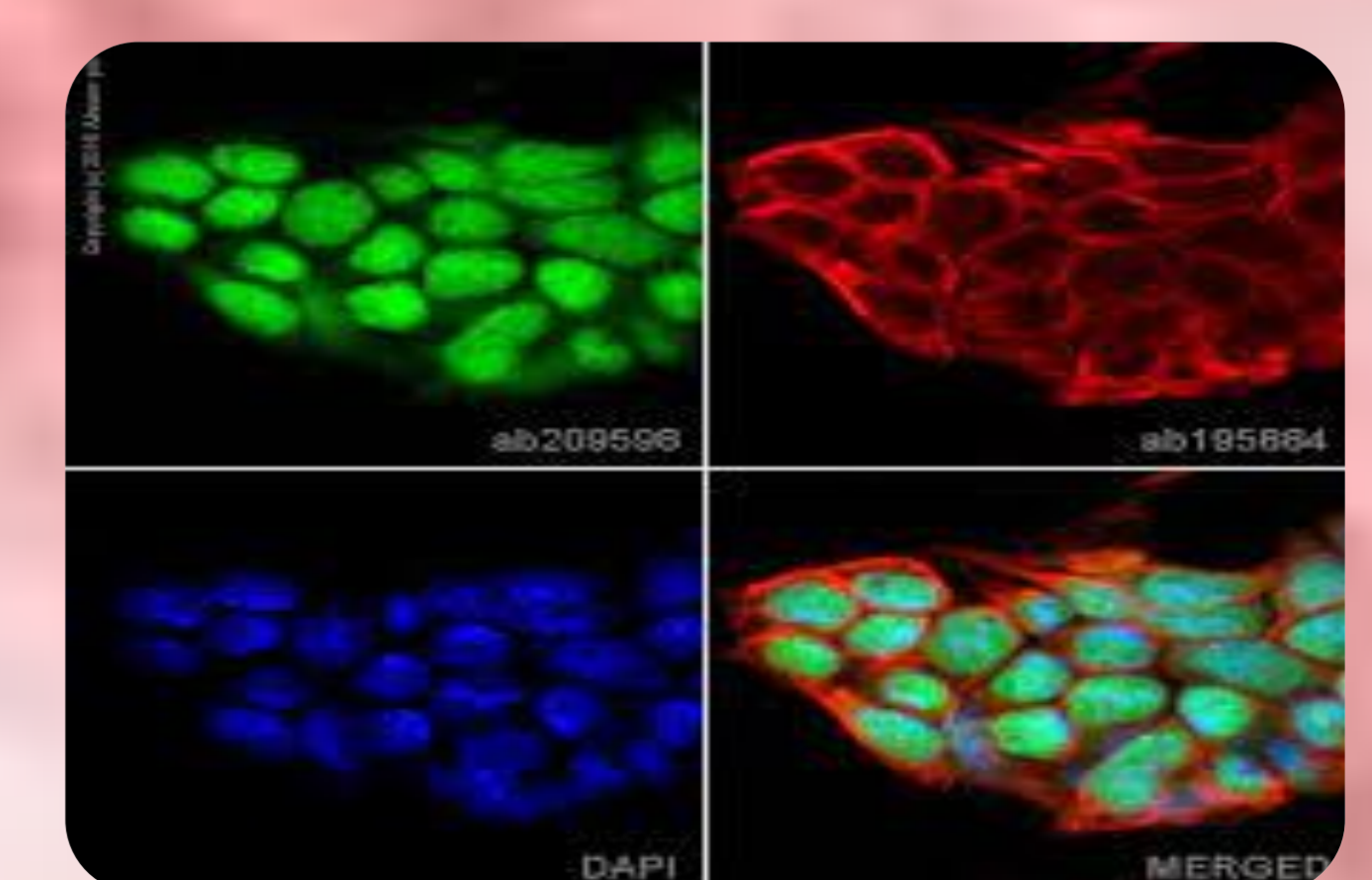
**Микроскопски наод:**  
Микроскопски на исечоците се гледа тангенцијално зафатен акантотично задебелен многуслоен плочест епител со изразена папиломатоза. Во субмукозата се гледа едем и редок монојадрен воспалителен инфилтрат. Боенјата на CD 31 и CD 34 евалуираат 25 крвни сада на ГВП (X 400) од капиларен тип. VEGF е позитивен во васкуларен ендотел.



CD 31



CD 34



VEGF