Journal of IMAB - *Annual Proceeding (Scientific Papers)* 2007, vol. 13, book 2

GINGIVAL TISSUE AUGMENTATION IN CONJUCTION WITH REGENERATIVE PERIODONTAL PROCEDURES

Christina Popova, Velitchka Dosseva
Department of Periodontology,
Faculty of Dental Medicine, Medical University - Sofia, Bulgaria.

ABSTRACT:

When discussing mucogingival surgery and surgical methods, problems related to the lack of attached gingiva, the presence of an osseous defect and/or periodontal pocket must be taken into account. If there is an osseous defect or periodontal pocket that extends beyond the mucogingival junction, it is recommendable as a pretreatment for managing the intrabony defect, to increase the attached gingiva by mucogingival surgery to facilitate periodontal flap surgery. If the width of the keratinized gingiva is inadequate in conjunction with bone defect area, it is necessary to preserve and increase the tissues with free autogenous gingival graft.

The gingival marginal region, in which the inflammatory processes of periodontal disease exist, needs to be protected by a sufficient height and thickness of attached gingival tissues (7,8). Presented case consider one point of the contemporary classification of periodontal diseases (Armitage, AAP, 1999) – the incidental attachment loss. It is recommendable to take into consideration the presence of osseous defect with localized attachment loss and lack of sufficient band of keratinized gingiva. In these cases we must apply an approach to assure adequate attached gingiva before the periodontal regenerative procedure. The free gingival graft is a simple, predictable technique for increasing the zone of attached gingival tissues (1,2,3,4)

The autogenous free gingival graft introduced by Nabers in 1966 is designed to increase the width of keratinized gingival. This procedure takes epithelium and connective tissue of the palate and locates it in to a recipient bed. This graft retains none of its own blood supply and depends upon the recipient blood vessels. For that reason it was not recommendable originally to cover denuded roots but to change the alveolar mucosa into keratinized gingival (5).

CASE REPORT: The presented case is 20 years old female with incidental periodontal tissue loss in the region of #24 and #25 because of the injurious endodontic treatment and poor fitting restorations – **fig.1**. Deep periodontal pocket (7 mm) with severe bone destruction and severe loss of gingival tissues are presented. The X-ray show the presence of two iatrogenic composite obturations with inadequate gingival margin's contours made after pulp devitalisation with arsenic paste – **fig. 2**. Second X-ray is taken after replacement of both restorations – **fig. 3**.

There are lack of attached gingiva and need of periodontal regenerative procedure. Because there is insufficient keratinized gingiva a procedure for augmentation of attached gingival tissues with free gingival graft is recommendable prior to flap operation – **fig. 4, fig. 5.**

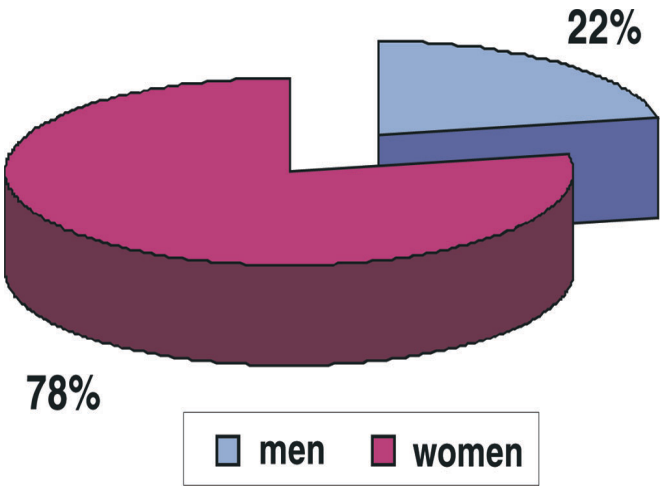
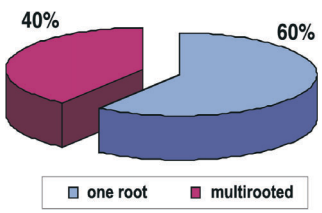


Fig. 1. Clinical view of the lost gingival tissue between #24 and #25 after incorrect endodontic treatment



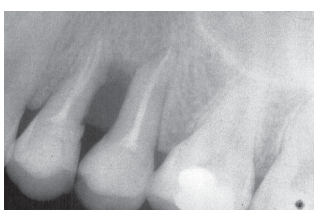
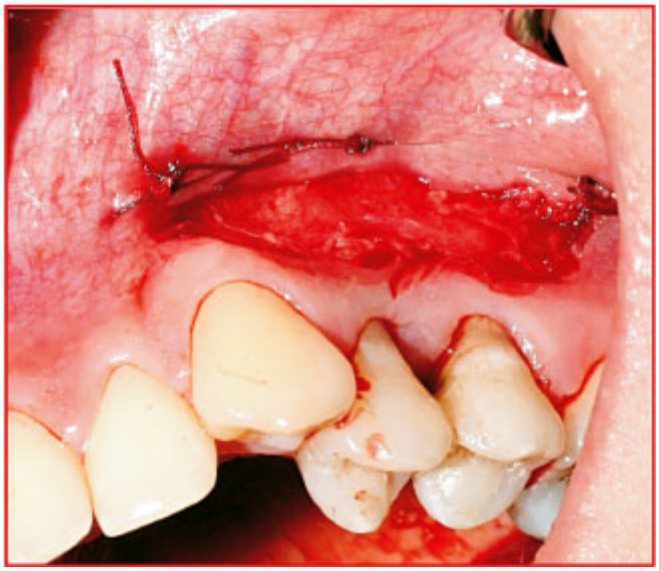


Fig. 2, 3. X-ray of the area before and after replacement of the restorations



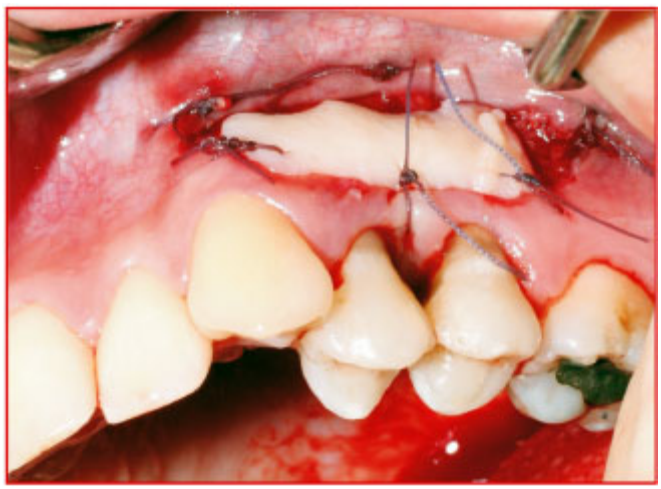


Fig. 4, 5. Free gingival graft for gingival tissues augmentation for the futures purposes of the regenerative therapy – sufficient dimensions of the gingival flap for proper covering of bone substitute and barrier membrane

RESULTS:

The measurements of the created attached gingival tissues two months after free gingival grafting are:

#24 - attached gingiva **9mm**;
#25 - attached gingiva **7mm** (**fig. 6**).

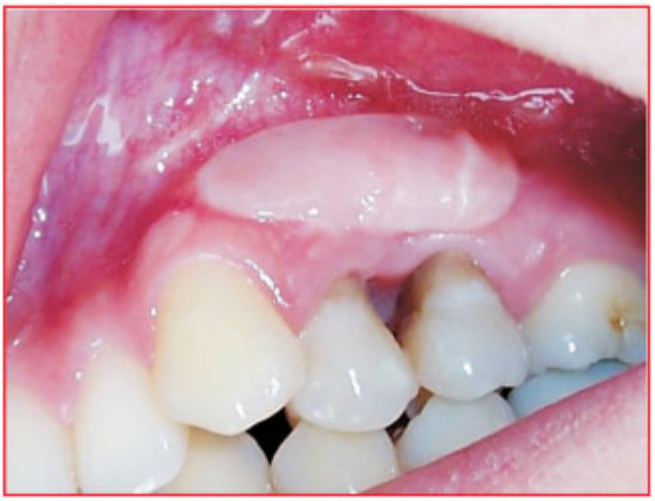


Fig. 6. Two months after grafting there is significant augmentation of the attached gingiva and it is possible to performed regenerative treatment

DISCUSSION:

In 1972, Lang and Lцe advanced the concept of the clinical significance of attached gingival - that a true minimal width of keratinized gingival tissue was necessary for health. They showed that all surfaces with less than 2 mm of keratinized gingiva exhibited clinical inflammation and varying amounts of gingival exudate. In contrast, 80% of the surfaces with more than 2 mm of keratinized gingiva were clinically healthy, and 76% of these same surfaces failed to show gingival exudate. Since 1972, the majority of studies have found that minimizing inflammation is sufficient to maintain attachment levels, even in the absence of "adequate" widths of keratinized and attached gingiva (6).

Localized attachment and bone loss in combination with insufficient keratinized gingiva is a very difficult condition for the effective periodontal treatment. We agree with suggested by Sato scheme for the selection of mucogingival surgery when a lack of attached gingiva and an osseous defect is presented – diagram 1 (4).

CONCLUSION:

The regenerative periodontal treatment in the lack of attached gingiva is more successful following free gingival grafting for gingival tissue augmentation.

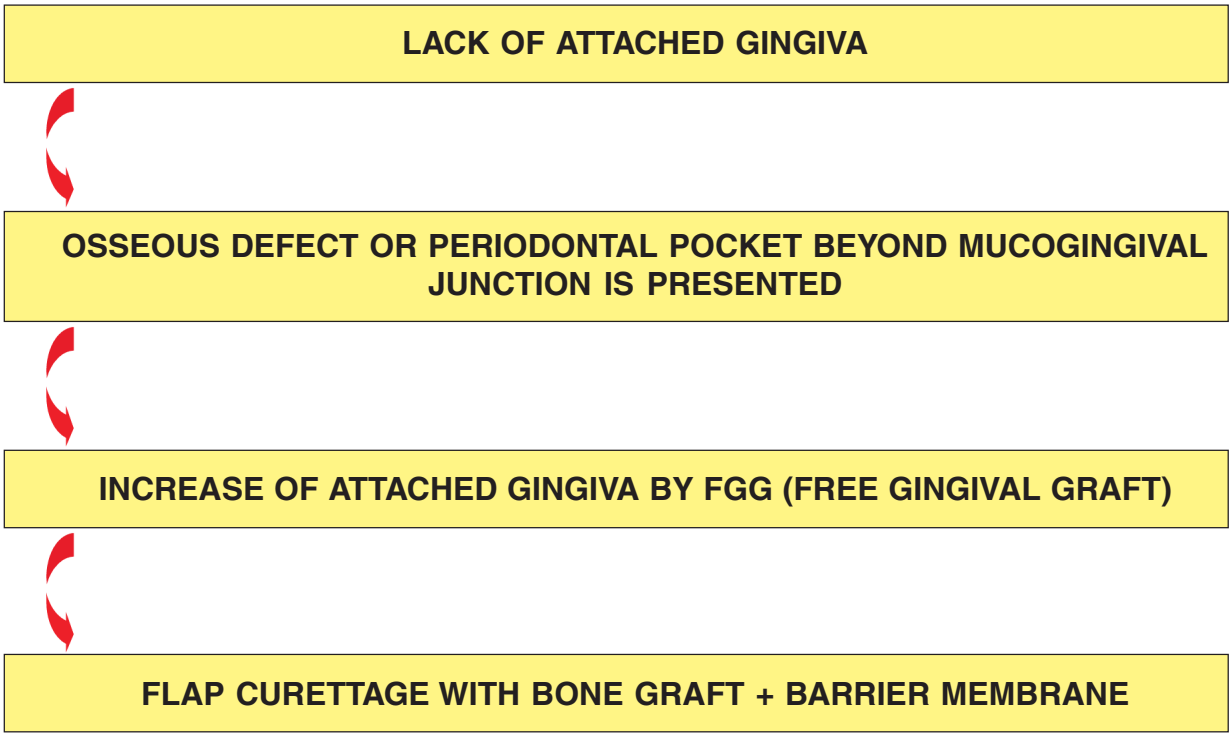


Diagram 1. Selection of mucogingival surgery (Sato 2000)

REFFERENCES:

1. Hall WB, Lundergan WP. Free gingival grafts. Current indications and techniques. Dent Clin North Am. 1993 Apr;37(2):227-42.

2. Lindhe J. Clinical periodontology and implant dentistry. 3 ed. 1998

3. Newman MG, Takei HH, Carranza FA. Carranza's clinical periodontology. Copyright 2002, ninth edition, Philadelphia, W.B. Saunders Company.

4. Sato N. Periodontal surgery. A clinical atlas. 2000, Quintessence Publishing Co, Inc.

5. Sullivan HC, Atkins JH. Free autogenous gingival grafts, I. Principals of successful grafting. Periodontics 1968; 6: 130.

6. Tackas VJ. Root coverage techniques: a review. J West Soc Periodontol Periodontal Abstr. 1995;43(1):5-14.

7. Tecucianu JF. Muco-gingival procedures (author's transl)][Article in French] Rev Stomatol Chir Maxillofac. 1979;80(1):16-7.

8. Wilson TG, Kornman KS., Newman MG. Advances in periodontics. 1992, Quintessence Publishing Co, Inc, Illinois.

Address for correspondence:
Christina Popova, PhD, DM
Department of Periodontology,
Faculty of Dental Medicine, Medical University - Sofia
1, Georgi Sofiiski str., 1431 Sofia, Bulgaria
e-mail: hrpopova@yahoo.com;
Velitchka Dosseva - vdosseva@yahoo.com;