THERAPEUTIC DIFFICULTIES IN ACHIEVEMENT OF OPTIMAL ROOT COVERAGE AND AESTHETIC IN CLASS III GINGIVAL RECESSION

Christina Popova, Antoaneta Mlachkova, Velichka Dosseva-Panova
*Department of Periodontology, Faculty of Dental Medicine,
Medical University - Sofia, Bulgaria*

SUMMARY

The width of the attached gingiva is defined as a distance between the depth of the gingival sulcus or gingival/periodontal pocket to the mucogingival junction. Authors suggest that a minimal amount of attached gingiva is necessary to ensure the gingival health. When the buccal bone plate and gingival tissues are thin and the position of the tooth is too vestibular gingival margin often displaces apically, and gingival recession develops. In the presence of gingival recession and reduced vestibular depth oral hygiene procedures are embarrassed.

The definition of class III gingival recession is marginal lack of tissue extended to/or beyond the mucogingival junction with bone and soft tissue loss interdentally or malpositioning of the tooth.

Prognosis for **class III and IV** gingival recession is that only partial coverage can be expected after root coverage procedures - FGG (free gingival graft) or connective tissue graft (CTG). Adjunctive surgical techniques would be helpful to achieve better aesthetic outcomes.

Key words: gingival recession, FGG - free gingival graft, CTG - connective tissue graft.

INTRODUCTION:

It is well accepted that deficiency or lack of attached gingiva in areas with loss of alveolar bone and progressive recessions as well as positive tension test due to frenulum are indicators for procedure of enlarging the keratinized gingival tissues. Free gingival graft is the suitable surgical approach for soft tissue augmentation [5, 9, 10, 11].

The **aim** of this presentation is to show the outcomes of FGG surgical procedures in the management of soft tissues deficiency, and the deeper and larger gingival recession in circumstances of interdentally bone loss or root caries.

MATERIALS AND METHODS:

Two different clinical cases are presented with complete lack of attached gingival tissues, vestibular bone deficiency, inconvenient occlusal relationships, and radicular caries. The technique of free gingival graft was applied for keratinized gingival tissue creation [1, 2, 8]. After first surgical step another surgical procedure was added to achieve

tooth root covering - coronally positioned flap (Fig. 1, 2, 3, 4, 5) and subepithelial connective tissue graft (Fig. 6, 7, 8, 9, 10 and 11). [3, 4, 6].

RESULTS:

After first surgery partial root coverage and successful and adequate increasing of the gingival tissues was obtained. After the second surgical step a great reduction of the gingival recessions, satisfactory root coverage, and acceptable aesthetic view in the frontal area was achieved.

CONCLUSION:

Although limited aesthetic results the free gingival graft procedure is an appropriate surgical method in the treatment of shallow vestibule, insufficient width of attached tissues and leads to enlargement of the keratinized gingiva, improvement of the plaque control, stabilization of the periodontal attachment, and play an important role for a limitation of the alveolar bone loss progression. In class III and class IV gingival recessions the FGG procedures result in a partially coverage of the previously denuded root surface and a second surgical procedure as a subepithelial CTG or coronally positioned flap are recommended [3, 5, 6, 7].

CASE 1

Fig.1. Initial view

Fig. 2. Case 1 - intraoral x-ray

Fig.4. Second surgery - flap elevation

Fig. 3. 5 months after first surgery

Fig. 5. 6 months after second surgery – almost complete root coverage of #41 and partial root coverage of #31, and attached gingiva augmentation is achieved

CASE 2

Fig. 6. Case 2 - orthopantomography

Fig.7. Initial view – Class III gingival recession

Fig. 10. Second surgery - CTG in place

Fig. 8. 8.5 months after first surgery and root caries of #31

Fig. 11. 6 months after second surgery – acceptable result with significant root coverage and stable amount of attached gingiva is achieved

Fig. 9. Second surgery - flap elevation

REFERENCES:

1. Popova Chr, AlloDerm® (AlloDerm® Regenerative Tissue Matrix) in attached gingival tissue augmentation. *Continued education*. 2012; 11(2):28-32 [in Bulgarian]
2. Popova Chr. Treatment of class II Miller localized gingival recession with free gingival graft: case reports. *Problems of stomatology*. 2005; 31(2):45-46. [in Bulgarian]
3. Bernimoulin JP, Luscher B, Muhlemann HR. Coronally repositioned periodontal flap. *J Clin Periodontol*. 1975 Feb;2(1):1-13. [PubMed]
4. Bruno JF. Connective tissue graft technique assuring wide root coverage. *Int J of Periodontics and Restorative Dentistry*. 1994 Apr;14(2):127- 137. [PubMed]
5. Holbrook T, Ochsenbein C. Complete coverage of denuded root surface with a one stage gingival graft. *Int J Periodontics Restorative Dent*. 1983; 3(3): 8-27. [PubMed]
6. Langer B, Langer L. Subepithelial connective tissue graft technique for root coverage. *J Periodontol*. 1985 Dec;56(12):715-720. [PubMed] [CrossRef]
7. Laney JB, Saunders VG, Garnick JJ. A comparison of two techniques for attaining root coverage. *J Periodontol*. 1992 Jan;63(1):19-23. [PubMed] [CrossRef]
8. Miller PD Jr. Root coverage using the free soft tissue autograft following citric acid application. I II. A successful and predictable procedure in areas of deep-wide recession. *Int J Restorative Dent*. 1985; 5(2):15-37. [PubMed]
9. Popova Chr, Boyarova Tsv. Free gingival autograft for augmentation of keratinized tissue and stabilization of gingival recessions. *J of IMAB*. 2008; 14(2):19-25.
10. Popova Chr, Dosseva V. Gingival tissue augmentation in conjunction with regenerative periodontal procedures. *J of IMAB*. 2007; 13(2):16-18.
11. Takkei HH, Azzi RR, Han TJ. Periodontal Plastic and Esthetic Surgery; Newman MG, Takei HH, Klokkevold PR, Carranza FA. Carranza's Clinical Periodontology, Tenth Edition, Saunders and Elsevier Inc., p: 1005-1009, 2006.

Address for correspondence:

Professor Ch. Popova, PhD, DM;
Department of Periodontology, Faculty of Dental Medicine,
1, Georgi Sofiiski str, 1431 Sofia, Bulgaria
E-mail: hrpopova@yahoo.com