Dental Surgery

Clinical Sheet

TREATMENT OF GINGIVAL RECESSIONS

Trapezoidal coronally advanced flap (CAF)
with graft of equine origin collagen matrix.

Dr. Giacomo Tarquini
Private Practitioner
Rome, Italy
g_tarquini@libero.it

Gingival recession refers to the process of migration of the periodontal tissue in the apical direction with respect to the cementoenamel junction resulting in exposure of the root surface of the teeth.

This condition brings about aesthetic impairment, with apparent crown elongation due to exposure of the tooth root, as well as the onset of conditions such as dentin hypersensitivity, decay and plaque buildup.

The coronally advanced flap (CAF) is among the most predictable surgical techniques in treating recessions. It entails detachment of the gingival margin and moving it in the coronal direction to cover the exposed root surfaces. When no sufficiently wide and thick keratinized tissue is found apically to the defect, the CAF technique is performed by placing under the gingival flap a graft of subcutaneous connective tissue taken from the patient's palate.[1]

[1] Langer, B. & Langer, L. Subepithelial connective tissue graft technique for root coverage. *J. Periodontol.* 56, 715–720 (1985).

Materials

The case described here entailed using Xenomatrix, the equine origin collagen matrix (BCG-XC50, Arcugnano, Bioteck,Italy).
This is a three-dimensional scaffold sized 15 x 30 x 4 mm suitable for soft tissue regeneration procedures. In fact, after grafting it acts as biocompatible matrix able to be repopulated by the patient's connective tissue cells.

Its appearance is a spongy patch with consistent density on both sides. Dry use is recommended, without saline hydration. In contact with blood, it shows adhesive properties that promote placement and stabilization.

Fig. 1 *– Element 1.3 compromised by a gingival recession associated with a non-carious cervical lesion.*

Fig. 2 *– Isolation of the site with rubber dam.*

Fig. 3 *– Element 1.3 after conservative restoration of the coronal portion of the lesion.*

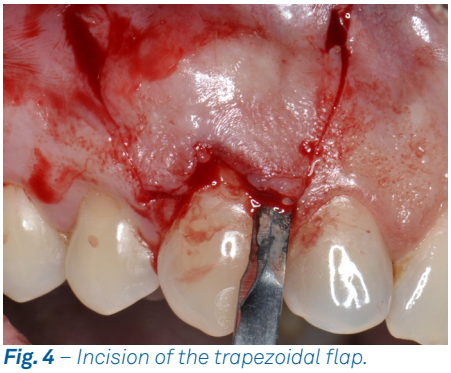

Fig. 4 *– Incision of the trapezoidal flap.*

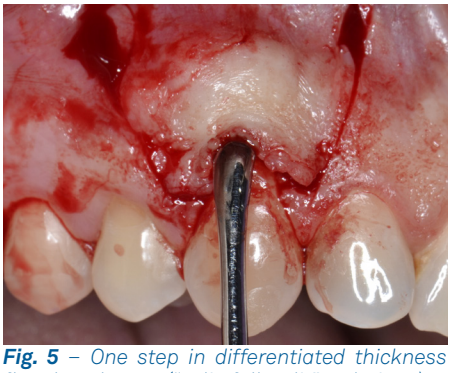

Fig. 5 *– One step in differentiated thickness flap detachment ("split-full-split" technique).*

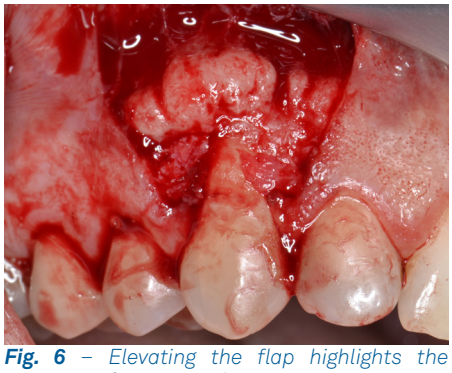

Fig. 6 *– Elevating the flap highlights the presence of an exostosis.*

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Surgery

The case describes treatment of a patient with single class I gingival recession affecting element 1.3 associated to non-carious cervical lesion. The treatment plan involved conservative restoration of the cervical portion of the lesion and execution of a coronally advanced flap with heterologous matrix graft.
The loss of substance at coronal level of the compromised element was corrected using a light curing composite resin. After that, a trapezoidal, differentiated thickness "split-full-split" flap was incised and elevated.[2] The operation highlighted the presence of an exostosis that might have interfered with optimal release and correct repositioning of the flap. It was therefore surgically removed by means of piezoelectric insert.

The collagen Xenomatrix was grafted to cover the exposed root portion. This made it possible to avoid taking subcutaneous connective tissue from the patient's palate thus limiting their post-operative discomfort.The root surface underwent debridement by mechanical means. The collagen matrix was then cut out, placed on the defect and fixed with mattress stitches with non resorbable monofilament. After ascertaining proper flap passivity, it was moved coronally assuring placement was at least 1 mm over the cementoenamel junction, then laterally fixed with non resorbable monofilament. Clinical follow-up shows the gingival margin is preserved eighteen months after the procedure.

[2] Zucchelli, G., Amore, C., Sforza, N. M., Montebugnoli, L. & De Sanctis, M. Bilaminar techniques for the treatment of recession-type defects. A comparative clinical study. J. Clin. Periodontol. 30, 862–870 (2003).

Fig. 7 *– Removal of the exostosis with piezoelectric insert; the low thickness of the insert supports quick and precise osteotomies, limiting bone tissue loss.*

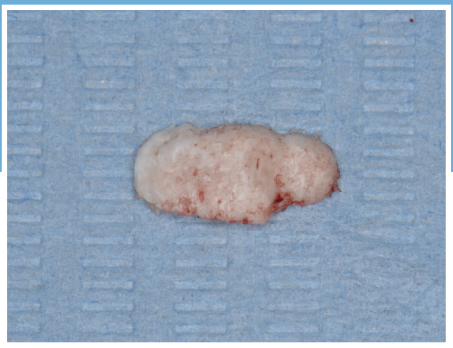

Fig. 8 *– The removed exostosis.*

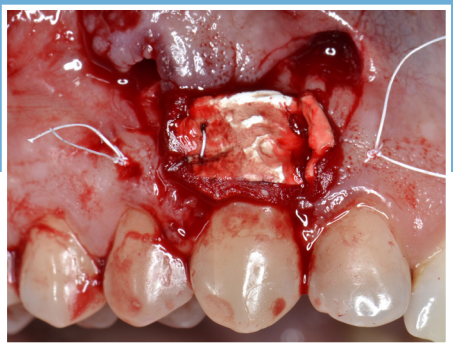

Fig. 9 *– The collagenic matrix Xenomatrix placed on the root surface and fixed laterally with mattress sutures.*

Fig. 10 *– Coronal flap extended over the cementoenamel junction. The ends of the suture lie outside the flap for convenient removal.*

Fig. 11 *– Flap suture with non resorbable sutures.*

Fig. 12 *– Follow up at eighteen months. The complete root cover appears to have been maintained and the keratinized tissue band appears to have thickened.*

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