EXTENSIVE ONE-APPOINTMENT TREATMENT FOR GINGIVAL RECESSION USING STRAUMANN EMDOGAIN

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Gingival recession is a common finding among patients, and can lead to esthetic concerns and to thermal sensitivity. Among the most common etiologies is mechanical trauma from brushing and flossing in combination with a thin gingival biotype that is susceptible to recession. Occlusal trauma and frenum pull are considered co-factors in the recession process.

Various soft tissue grafting techniques have been developed to address this problem, and have mostly included the transplantation of autogenous tissue in combination with a coronally advanced flap. Other techniques include pedicle flaps, guided tissue regeneration, and the use of allograft materials.

As a general rule for soft tissue grafting procedures, the two crucial principles for success are adequate blood supply and a receptive root. Blood supply maintains the graft’s vitality and allows its long-lasting retention on the root surface. The root surface should be free of any contaminants and restorative materials to be able to “receive” the transplanted tissue.

Advances in technology have improved the predictability of root coverage procedures. Treatment with enamel matrix proteins in conjunction with a coronally repositioned flap has been shown to be an effective treatment modality with reduced morbidity for patients. Enamel matrix proteins promote regeneration of periodontal tissue on the previously denuded root surfaces and clinicians have reported on enhanced wound healing. The technique also allows clinicians to treat up to a full arch of multiple recession lesions in one appointment. Through a systematic review, Emdogain in conjunction with a coronally advanced flap has been shown to increase the probability of obtaining complete root coverage in Miller Class I and II single gingival recessions. This procedure may be more effective when mobilizing tissues that are of adequate quality, with at least 2 mm of keratinized gingivae, emphasizing the importance of case selection. If the tissue quality is not adequate, alternative treatment options should be considered, such as the addition of an autogenous sub-epithelial connective tissue graft.

Fig. 1 Preoperative recession, minimally attached gingivae #6
Fig. 2 Preoperative recession
Fig. 3 Preoperative recession
Fig. 4 Preoperative recession
Fig. 5 Incision outline
Fig. 6 Harvested sub-epithelial connective tissue graft
Fig. 7 Split-thickness flap with Emdogain application
Fig. 8 Emdogain application on root surfaces
The following case report demonstrates the treatment of multiple recession lesions in one appointment using a coronally repositioned flap with a subepithelial connective tissue graft and enamel matrix proteins (Straumann® Emdogain).

A 38-year-old healthy female patient, presented with a chief complaint of dissatisfaction from the appearance of her smile due to multiple apparent gingival recession lesions. She recently completed orthodontic treatment and noticed an increase in recession over the 2-year treatment period.

Upon examination, generalized recession ranging from 1 mm to 4 mm was observed (Figs. 1-4). The tissue was of good quality with adequate attached and keratinized gingivae, with the exception of tooth #6. A root coverage procedure was discussed with the patient and informed consent was obtained.

The treatment plan included a coronally repositioned flap in conjunction with the application of enamel matrix proteins (Straumann Emdogain) from tooth #4 all the way across the midline to tooth #13. Due to the thin tissue on the buccal aspect of #6, the simultaneous harvest and placement of an autogenous subepithelial connective tissue graft was recommended for this specific site.

The patient was anesthetized using Lidocaine 2% with 1:100,000 epinephrine via buccal and palatal infiltration. An intrasulcular incision was made on the buccal surface of the involved teeth. The incisions were connected via a split-thickness incision from line angle to line angle at the CEJ level of each tooth (Fig 5). Once the incision line was completed, a partial-thickness flap was elevated beyond the mucogingival junction. Care was taken to not perforate the buccal flap during the sharp dissection. Any perforation can compromise the blood supply and risk the success of the procedure. The denuded root surfaces were debrided with hand instruments to ensure the principle of a “receptive root.” Periosteal release was performed from the palatal aspect of teeth #3, #4, and #5. The graft was harvested at that point, the subepithelial connective tissue graft was harvested from the palatal aspect of teeth #3, #4, and #5. The graft was then placed on a cold surface and adjusted to fit the #6 recession site (Fig. 6). Chemical root preparation followed thereafter with Straumann® PreGel® (24% EDTA) and was irrigated with sterile saline. Straumann Emdogain was then applied to all exposed root surfaces (Fig 7 and Fig. 8) and the subepithelial connective tissue graft was sutured to the interproximal papillae of tooth #6 (Fig. 9). Additional Emdogain was applied on all other root surfaces of teeth #4 to #13 and the flap was coronally positioned using 5/0 Vicryl sutures (Fig. 10). Verification of tissue stability is done by lightly pulling on the lip and making sure that there is no movement on the marginal gingival tissue. Additional Emdogain was applied on the gingival margin and the sutures.

Post-operative instructions were given to the patient. A medication regimen of systemic antibiotics (Amoxicillin 500mg TID for one week) and non-steroidal anti-inflammatory medication (Ibuprofen 600mg to be used as needed for pain) was recommended to the patient. The healing was uneventful and the sutures were removed two weeks after the surgery. Specific home care instructions were given to the patient to prevent any trauma to the surgical site in the first 6-8 weeks of healing. These included an atraumatic brushing technique and the patient was instructed to resume gentle flossing three weeks post-operatively.

In this case, 3-month follow up showed excellent healing with almost 100% root coverage on all treated teeth and the patient expressed satisfaction from the final result (Figs. 11-14). This case report demonstrates treatment of multiple recession lesions in one appointment using the coronally positioned flap with a connective tissue graft and Straumann Emdogain. The procedure was shown to be effective in achieving root coverage, with minimal morbidity for the patient and an excellent esthetic outcome.