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Treatment of Class III Recession Defect Using an Acellular Dermal Matrix

Introduction

Root recession defects are an increasingly common dental condition. We can certainly see this clinically in many patient populations, and this has been corroborated in the literature. In the US, for example, it is reported that greater than half of all adult patients have some form of gingival recession and close to 90 percent of people 65 years and above have one or more sites with recession[1]. The recent Canadian Health Measures Survey estimated that one in five adults aged 20 to 79 years had a loss of attachment of three mm or more, with severity increasing with age.[2] With such a high prevalence, it is important that dentists be knowledgeable about the diagnosis, etiology, and factors associated with gingival recession, as well as treatment options that can be offered to patients.

Importantly, it should be noted that buccal class V restorations are not an appropriate treatment for root recession defects. A root restoration should only be combined with a periodontal regenerative procedure when root caries, abfractions, or unresolved root sensitivities exist.[3]

One universally accepted method of evaluation of gingival recession is the Miller's classification system (Figure 1).[4] This system allows the practitioner to categorize the type of recession defect, and also to predict the probable amount of root coverage achieved after a periodontal treatment.

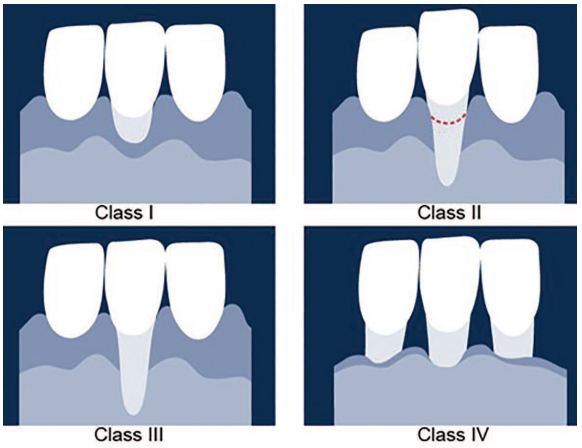

Figure 1.

Miller's Classification; Class I: Marginal tissue recession that does not extend to the mucogingival junction (MGJ). There is no periodontal loss (bone or soft tissue) in the interdental area. 100 percent recession coverage may be anticipated.

Class II: Marginal tissue recession which extends to or beyond the MGJ. There is no periodontal loss (bone or soft tissue) in the interdental area. 100 percent recession coverage may be anticipated.

Class III: Marginal tissue recession which extends to or beyond the MGJ. Bone or soft tissue loss in the interdental area is present or there is malpositioning of the teeth. Only partial coverage may be anticipated.

Class IV: Marginal tissue recession which extends to or beyond the MGJ. The bone or soft tissue loss in the interdental area and/or malpositioning is severe. Coverage cannot be anticipated, though is occasionally obtained.

Case Diagnosis and Treatment Plan

The following case illustrates a Miller's class III category recession defect treated using an acellular dermal matrix. As predicted, 100 percent recession coverage is not possible. Nonetheless, as can be seen through this case, the recession defects can be minimized and root restorations can be eliminated.

In this case, a 58-year-old healthy male presented with the lower anterior incisors showing a class III Miller's gingival recession and the root surfaces restored using bonded composite resin material. The patient was diagnosed as class III due to the amount of interdental bone loss, as can be seen by the level of papillary height in between the anterior teeth. The patient was given the option of a sub epithelial connective tissue graft (SCTG) using human donated dermis. Informed consent was received to conduct the procedure.

Clinical Procedure

Figure 2. The appearance of the mandibular anterior teeth prior to surgery. Note the level of the MGJ and the three to four mm of buccal recession on teeth 32 to 42, as well as the bonded restorations in place.

Figure 3. After removal of the bonded restorations using a high-speed handpiece, a remote incision is made that allows for introduction of the acellular dermal matrix. This technique is used as opposed to intrasulcular incisions due to the fragility of the tissues in the lower anterior mandible, especially when crossing the midline. Tissues in this area are typically thin and friable.

Figure 4. An Alan periosteal elevator is used to tunnel from the incision line across the midline and up to the gingival sulci.

Figure 5. The dermal allograft is introduced and pushed into the tunneled mucoperiosteum.

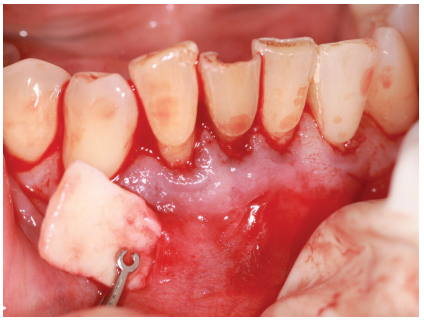

Figure 6. The allograft is gently advanced.

Figure 7. As can be seen, there is only one incision to be closed after the dermis has been placed.

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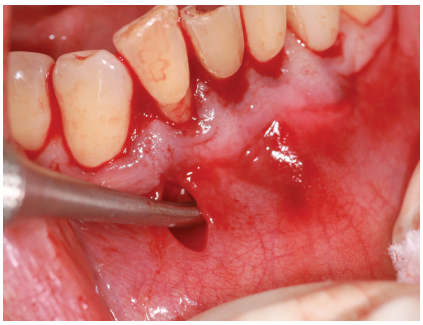

Figure 8. An instrument is used to push the dermis and position it correctly over the roots of the anterior teeth.

Figure 9. With the dermis in the correct position, we can already see the significant reduction of the gingival recession.

Figure 10. A 6–0 poly propylene suture is used to close the remote incision and one can be seen repairing a broken papilla between tooth number 32 and 33. The final position of the marginal gingiva is significantly improved.

Figure 11. At 14 days, initial soft tissue healing can be seen. Little to no tissue reaction to the sutures and the limited incision procedure has resulted in rapid and robust tissue healing.

Figure 12. Twelve months postoperatively shows goods tissue stability with limited increase in recession. Note the amount of fixed, attached tissue when compared to the original. There was no reason to re-bond the areas where the original restorations were eliminated. Also note the amount of recession is now in the one to two mm range.

Summary

Since these types of defects are so common in the general population, it is important that dentists are able to recognize and treat them, or refer them to qualified practitioners for such treatment. As demonstrated, a remote incision tunneling technique, using acellular human donated dermis, can result in a significantly improved clinical condition and a greatly reduced amount of gingival recession. This should be one of the choices for treatment presented to patients who have restored/non-restored gingival recession. A well-controlled surgical approach is important in order to have predictable, long-term success when treating Miller's class III gingival recession defects. Ultimately, these defects are treatable, and can be done so with minimally invasive, low morbidity, highly predictable periodontal procedures.

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References

1. Kassab M., Cohen R. The etiology and prevalence of gingival recession. *J Am Dent Assoc* 2003; 134(2): 220-5.
2. Health Canada. *Report on the findings of the oral health component of the Canadian Health Measures Survey 2007-2009*. Minister of Health, Government of Canada; 2010.
3. Deliberador T., Bosco A., Martins T., Nagata M. Treatment of gingival recessions associated to cervical abrasion lesions with subepithelial connective tissue graft: A case report. *Eur J Dent* 2009; 3(4): 318–323.
4. Miller P. A classification of marginal tissue recession. *Int J Perio Rest Dent* 1985; 5(2): 9-13.