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CASE REPORT

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ALLODERM FOR ROOT COVERAGE: A CASE REPORT

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ABSTRACT

The main indication for root coverage procedures is esthetic or cosmetic demand by the patient. Root coverage procedures mainly include use of pedicle soft tissue grafts or free autogenous grafts. Recently acellular dermal matrix allograft has been introduced as a substitute for donor tissue in gingival augmentation procedures.
Keywords: Allograft, Alloderm, Gingival recession.

INTRODUCTION

Obtaining predictable and esthetic root coverage has been a goal of periodontics for sometime. Fueled by patient desires for cosmetic dentistry and improved esthetics, patients are requesting- and at times demanding root coverage procedures.[1] Horizontally and vertically positioned autogenous pedicle grafts and free autogenous gingival grafts are the surgical procedures most commonly used in contemporary practice.[2] Regardless of the amount of attached gingiva present, the free autogenous graft is readily available from the palate or edentulous ridge sites; and the pedicle graft is available from the immediate site apical to the defect.[3] But a major disadvantage of these procedures is the need to create a wound at both a donor site and a recipient site. A second constraint is the limited supply of donor material that is sometimes available.[2]

Recently ADMG was introduced as a substitute for autogenous tissue grafts in periodontal plastic surgeries.[4] Acellular dermal matrix (ADMA) allograft (AlloDerm, Life Cell Corporation) was originally used in burn surgery in 1992. This allograft is a freeze-dried, acellular dermal matrix composed of a structurally integrated basement membrane complex and an extracellular matrix with collagen bundles and elastic fibers as the main components. Later, the allograft was used as an alternative to autogenous free gingival grafts to increase the amount of keratinized gingiva around natural teeth and/or dental implants. It eliminates the need for palatal autografts and prevents pain and trauma.[5] One of the greatest advantages is that allogeneic freeze-dried skin (FDS) is essentially nonimmunogenic, and therefore does not appear to stimulate the graft-rejection phenomena. An additional advantage is that FDS can be stored indefinitely in an evacuated state at room temperature and can be reconstituted readily for use when the need arises.[2] Previous reports evaluated the effectiveness of using ADMA for gingival augmentation.[6]

The purpose of this report is to describe the potential use of ADMA as a substitute for free autogenous graft in a root coverage procedure in a case with moderate localized gingival recession in anterior area.

CASE REPORT

A 38 year old female was referred by Orthodontic department, after completion of her orthodontic treatment, for evaluation and treatment of localized moderate gingival recession associated with right maxillary central incisor.

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Clinical evaluation revealed presence of Class II Miller's gingival recession defect on the buccal surface of 11. There was no loss of papilla height on the mesial and distal aspects. On radiograph, adequate bone support was present. The patient plaque control was good and was systemically healthy. Patient was explained about the procedure and informed consent was taken.

CLINICAL PROCEDURE

On the day of surgery, a periodontal abscess was observed with respect to 11 (Figure 1). But tooth was vital, so it was decided to continue with periodontal surgery. Clinical parameters were recorded with probing depth 4mm and 2mm width of attached gingiva. Gingival recession extended 5mm apical to cemento-enamel junction (CEJ) and 5mm mesio-distally. A composite button was pre-fabricated to pull the flap coronally. Following local anesthesia (2% lidocaine, epinephrine 1:100,000), the exposed root surface was thoroughly planed with the use of hand instruments. Soft tissue was elevated as a full-thickness flap, exposing the alveolar plate of bone. A 3-wall defect was present, thus DFDBA graft was placed to fill the vertical bone defect (Figure 2). ADMA was aseptically rehydrated for 12minutes in sterile saline, according to the manufacturer's instructions. The graft was trimmed to a shape and size designed to cover the root surface and atleast 2mm of the adjacent bone on each side of the root. The dermal side of the graft was placed toward the bone and root surface, and the basement membrane side was facing the gingival flap (Figure 3). The graft was secured to the wound bed with interrupted suture using 5-0 vicryl material. The flap was coronally positioned to completely cover the ADMA with the help of composite button and 3-0 silk suture. The patient was instructed to rinse twice daily with 0.2% chlorhexidine digluconate solution for 4 weeks postoperatively and to avoid trauma at surgical site. Silk sutures were removed after 10 days; visible portions of the vicryl portions of the vicryl sutures were removed after 3weeks. Patient was seen after 10 days, 3 weeks, 3 months and 6 months postoperatively. A frenum pull was observed at the end of 6 months, so frenotomy was performed. The patient was then followed up till 4 years and results were maintained (Figure 4).

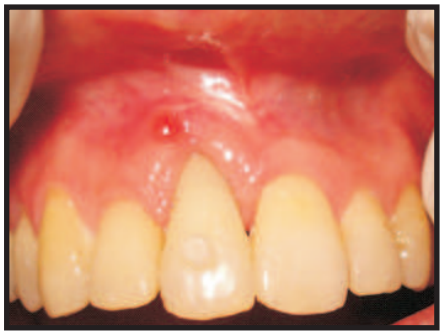

Figure 1: Pre-operative view: Gingival recession extending 5mm apical to CEJ and periodontal abscess with respect to 11

Figure 2: Full thickness flap raised and DFDBA graft placed to fill the vertical bone defect

Figure 3: ADMA designed to cover the root surface

Figure 4: Post-operative view after 4years

DISCUSSION

Healing was uneventful. At no stage was there any exposure of ADMA. At 3weeks, the gingiva at the surgical site was still edematous. At certain points, granulation tissue could be observed. Normal appearance was established at 3 months postoperatively. After 6 months postoperatively, it was recorded that 5mm recession was reduced to only 1mm and width of keratinized gingiva was also increased by 2mm. Probing depth recorded at mid-buccal site was 3mm. Patient is esthetically satisfied for 4 years now.

Within the limits of this report, it could be concluded that ADMA may provide useful substitute for free autogenous grafts; it eliminates donor site morbidity, offers unlimited tissue availability; and reduces multiple surgeries.

This study was not meant to investigate the biological aspects related to ADMA integration with the surrounding tissue. This is currently under investigation.

CONCLUSION

Root coverage can be obtained by means of several different surgical procedures. All of these procedures have their advantages and disadvantages, as well as their indications and contraindications. In this study, the amount of root coverage that was obtained with acellular dermal matrix was equivalent to the amount that could be obtained with an autogenous graft.

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