Esthetic Root Coverage of Miller's Class II Gingival Recession Using Subepithelial Connective Tissue Graft: a Case Report

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Abstract: *Marginal tissue recession is a common feature amongst Andaman & Nicobar population with high standards of oral hygiene as well as amongst population with poor oral hygiene. Recession is frequently associated with aesthetic concerns, fear of tooth loss, and root hypersensitivity. Several etiological factors that may account for it are: traumatic tooth brushing, malpositioned tooth, periodontal disease, frenum insertions, restoration with subgingival overhangs, orthodontic movement and bone dehiscence. According to Miller, cases with Class I and II show complete recession coverage whereas cases with class III are only capable of partial coverage. This case report presents a clinically successful treatment of Miller's class II gingival recession using Subepithelial connective tissue graft as a donor source for root coverage.*
Keywords: *Recession, Oral Hygiene, Aesthetics, Subepithelial Connective tissue, Graft*

Date of Submission: 24-01-2018   Date of acceptance: 13-02-2018

I. Introduction

Gingival recession is defined as "the displacement of marginal tissue apical to the cementoenamel junction (CEJ)".[1] One of the 1st classifications to be proposed was by Sullivan and Atkins. The basis for the gingival recession classification was the depth and width of the defect. The four categories were: Deep wide, shallow wide, deep narrow, and shallow narrow.[2]

Miller proposed a classification system in 1985 and probably is the most widely used for describing the gingival recession. Class II recession is defined as recession that extends to or beyond the mucogingival junction, but without loss of interproximal clinical attachment.[3]The amount of root coverage that can be achieved regardless of the procedure used is limited by the height of the adjacent papilla. Miller stated that complete root coverage can be achieved in class I and class II recession defects. Partial coverage may be achieved in the type of recession represented by class III and IV. In 1980, Langer and Langer described a subepithelial connective tissue graft for root coverage.[4]

The sub epithelial connective tissue graft is one of the most versatile and predictable periodontal plastic surgical procedures. It consists of bilaminar reconstruction of the gingiva using both free and pedicle connective tissue layers to preserve graft viability over denuded root surfaces.[5]The addition of connective tissue under any pedicle flap yields a mean exposed root coverage of 89.3%, which is better than other soft tissue grafting tissue techniques. The harvesting of donor tissue from the subepithelial connective tissue of the palate requires a complete knowledge of the anatomy of the palate. The best quality connective tissue is found closest to the teeth rather than the midline of the palate.

The aim of this case report is to describe a case of class II recession subject treated using sub epithelial connective tissue graft as well as to show the technique's success predictability when well indicated.

II. case report

A 32-year-old male patient reported to the dental department with a chief complaint of receding gum in relation to tooth # 34. The concerned tooth had recession of 4 mm on labial surface. The recession was localized and grade II according to Miller's classification in tooth 34. Patient was diagnosed with Chronic Generalized gingivitis with localized periodontitis. (Fig.1)

Fig.1 pre-operative view (miller's class 2 gingival recession tooth # 34)

I.O.P.A. radiograph in relation to the tooth 34 revealed adequate interdental bone support. The patient was medically sound and fit, so a surgical procedure was planned. Scaling and root planing was done prior to surgery. An informed consent form was explained to and signed by the patient.

On the elected day, after establishing profound local anesthesia, the marginal epithelium surrounding the tooth 34 was removed & full-thickness flap was raised up to the mucogingival junction to prepare a recipient bed. (Fig.2)

Fig.2 preparation of recipient site

After preparing the recipient site, the subepithelial conjunctive tissue graft was obtained from the palate, through the technique of two parallel incisions: one perpendicular to the tooth axis and the other parallel to the bone surface, deepening up to the desired graft height. (Fig.3)
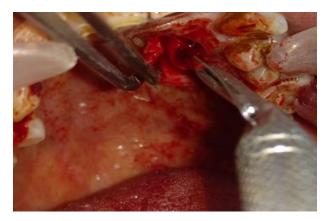
Fig.3 harvesting graft from donor site

The graft was then transferred & immobilized onto the recipient site through sutures 4-0 silk thread. The donor site was also sutured with 4-0 silk thread. (Fig.4 and 5)

Fig.4 transfer & immobilization of the graft

Fig.5 suturing done (4-0 silk)

This technique resulted in an esthetically healthy periodontium alongwith good patient's acceptance. The outcome of this procedure resulted in a clinically significant amount of root coverage. (Fig.6)

Fig.6 1 month post-operative view (clinically significant recession coverage achieved)

The success of this clinical case may be attributed to the precise indication of the technique of subepithelial conjunctive tissue graft due to the high predictability of root coverage in Miller's class I and II gingival recession.

III. Conclusion

Due to the high predictability of root coverage in Miller's Class I and Class II and dual blood supply for graft's nutrition, better maintenance of root coverage could be achieved. However, this technique presents less predictability for root coverage in Miller's Class III and IV recessions because of the difficulty of graft's adaptation and nutrition which may result in necrosis. Case selection is foremost important criteria for a successful treatment.

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