Smile is the key component of Esthetics and has an important role in the determination of the first impression of a person. The various components of the smile in dental esthetics include Gingival scaffold, lip framework, and Teeth. The periodontist creates a smile by performing various periodontal plastic microsurgery procedures for management of mucogingival problems. A 25-year-old patient reported to the Department of Periodontology at Teerthanker Mahaveer Dental College and Research Center, Moradabad, Northern India, with the chief complaint of long looking teeth in the upper jaw, making him conscious while smiling. Miller class I gingival recession with Maxillary left canine (23) was diagnosed. Periodontal plastic microsurgery employing double papilla grafting with connective tissue graft harvested from the palate in order to cover denuded root was performed using microsurgical instruments and microsuturing with 6-0 suturing material under magnification. Healing was uneventful, with achievement of 100% root coverage of denuded root after three months. The patient was highly impressed and satisfied with his enhanced smile.

Key Words: Esthetics, Gingival recession, Microsurgery, Double papilla graft, Connective tissue graft, Microsuturing

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Smile is the key component of Esthetics and has an important role in the determination of first impression of a person. Gingival architecture plays major role in creating smile. Conditions like gingival recession in esthetic zone poses challenge to a clinician. Gingival recession is defined as an apical displacement of soft tissues related to the cementoenamel junction.  

Periodontal reconstructive surgery consists of a variety of mucogingival procedures including root coverage, tooth exposure, crown exposure, vestibular deepening, papilla reconstruction, ridge augmentation, and ridge preservation. While the primary goal of these procedures is to benefit periodontal health through the reconstruction of lost hard and soft tissues or by preventing additional loss, enhancing the esthetics by improving smile.

Predictable root coverage is one of the goals of periodontal plastic surgery: enabling periodontal surgeon to solve common patient complaints associated with root exposure such as esthetic complaints, root hypersensitivity, shallow root caries lesions and cervical abrasions. The microsurgical technique has been a recent advancement in periodontal plastic surgery. The use of magnification has not only improved aesthetics but also shortened the period of healing due to minimal surgical trauma. Microsurgery is a minimally invasive technique that is performed with magnification and microsurgical instruments and suture materials. The combination of small instruments and delicate surgical technique allows for extremely fine and accurate incisions, gentle tissue handling, and precise approximation of wound margins. Keeping this goal in mind, present case report is a wonderful example of a periodontal plastic microsurgery for coverage of a denuded root.
CASE REPORT

A 29-year-old male patient reported to the Department of Periodontology, Teerthanker Mahaveer Dental College and Research Center with the complaint of long looking teeth and increasing sensitivity in upper jaw.

Detailed history was taken and gingival and periodontal status was recorded. Intraoral examination revealed class I gingival recession with maxillary left canine (23) measuring about 5 mm of denuded root surface. Etiology of gingival recession was faulty brushing technique (Fig. 1).

Following clinical and radiological examination, patient consent was obtained and phase one therapy performed consisting of thorough scaling and root planning. Correct brushing method was demonstrated.

Case was evaluated after a month. Patient maintained his oral hygiene as per the instructions given to him. Micro-surgical approach for the management of gingival recession was planned on maxillary left canine (23). The study was approved by an institutional review board.

Microsurgical instrument set was arranged for periodontal microsurgery to be performed for maxillary left canine (23). All the measurements of gingival recession were made with University of North Carolina (NC, USA)-15 periodontal probe.

Surgical technique

1. Recipient site (gingival recession)

After administration of local anesthesia, initial V-shaped beveled incisions were made in the area of the deformity on maxillary left canine to eliminate marginal tissue (0.5 to 1.0 mm). The horizontal incision was made at 90 degree angle to the gingival surface. Horizontal incision was continued as crevicular incision along the marginal gingiva of the involved tooth. Two flared vertical incision were given at both the ends of the horizontal incisions and are extended beyond the mucogingival junction into the mucosal tissue to permit adequate mobility of the flap (Fig. 2). All the incisions were made with microsurgical knife using × 4.0 magnification Galilean dental surgical loupes. Full thickness flap was elevated using micro-periosteal elevator. Root planing followed by conditioning of the root was performed with citric acid.

2. Donor site (harvesting a graft from palate)

A subepithelial connective tissue graft of masticatory mucosa was harvested from the palatal aspect of the maxillary premolars by the use of a ‘trap door’ approach (Fig. 3). Flap was re-placed after procuring the graft and sutured using 4-0 sutures. Advantage of this method is that wound remains closed and heals with primary intention without causing any discomfort to the patient.

Harvested connective tissue graft (Fig. 4) was sutured on the recession area of recipient site with 6-0 resorbable suturing.
material (Fig. 5). Double papilla flap was approximated using 6-0 and placed over the graft covering it advancing coronally and sutured with sling sutures (Fig. 6). Tin foil was placed over the surgical site followed by periodontal dressing.

Antibiotic therapy (amoxicillin 500 mg, three times a day, Novamox: Cipla, Mumbai, India) and suitable analgesic was prescribed for five days. Tooth-brushing was discontinued for the first two weeks at the surgical site. Chemical plaque control was advised.

Patient was called for suture removal after two weeks. Following removal of sutures and clinical evaluation of surgical wound was done. Clinically wound healing was satisfactory and uneventful. At the end of three months there was complete coverage of denuded root at the surgical site (Fig. 7).
DISCUSSION

Gingival recession is a common clinical entity posing various problems and challenges to a clinician. Since last six decades there has been a great evolution in the management of mucogingival problems. Recently with the introduction of magnification in periodontal practice, dental operating microscope and magnifying loupe along with the microsurgical instruments and microsurgical procedures in periodontal practice, there has been a great scope for honing the conventional surgical skills and achieving promising results especially while performing delicate periodontal plastic surgeries in esthetic zone.

In 1968, Cohen and Ross introduced double papilla flap in periodontal therapy. In 1982, Miller documented a soft tissue graft technique to cover a denuded root surface, observing a high rate of success and classified gingival recession in 1985. Langer and Langer demonstrated the technique of procuring subepithelial connective tissue graft from palate. The key concept of this technique was the double surface blood supply to the donor site. In 1986, Tarnow published a new technique of semilunar coronally repositioned flap. During mid 1980s and 2000s several root coverage procedures were evolved, such as semilunar coronally repositioned flap and supraperiosteal envelope technique. Various techniques for root coverage were in practice showing varied results. Burkhardt and Hürzeler, Burkhardt and Lang utilized surgical microscope for advanced plastic periodontal surgery and stated that due to microsurgical techniques, optimal aesthetics can be obtained in mucogingival surgery. The study on coverage of localized gingival recessions comparing macro and microsurgical techniques concluded that microsurgical approach substantially improved the vascularization of the grafts, and the percentage of root coverage compared to macroscopic approach.

A novel minimally invasive technique for the management of gingival recession employing double papilla flap with connective tissue graft under magnification and using microsurgical instruments has proved to be the best in terms of achieving complete root coverage, appropriate thickness of keratinized tissue, and better color match. There has been a faster wound healing due to reduced surgical trauma with the use of microsurgical instruments and micro sutures which is vital for the treatment of root coverage. Patient was satisfied by impressive and promising results enhancing esthetics, with confident smile on the face.

REFERENCES

8. Harris RJ, Harris AW. The coronally positioned pedicle graft with


