Mucogingival surgery & Esthetic surgery

Periodontal treatment involving procedures for correction of defects inmorphology, position and/or the amount of soft tissue (gingiva and alveolar mucosa) and underlying bone support at teeth and implants.These procedures are varied from simple *gingivectomy or *crown lengthening procedures to complex gingival grafting procedures. In patients with bone defects *GTR and *bone grafting (Guided bone regeneration, GBR) may also be employed to increase the bulk of available alveolar bone, grafting procedures generally aim to cover exposed roots, to increase the bulk of the width of keratinized gingiva and to prevent further gingival recession.

GINGIVAL RECESSION

gingival recession is the apical migration of marginal gingiva apical to the cementoenamel junction, thereby exposing the root surface to the oral environment.

PRIMARY CAUSES OF GINGIVAL RECESSION

1) Low-level and long-lasting trauma. It is also known as chronic trauma, especially due to inappropriate daily brushing, and it physically wounds gingival tissues . Traumatically using the tooth brush as well as other oral hygiene agents over delicate gingival margins on a daily basis might gradually and slowly lead to gingival recession over the years. In general, those cases are presented in combination with cervical wear as a result of abrasion caused by the same agents.

2) Chronic inflammatory periodontal disease. Tissue destruction resulting from periodontal disease encompasses gradual bone loss which might lead to apical gingival migration and root exposure.

3) Periodontal treatment. Many periodontal treatment modalities imply considerable tissue loss due to extensive periodontal disease or the need for tissue surgical removal. After surgical procedures, such as curettage and surgeries, there is a decrease in periodontal tissue tumefaction, which is

temporarily induced by inflammatory exudate accumulation. As repair evolves, there is a decrease in gingival volume and root exposure to the oral environment.

4) Occlusal trauma. Initially, primary occlusal trauma might induce symptoms characterized by diffuse pain combined with a modest increase in tooth mobility, lasting for days, weeks or even months.

PREDISPOSING FACTORS OF GINGIVAL RECESSION:

1) Decreased alveolar bone crest thickness, combined with delicate gingival margin, commonly found in maxillary canines and mandibular incisors

2) Dehiscence. Reduced buccal bone crest thickness might be associated with areas where buccal bone plate is absent - which characterizes dehiscence, when a depression is located apically to the alveolar bone cervical contour; or fenestration, when there is a bone window on the buccal surface.
3) Frenum insertion near the cervical region of gingiva. Moving labial and lingual frenula as well as cicatricial adhesions might predispose the region to gingival retraction, especially in the areas subjected to inadequate brushing associated with chronic periodontal disease.

CLINICAL ASPECTS OF GINGIVAL RECESSION:

Gingival recession might be present in some teeth separately; however, whenever it is generally present, it often affects a whole segment in the dental arch, thus horizontally retracting periodontal tissue attachment, including gingival papillae. As for shape and distribution, they might as well be:

1) Local gingival retraction

Local gingival retraction might be V- or U-shaped.

1.1) ***V-shaped local retraction*** is associated with teeth subjected to occlusal trauma, especially in patients with bruxism and clenching habits (Fig 1).

1.2) ***U-shaped local recession*** is generally associated with chronic inflammatory periodontal disease, inadequate tooth brushing or inadequate frenulum insertion (Figs 2).

2) Generalized or horizontal retraction

In its generalized or horizontal form, gingival retraction is associated with chronic inflammatory destructive periodontal disease. Loss of periodontal support in proximal areas results in compensatory remodeling on the buccal and lingual surfaces, leading to apical displacement of marginal gingiva, including interdental papillae.



Fig. 2 U shaped gingival recession



Fig. 2 V shaped gingival recession

Miller's classification:

Class I: Recession that does not extend to the mucogingival junction
Class II: Recession that extends to or beyond the mucogingival junction, but without loss of interproximal clinical attachment
Class III: Recession that extends to or beyond the mucogingival junction, with either loss of interproximal clinical attachment or tooth rotation
Class IV: Recession that extends to or beyond the mucogingival junction, with either loss of interproximal clinical attachment or tooth rotation that is severe

Gingival recession treatment

Indications:

- root sensitivity
- esthetics
- protect root surface from caries/abrasions
- improved hygiene

-If the recession is not progressing and does not provoke tooth sensitivity or poor aesthetics, then tooth- brushing instructions and regular observation through a strict maintenance program would be the optimal treatment.

Treatment techniques:

a. Advancing flaps

b. Submerged grafts

a. Advancing flaps

Advantages

a. One surgical site

b. Good vascularity of the pedicle flap.

c. Ability to cover isolated, denuded roots that have adequate donor tissue laterally.

Disadvantages

a. Limited by the amount of adjacent keratinized attached gingiva.

b. Possibility of recession at the donor site.

c. Dehiscence or fenestration at the donor site.

d. Limited to one or two teeth with gingival recession.

1.Lateral reposition flap

Indications:

a. For covering the isolated denuded root.

b. When there is sufficient width of interdental papilla in the adjacent teeth, and Sufficient vestibular depth.

Contraindications:

a. Presence of deep interproximal pockets.

b. Excessive root prominence.

c. Deep or extensive root abrasion or erosion.

2.Coronally reposition flap

Indications:

• Esthetic coverage of exposed roots.

• For tooth sensitivity owing to gingival recession.

Advantages:

• Treatment of multiple areas of root exposure.

• No need for involvement of adjacent teeth.

• High degree of success.

• Even if the procedure does not work, it does not increase the existing problem.

Crown lengthening surgery

During the procedure, the gum tissue is gently lifted off the underlying bone. Soft tissue is removed and some of the underlying bone is modified, and the gum tissue is contoured and placed in a desired new position. The teeth now look longer and the gums less prominent. **Gingival depigmentation**

- A treatment to remove the melanin hyperpigmentation.
- Melanin is the physiologic pigment of the gingiva… but conditions associated with hyper melanosis are:
- Smoking
- Drugs
- Albright syndrome
- Puetz- Jaghers syndrome
- Malignant melanoma

Treatment by scraping with surgical blades or by laser .

Frenectomy and frenotomy

A frenum is a fold of mucous membrane, usually with enclosed muscle fibers, that attaches the lips and cheeks to the alveolar mucosa and/or gingiva and underlying periosteum.A frenum becomes a problem if the attachment is too close to the marginal gingiva.Tension on the frenum may pull the gingival margin away from the tooth.This condition may be conducive to plaque accumulation and inhibit proper brushing of the

teeth with pocket formation.Also may tend to open the sulcus and gingival recession.

Frenectomy or Frenotomy

The term frenectomy is complete removal of the frenum,including its attachment to underlying bone and may be required in the correction of an abnormal diastema between maxillary central incisors. Frenotomy is the incision of the frenum and relocating the frenal attachment. Frenal problems occur most often on the facial surface between maxillary and mandibular central incisors and in the canine and premolar areas.They occur less often on the lingual surface of the mandible.

The technique for the removal of the frenum accomplished as follows:

1.After anesthetizing the area, engage the frenum with a hemostat inserted to the depth of the vestibule.

2.Incise along the upper surface of the hemostat,extending beyond the tip.

3.Make a similar incision along the undersurface of the hemostat.

4.Remove the triangular resected portion of the frenum with the hemostat.This exposes the underlying brushlike fibrous attachment to the bone.

5.Make a horizontal incision, separating the fibers,and bluntly dissect to the bone.

6.Undermining the incision to approximate the border of incisions for suturing.

7.Clean the field of operation and pack with gauze sponges until

bleeding stops.

8.Cover the area with periodontal pack.(optionally)

9.Remove the pack after 1 week (if used) .

One month is usually required for the formation of an intact mucosa with the frenum attached in its new position.

Periodontal dressing: are mainly used :

I· To protect the wound post surgically

2-To obtain and maintain a close adaptation of the mucosal flaps to the

underlying bone (especially when a flap has been repositioned apically)

3-For the comfort of the patient

4-Prevent post operative bleeding during the initial phase of healing

5-Prevent the formation of excessive granulation tissue

Periodontal dressing should have the following properties: 1-Should be

soft but still have enough plasticity and flexibility to facilitate its

placement in the operated area and to allow proper adaptation.

2-Should harden within a reasonable time

3-After setting should be sufficiently rigid Io prevent fracture and dislocation.

4-Should have a smooth surface after setting to prevent irritation to the

check and lips

5-Should preferably have bactericidal properties to prevent excessive

plaque formation

6-Not detrimentally interfere with healing

Types of dressing

I-Zinc-oxide eugenol pack: eugenol in this type may induce an allergic reaction

2-Non eugenol pack: e.g. Coe pack; one tube contain zinc oxide and lorothidol (Fungicidal) and the second tube contain non ionizing carboxilic acids and chlorothymol (bacteriostatic agent)

3-Light cured dressing