**Periodontal surgery**

 **Part 4** **Dr.Huda Jasim Jebur**

**Suturing**

At the end of surgery, the flaps are placed in the intended position and that they are properly adapted to each other and to the tooth surfaces. Therefore, prior to suturing, the flap margins should be trimmed to properly fit the buccal and lingual (palatal) bone margin as well as the interproximal areas; excessive soft tissue must be removed. Sutures should not interfere with incision lines and must not pass through the tissues near the flap margins or too close to a papilla, because this may result in tearing of the tissues. The use of non‐irritating, mono‐filamentous materials is recommended. “Wicking”, the phenomenon of bacteria moving along or within multistranded suture materials, particularly silk, is also avoided. The dimensions usually preferred are 4/0 or 5/0, but even finer suture material (6/0 or 7/0) may be used. Sutures are removed after 7–14 days.

Since the flap tissue following the final preparation is thin, either curved or straight non‐traumatic needles (eyeless), with a small diameter, should be used. In the latter case, a reverse‐cutting needle should be selected.

**Technique**

The three most frequently used sutures in periodontal flap surgery are:

• **Interrupted interdental sutures**

**• Suspensory sutures**

**• Continuous sutures.**

* **The interrupted interdental suture:** provides a close interdental adaptation between the buccal and lingual flaps with equal tension on both units. This type of suture is therefore not recommended when the buccal and lingual flaps are repositioned at different levels. When this technique of suturing is employed, the needle is passed through the buccal flap from the external surface, across the interdental area, and through the lingual flap from the internal surface, or vice versa.
* In order to avoid having the suture material between the mucosa and the alveolar bone in the interdental area, an **alternative technique** with the **interrupted interdental suture** can be used if the flaps have not been elevated beyond the mucogingival line .With the use of a curved needle, the suture is anchored in the attached tissue on the buccal aspect of the proximal site, brought to the lingual side through the proximal sites, and anchored in the attached tissue on the lingual side.The suture is then brought back to the starting point and tied .Hence, the suture will lie on the surface of the interdental tissue, keeping the soft tissue flaps in close contact with the underlying bone.
* In **regenerative procedures**, which usually require **a coronal advancement of the flap**, a **modified mattress suture** may be used as an interdental suture to secure close flap adaptation .As for the interruptedsuture, the needle is passed through the buccal flap from the external surface, across the interdentalarea, and through the lingual flap from the internal surface. The suture is then run back to the buccal sideby passing the needle through the lingual and buccal flaps. Thereafter, the suture is brought through theapproximal site coronally to the tissue, passed through the loop of the suture on the lingual aspect, and then brought back to the starting point on the buccal side and tied.
* **The suspensory suture**: is used primarily when the surgical procedure is of limited extent and involves only the tissue of the buccal or lingual aspect of the teeth. It is also the suture of choice when the buccal and lingual flaps are repositioned at different levels. The needle is passed through the buccal flap from its external surface at the mesial side of the tooth, the suture is placed around the lingual surface of the tooth, and the needle is passed through the buccal flap on the distal side of the tooth .The suture is brought back to the starting point via the lingual surface of the tooth and tied. If a lingual flap has been elevated as well, this is secured in the intended position using the same technique.
* **The continuous suture**:is commonly used when flaps involving several teeth are to be repositioned apically. When flaps have been elevated on both sides of the teeth, one flap at a time is secured in its correct position. The suturing procedure is started at the mesial/distal aspect of the buccal flap by passing the needle through the flap and across the interdental area. The suture is laid around the lingual surface of the tooth and returned to the buccal side through the next interdental space. The procedure is repeated tooth by tooth until the distal/mesial end of the flap is reached. Thereafter, the needle is passed through the lingual flap , with the suture laid around the buccal aspect of each tooth and through each interproximal space. When the suturing of the lingual flap is completed and the needle has been brought back to the first interdental area, the positions of the flaps are adjusted and secured in their proper positions by closing the suture .Thus, only one knot is needed.

**Periodontal dressings**

Periodontal dressings are mainly used:

• To **protect** the wound post‐surgically

• To obtain and maintain a **close adaptation** of the mucosal flaps to the underlying bone (especially when a flap has been repositioned apically)

• For the **comfort** of the patient.

•Periodontal dressings can prevent postoperative **bleeding** during the initial phase of healing

•If properly placed in the operated segment (especially interproximally), prevent the formation of **excessive granulation tissue**.

* **Periodontal dressings should have the following properties**:

• Soft, but with enough plasticity and flexibility to facilitate placement in the operated area and to allow proper adaptation.

• Hardens within a reasonable time.

• After setting, sufficiently rigid to prevent fracture and dislocation.

• Smooth surface after setting to prevent irritation of the cheeks and lips.

• Preferably, bacteriocidal properties to prevent excessive plaque formation.

• Must not detrimentally interfere with healing.

* **Types of periodontal dressing**

**1-Coe‐PakTM (GC America Inc., USA)**

A commonly used periodontal dressing , which is supplied in two tubes. One tube contains oxides of various metals (mainly zinc oxide) and lorothidol (a fungicide). The second tube contains non‐ionizing

carboxylic acids and chlorothymol (a bacteriostatic agent). Equal parts from both tubes are mixed together immediately prior to insertion. Adding a retarder can prolong the setting time of the dressing.

**2-BarricaidTM (Dentsply Caulk., Milford, DE, USA)**

 A light‐cured dressing is useful in the anterior tooth region and particularly following mucogingival surgery, because it has a favorable esthetic appearance and it can be applied without dislocating the soft tissue. However, the light‐cured dressing is not the dressing of choice for situations where the flap has to be retained apically, due to its soft state before curing.

**3-Cyanoacrylates**

 These dressings are applied in a liquid directly on to the wound, or sprayed over the wound surface.

* **Application technique**

 Ensure that bleeding from the operated tissues has ceased before the dressing material is inserted. Carefully dry the teeth and soft tissue before application for optimal adherence of the dressing. Moisten the surgical gloves to avoid the material sticking to the fingertips.

 When using the Coe‐PakTM dressing material, the interproximal areas are filled first. Thin rolls of the dressing, adjusted in length to cover the entire field of operation, are then placed against the buccal and lingual surfaces of the teeth. The rolls are forced into the interproximal areas. It is important to ensure that dressing material is never introduced between the flap and the underlying bone or root surface. Excess material is removed with a suitable instrument (a knife or finishing burs in a low‐speed handpiece). The dressing should not cover more than the apical third of the tooth surfaces.

Furthermore, interference of the dressing with mucogingival structures (e.g. vestibular fold, frenula) should be carefully checked to avoid displacement of the dressing during normal function.

**Postoperative pain control**

In order to minimize postoperative pain and discomfort for the patient, surgical handling of the tissues should be as a traumatic as possible. Care should be taken during surgery to avoid unnecessary tearing of the flaps, to keep the bone moistened, and to secure complete soft tissue coverage of the alveolar bone at suturing. With a carefully performed surgical procedure, most patients will normally experience only minimal postoperative problems.

**Post‐surgical care**

Postoperative plaque control is the most important variable in determining the long‐term result of periodontal surgery. Since self‐performed oral hygiene is often associated with pain and discomfort during the immediate post‐surgical phase, regularly performed professional tooth cleaning is a more effective means of mechanical infection control following periodontal surgery.

In the immediate post‐surgical period, self‐performed rinsing with a suitable antiplaque agent, for example twice daily rinsing with 0.1–0.2% chlorhexidine solution, is recommended.

Following suture removal, the surgically treated area is thoroughly irrigated with a dental spray and the teeth are carefully cleaned with a rubber cup and polishing paste. If the healing is satisfactory for starting mechanical tooth cleaning, the patient is instructed in gentle brushing of the operated area using a toothbrush that has been softened in hot water. In this early phase following surgical treatment, the use of interdental brushes is abandoned due to the risk of traumatizing the interdental tissues. Visits are scheduled for supportive care at 2‐week intervals to monitor the patient’s plaque control closely.

"Always remember that you are absolutely unique. Just like everyone else."

Margaret Mead