In The Name of God

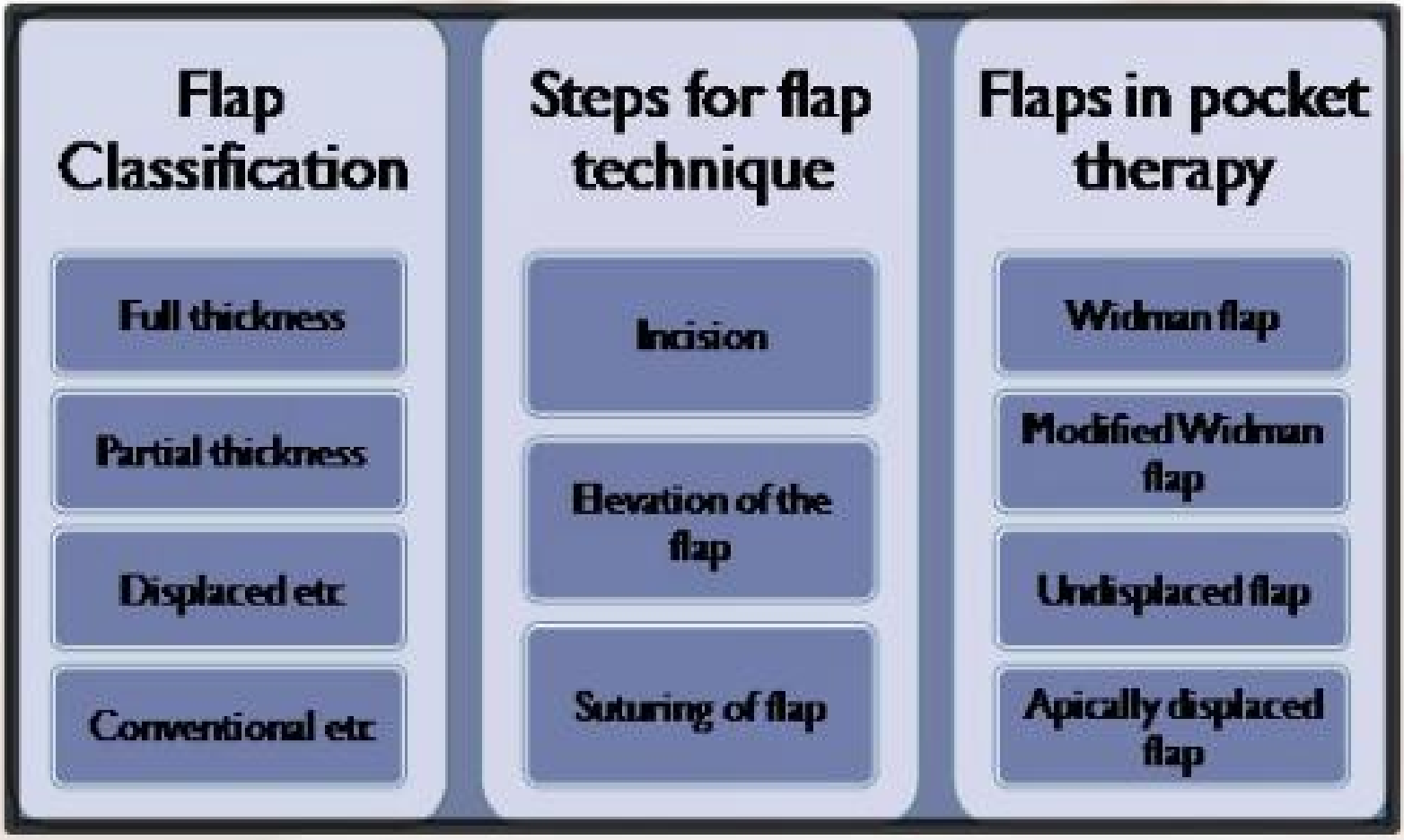
PERIODONTAL FLAPS

Dr.Banafsheh.Poormoradi

DDS, MSC of periodotics

Fellowship of laser of Genova, Italy

Introduction to Flap Techniques



Classification of Flaps

Bone exposure after flap reflection

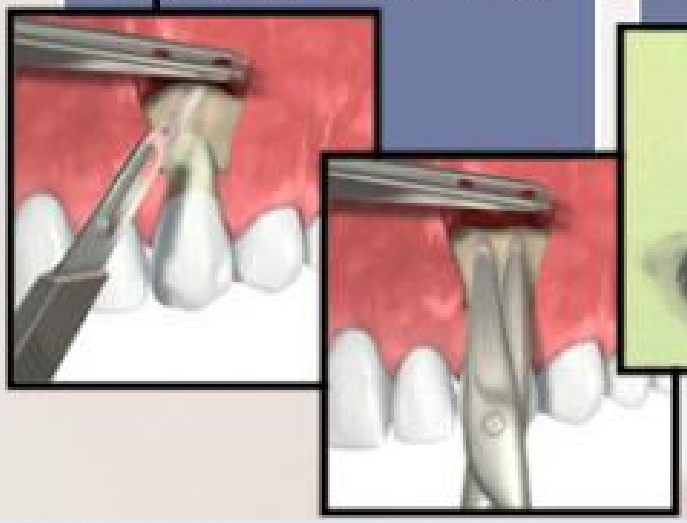
- full-thickness flaps
- partial-thickness

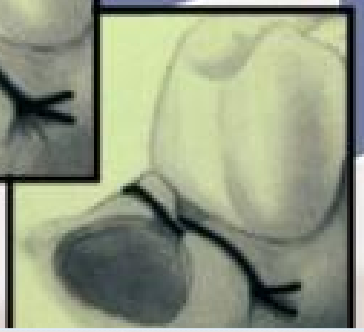
Placement of flap after surgery

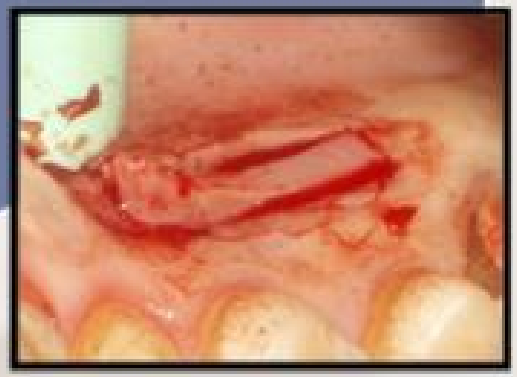
- non-displaced flaps
- displaced flaps

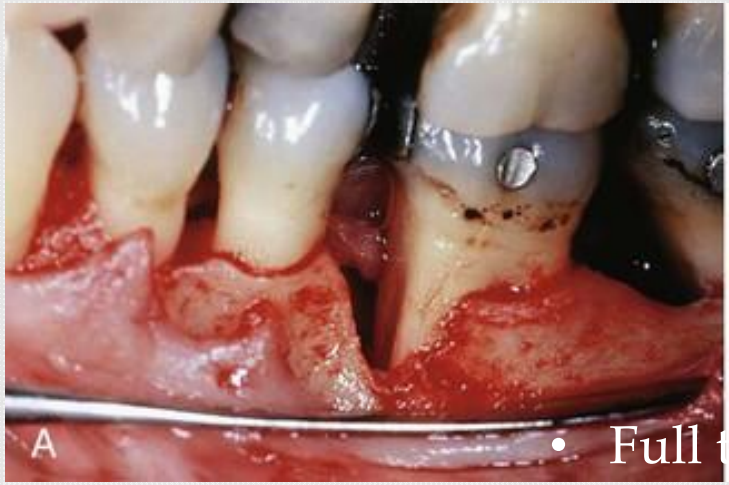
Management of papilla

- conventional flap(split the papilla)
- papilla preservation flap

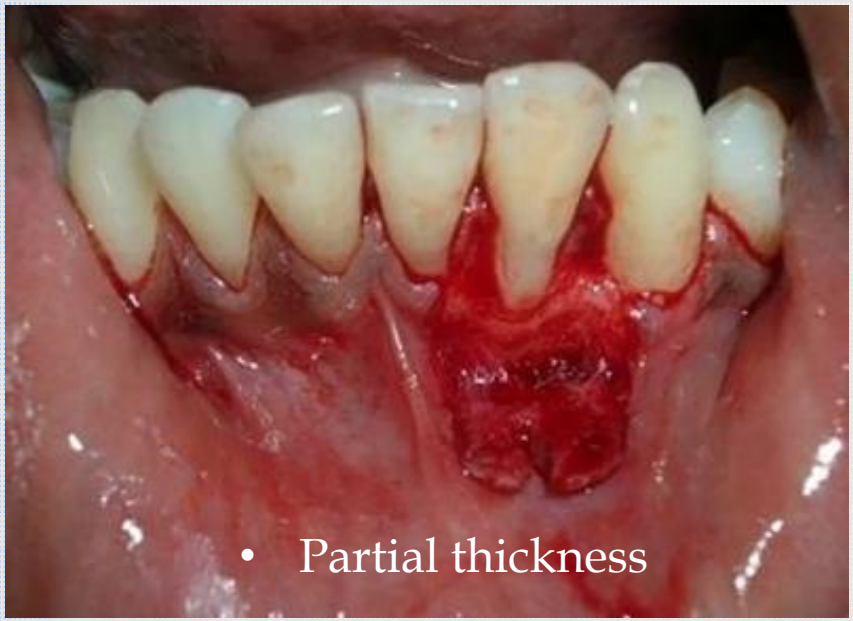




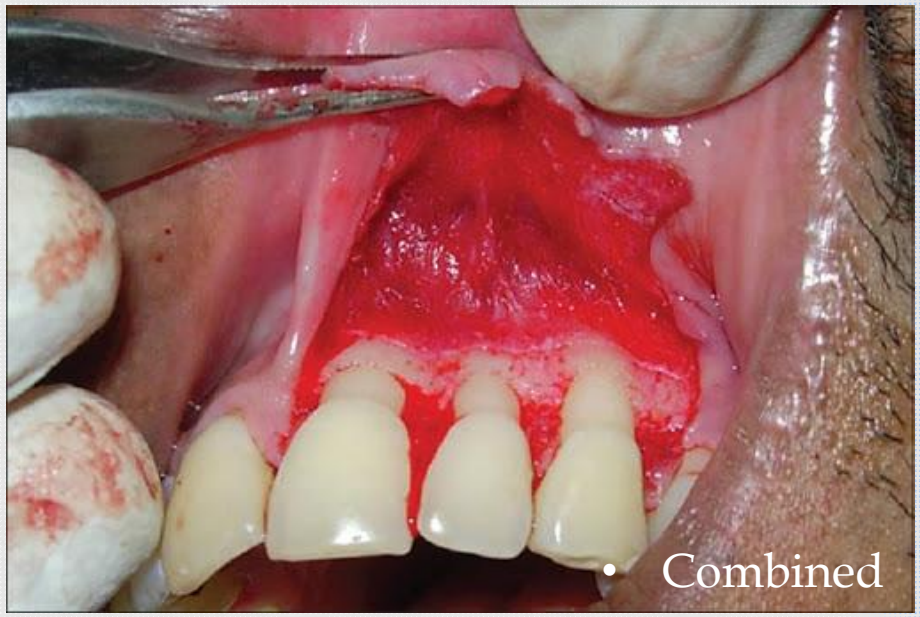




- Full thickness



- Partial thickness

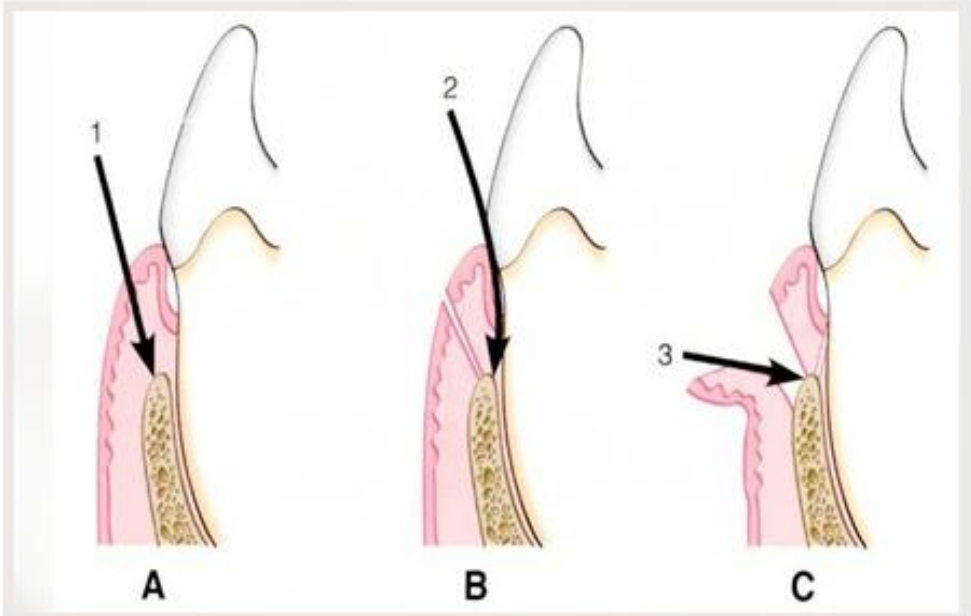


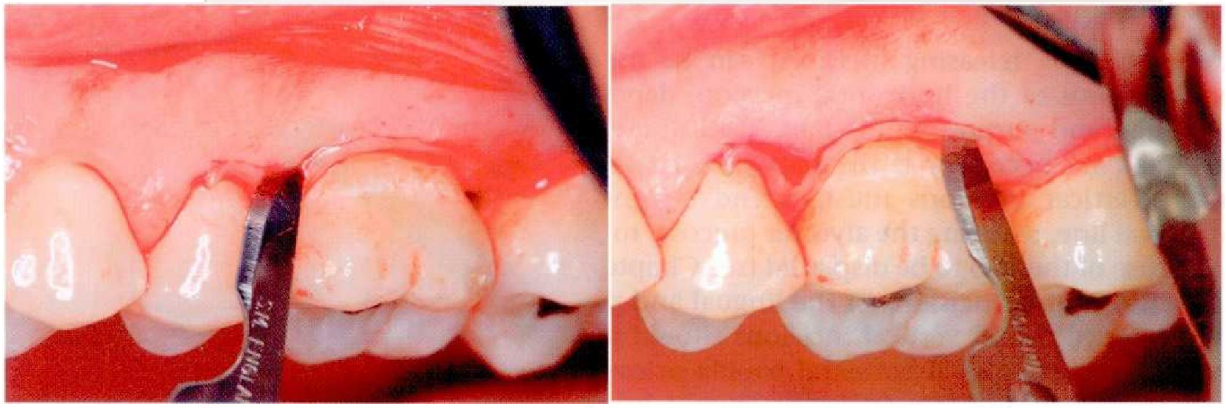
- Combined

Incisions

Three incisions are necessary in horizontal direction

- Internal bevel incision
- Crevicular incision
- Interdental incision





INCISIONS

- **Vertical Incisions**

➢ Incisions should be made at the line angles of a tooth either to include the papilla in the flap or to avoid it completely or incising directly over a radicular surface.

➢ vertical incisions in the lingual and palatal areas are avoided.

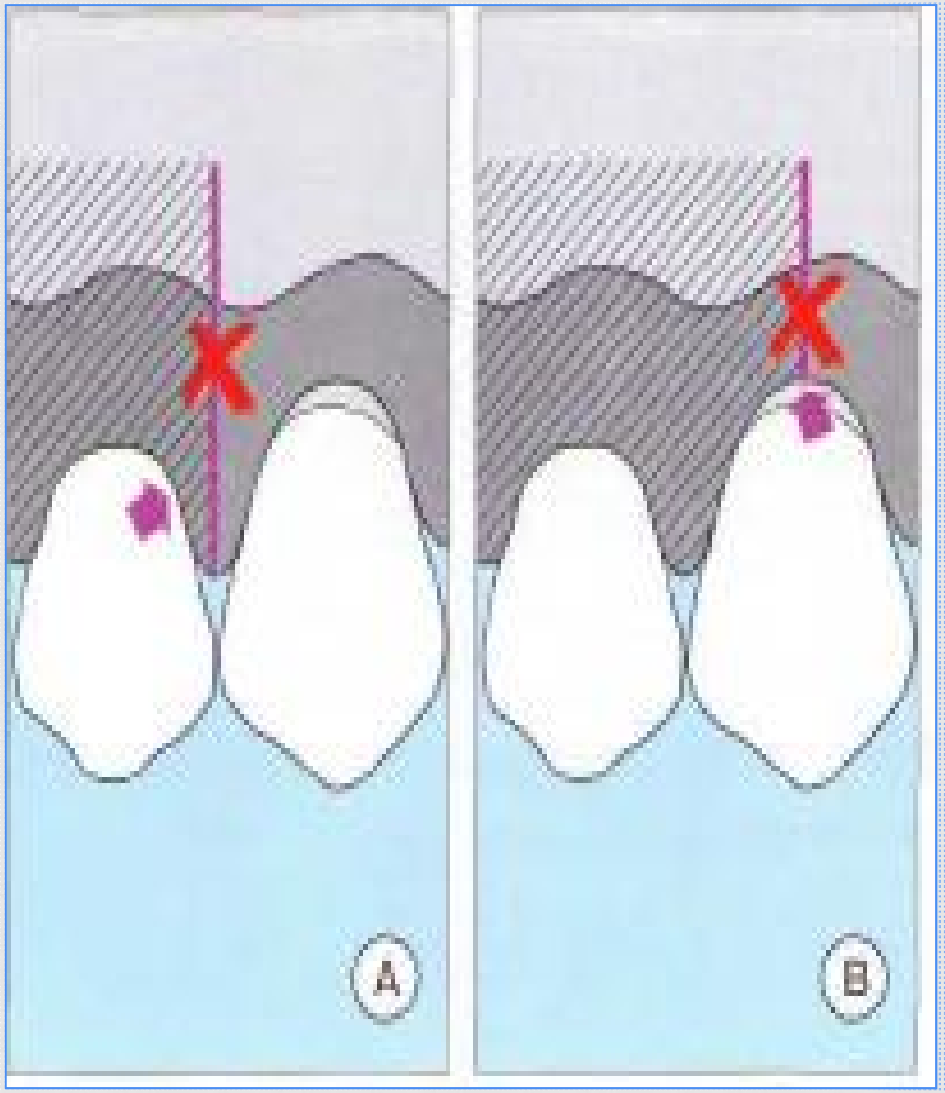
➢ Facial vertical incisions should not be made in the center of an interdental papilla or over the radicular surface of a tooth.

Vertical sections and relaxing sections

Unfavorable location:

A. If the cut goes through the papilla, there is risk of recession and loss of interdental papilla.

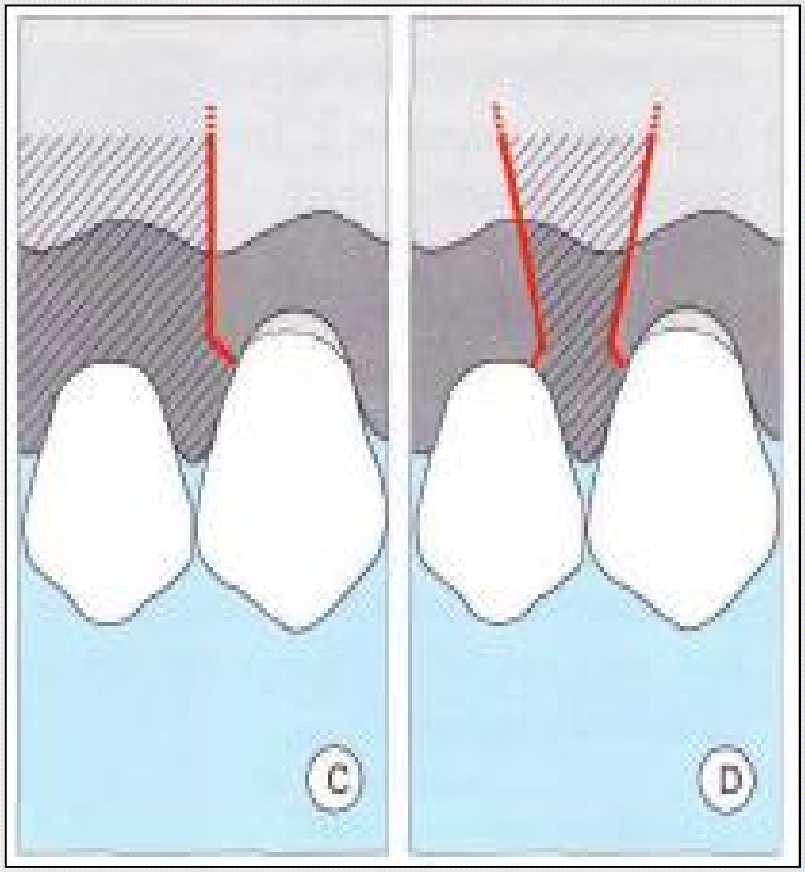
B. The middle section is undesirable
in the presence of vestibular pocket, as it increases the probability of gum recession.



The favorable location:

C. The section at the side of midline does not
leads to significant shrinkage and is better for healing.

D. For the treatment of local defects it is
recommended a triangular flap, to unfold it ,
two paramedial sections is conducted.



Indications for periodontal surgery

- ✓ Areas with irregular bony contours or deep craters.
- ✓ Pockets on teeth in which a complete removal of root irritants is not considered clinically possible. (molars).
- ✓ In cases of grade II or III furcation involvement.
- ✓ Infrabony pockets in distal areas of last molars.
- ✓ Persistent inflammation in areas with moderate to deep pockets may require a surgical approach.

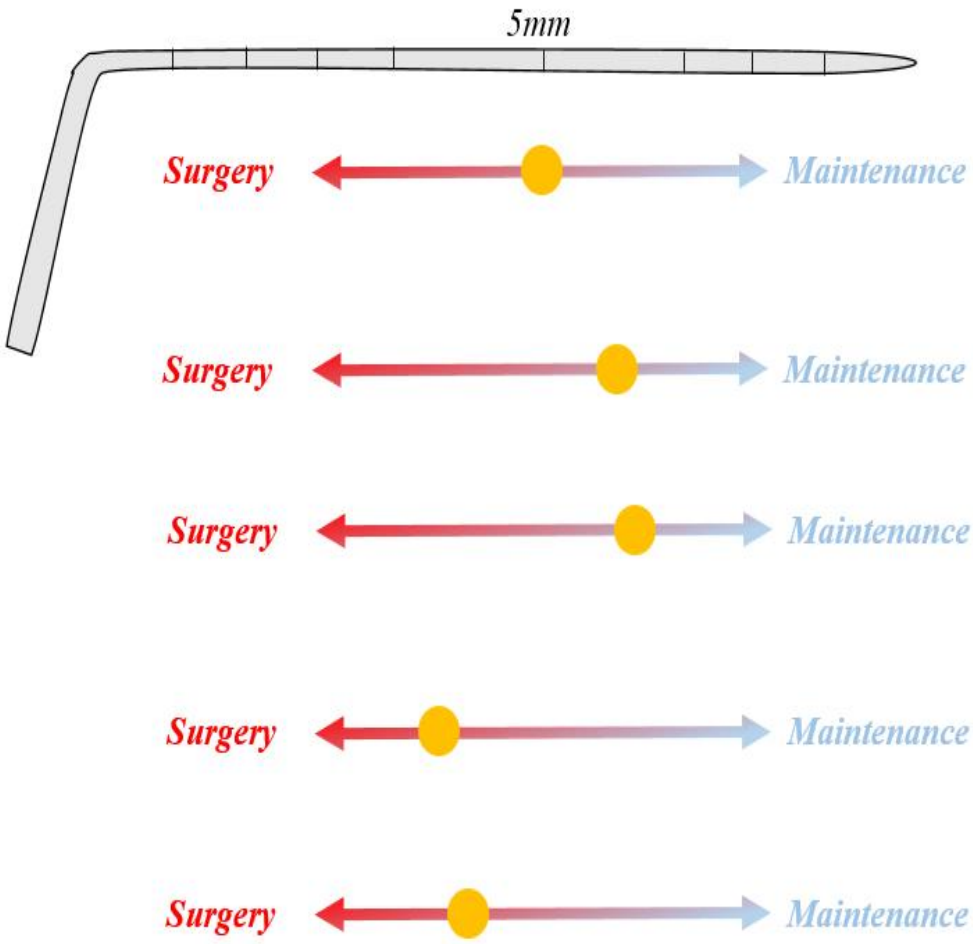
Contraindications

- Patients who do not exhibit good plaque control.
- Uncontrolled or progressive systemic disease (uncontrolled diabetics,leukemia ect.).
- Patients taking large doses of corticosteriods may have reduced resistance to stress associated with surgery ..
- Patients with imminent terminal disease who are debilitated are not candidates for surgery.

The advantages of surgical therapy

- Improved visualization of the root surface;
- More accurate determination of prognosis;
- Improved pocket reduction or elimination;
- Improved regeneration of lost periodontal structures;
- An improved environment for restorative dentistry;
- Improved access for oral hygiene and supportive periodontal treatment.

Pocket Elimination Versus Pocket Maintenance



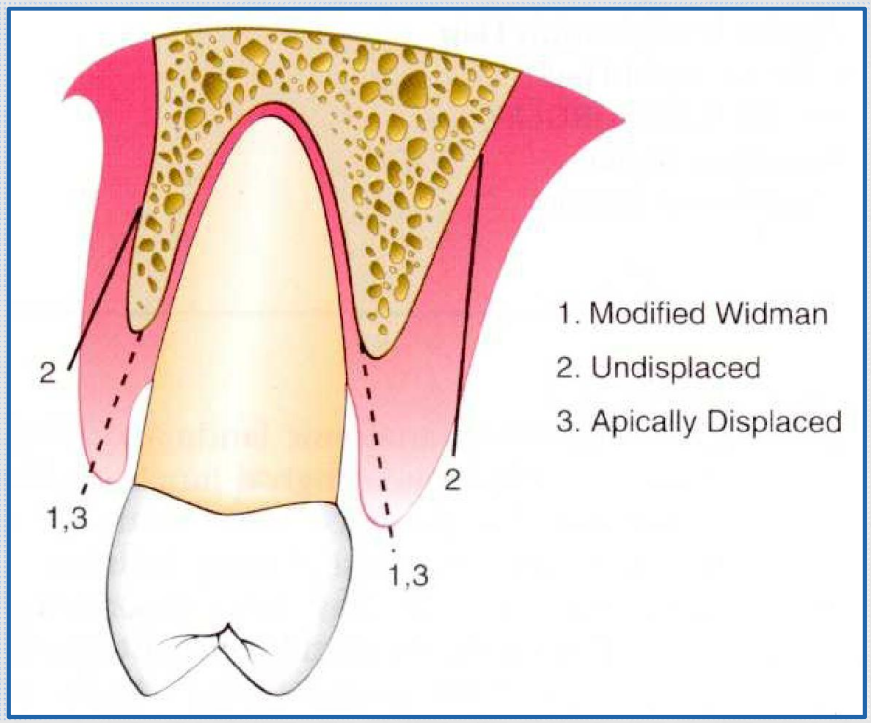
Presence of root fissures, root concavities, furcations, and defective margins of dental restorations in the subgingival area.

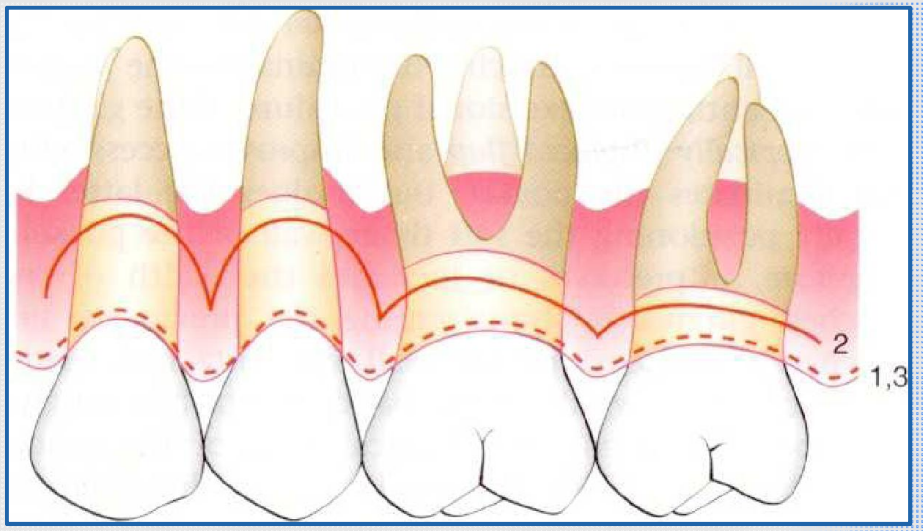
BOP persists and symptoms are not resolved by repeated subgingival instrumentation

proper debridement can be accomplished even in deeper pockets

Badersten 1981; Lindhe 1982a

Aesthetic regions





The Flap Techniques for Pocket Therapy

Modified Widman technique → Undisplaced techique → Apically displaced flap

Use of flaps in Pocket Therapy

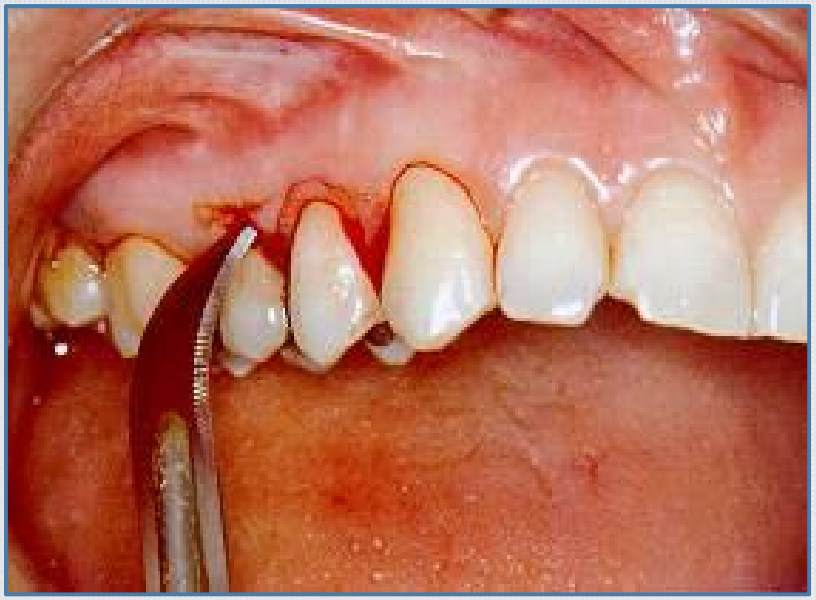
- Increase accessebility to root deposits
- Eliminate or reduce pocket depth be resection of pocket wall
- Expose the area to perform regenerative methods

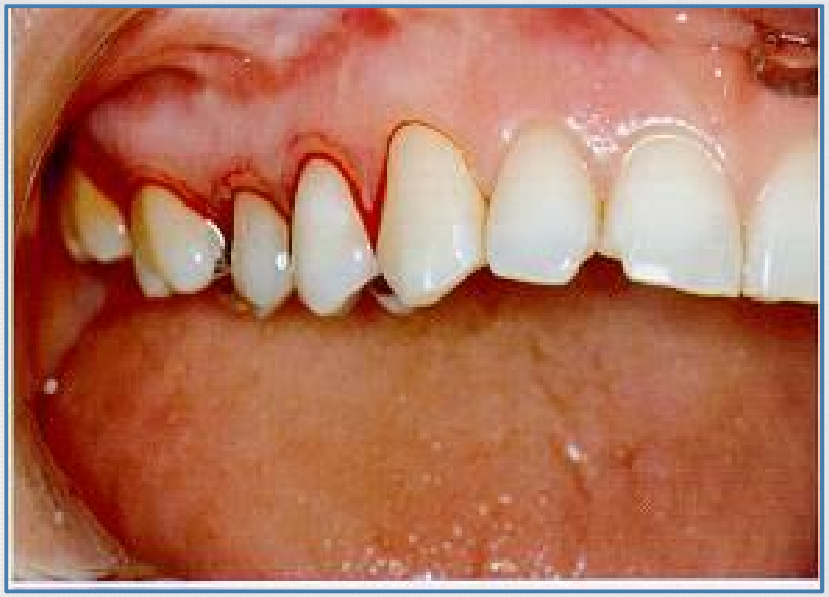
MODIFIED WIDMAN FLAP

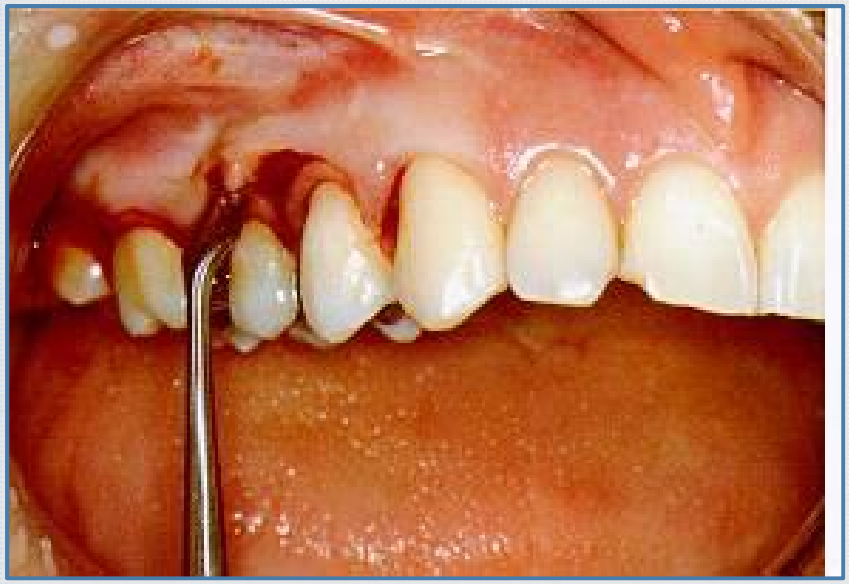
- Does not attempt to reduce pocket depth.
- Also recognized as the open flap curettage technique
- The modified Widman flap does not intend to remove the pocket wall, but it does eliminate the pocket lining.
- Offers the possibility of establishing an intimate postoperative adaptation of healthy collagenous connective tissue to tooth surfaces‘.
- Provides access for adequate instrumentation of the root surfaces and immediate closure of the area.

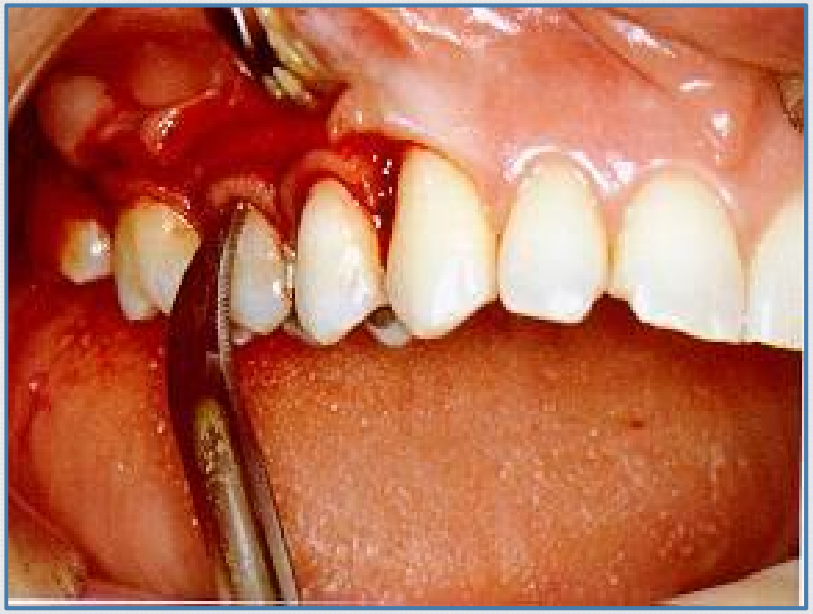
Modified Widman technique

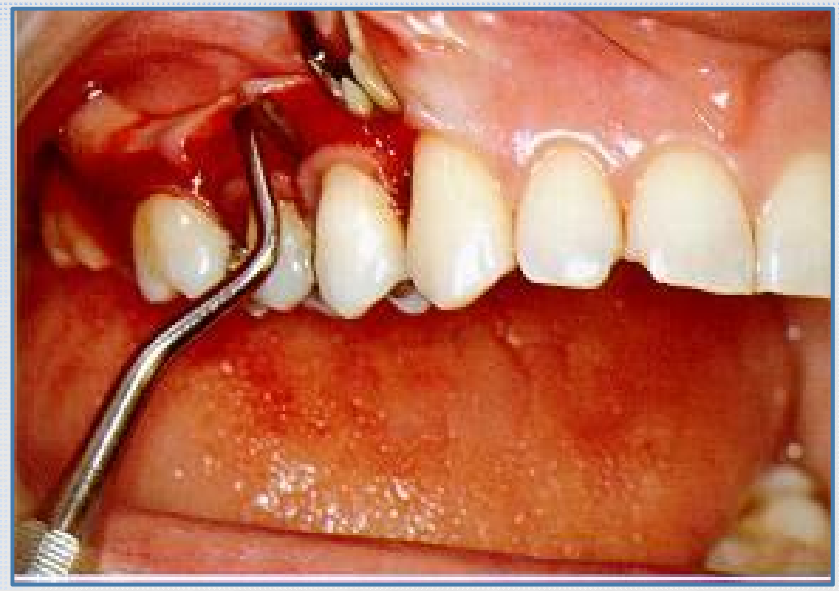
- **Step l:** The initial incision is an internal bevel incision to the alveolar crest starting 0.5 to 1 mm away from the gingival margin. Scalloping follows the gingival margin.
- **Step 2**: gingiva is reflected with a periosteal elevator.
- **Step 3:** A crevicular incision
- **Step 4**: After the flap is reflected, a third incision is made in the interdental spaces
- **Step 5**: Tissue tags and granulation tissue are removed with a curette + SRP.
- **Step 6:** Bone architecture is not corrected except if it prevents good tissue adaptation to the necks of the teeth.
- **Step 7:** Interrupted direct sutures are placed in each interdental space.

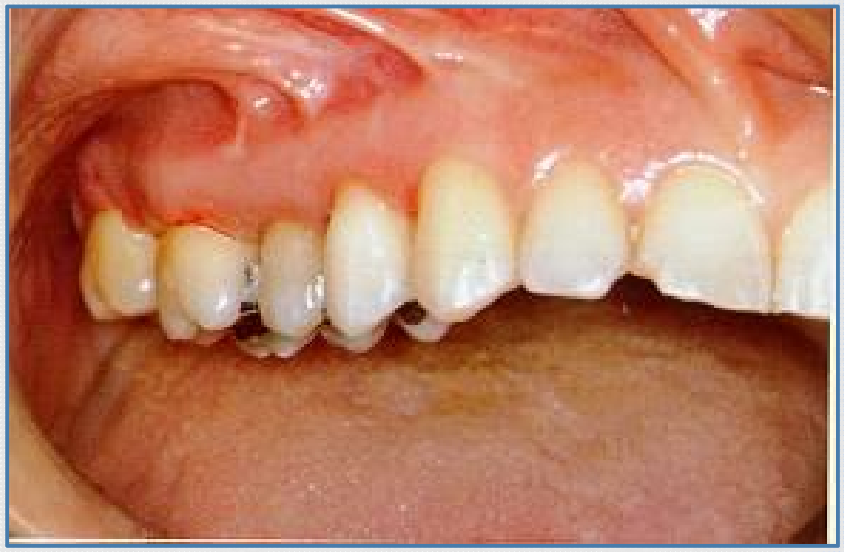










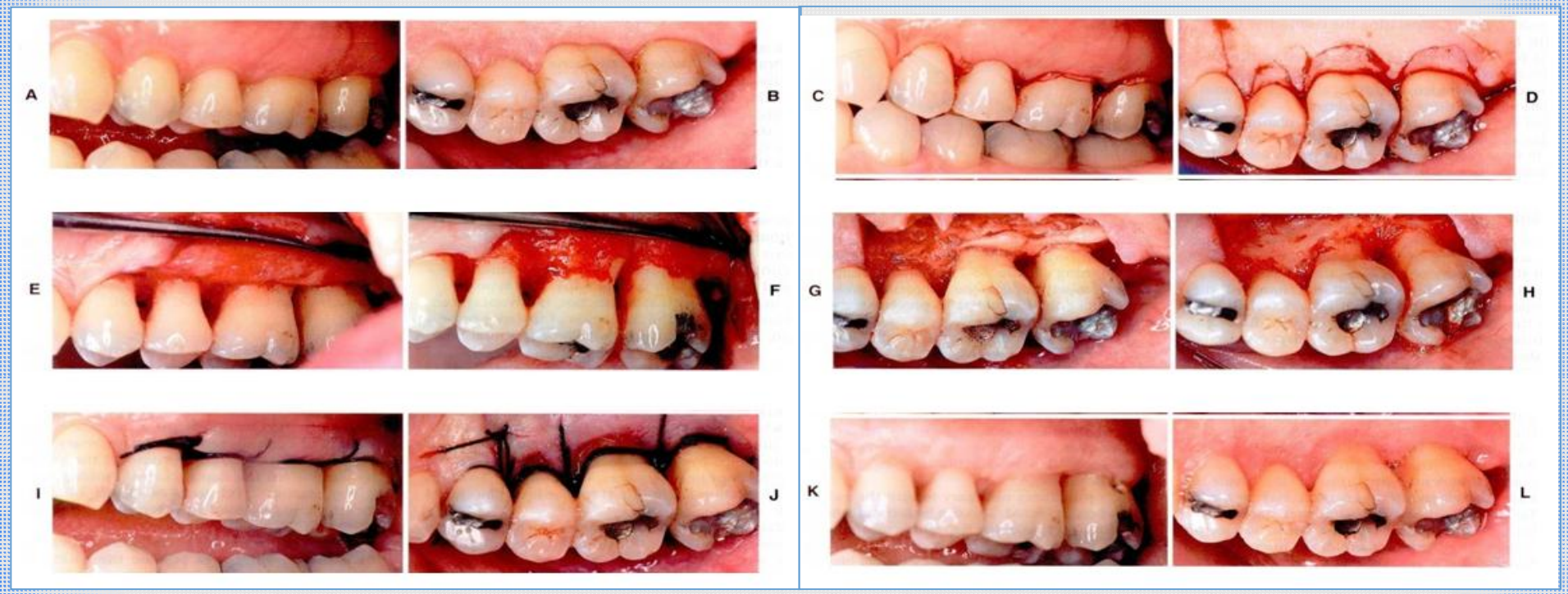


UNDISPLACED FLAP

- Currently, the undisplaced flap may be the **most frequently performed** type of periodontal surgery.
- It differs from the modified Widman flap in that the soft tissue pocket wall is removed with the initial incision; thus it may he considered an "internal bevel gingivectomy.“
- the clinician should determine that *enough attached gingiva* will remain after removal of the pocket wall.

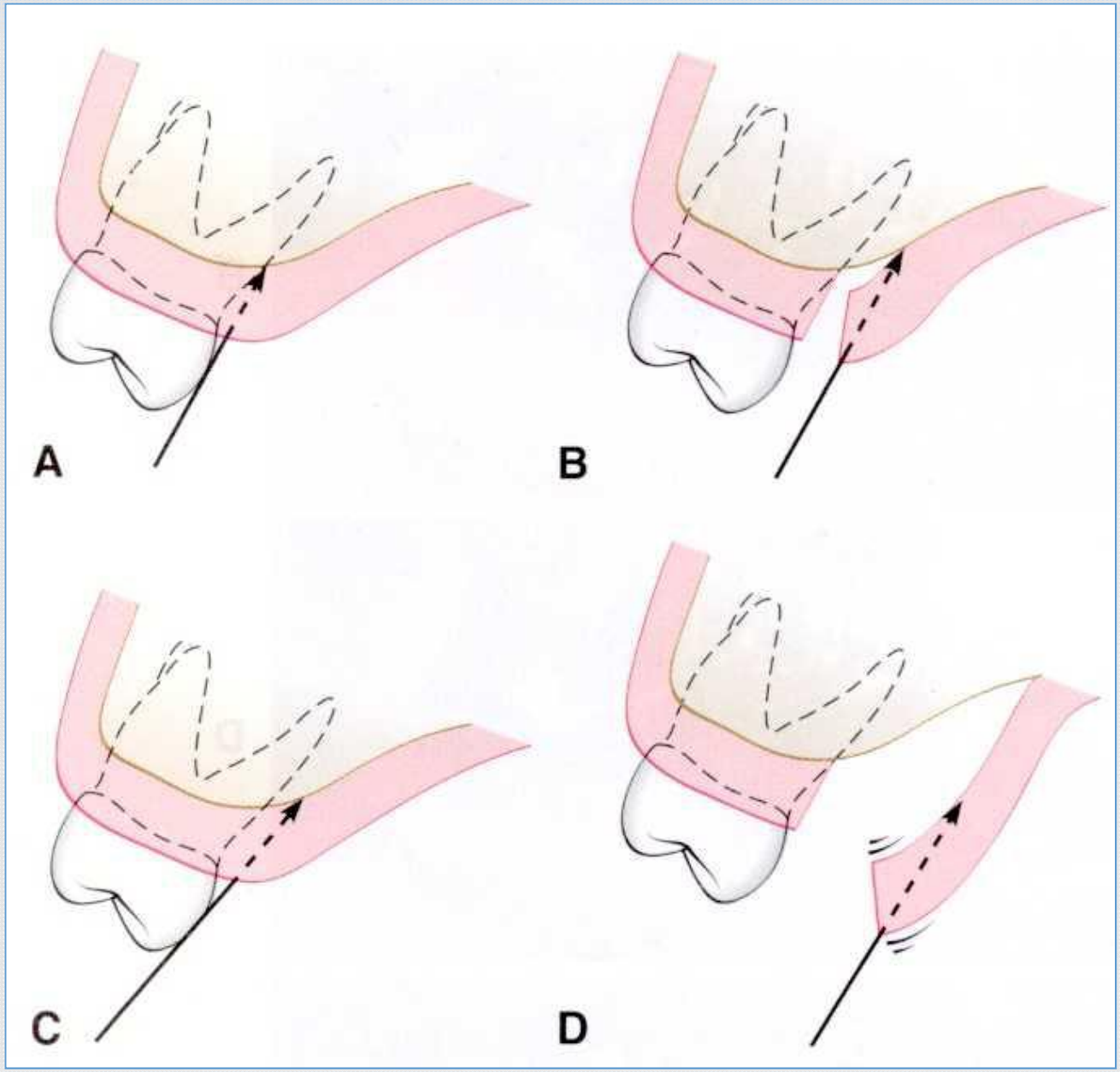
Undisplaced Flap technique

- **Step 1**: The pockets are measured with the periodontal probe, and a bleeding point is produced on the outer surface of the gingiva to mark the pocket bottom.
- **Step 2:** The initial, or internal bevel, incision is made after the scalloping of the bleeding marks on the gingiva. The incision is usually carried to a point apical to the alveolar crest, depending on the thickness of the tissue.
- **Step 3:** The second, or crevicular, incision.
- **Step 4:** The flap is reflected with a periosteal elevator.
- **Step 5**: The third, or interdental, incision is made with an interdental knife.
- ….
- **Step 9:** A continuous sling suture is used to secure the facial and the lingual or palatal flaps.


A
B
C
D
E
F
G
H
I
J
K
L

Palatal Flap

- the palatal tissue cannot be apically displaced, and a partial-thickness (split-thickness) flap cannot he accomplished.
- The initial incision for the palatal flap should allow the flap, when sutured, to be precisely adapted at the root-bone junction.
- If the tissue is thick, a horizontal gingivectomy incision may he made, followed by an internal bevel incision that starts at the edge of this incision.
- It is sometimes necessary to thin the palatal flap after it has been reflected.


A
B
C
D

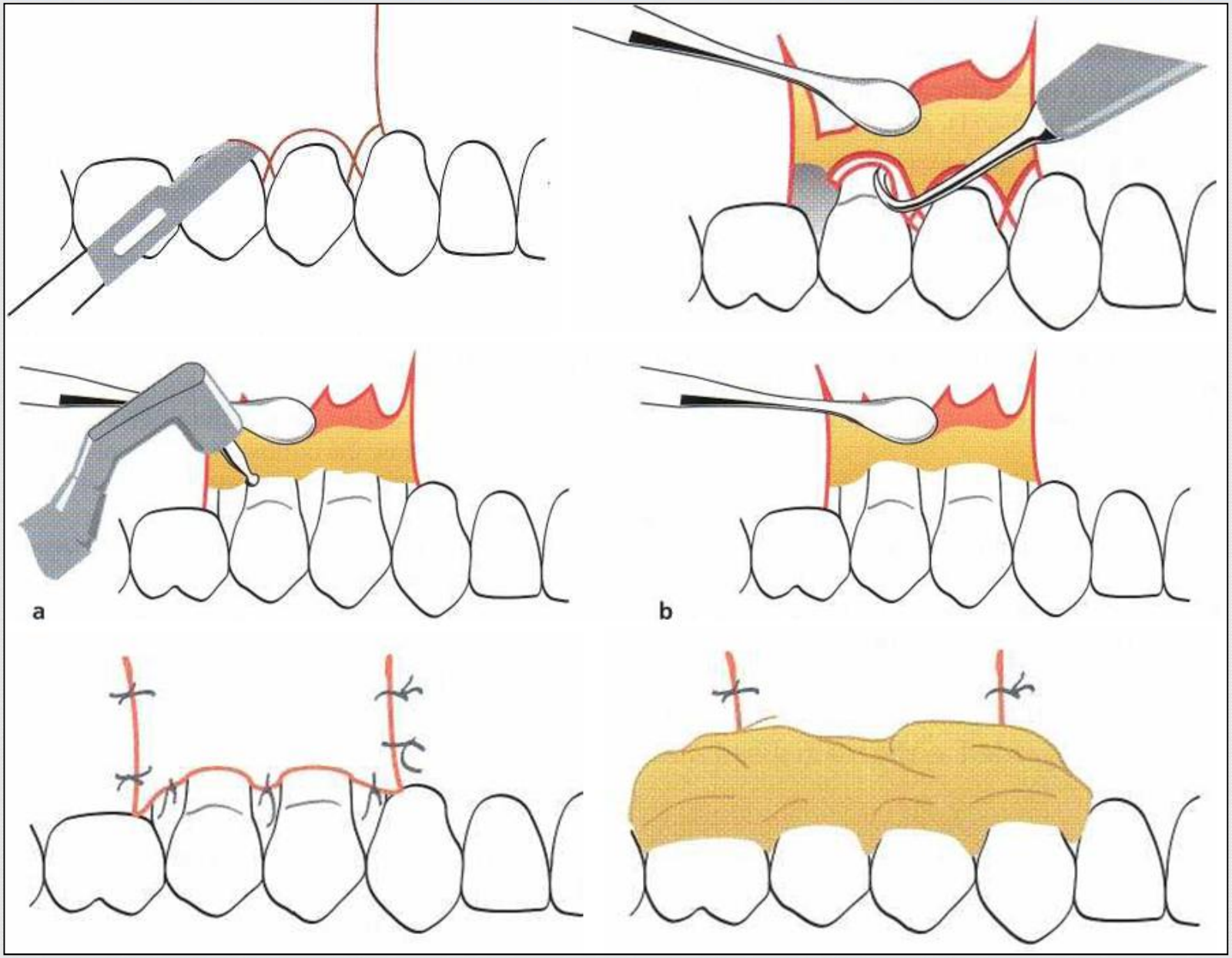
APICALLY DISPLACED FLAP

The apically displaced flap technique can be used for:
(1) pocket eradication; and/or
(2) widening the zone of attached gingiva.

IT can be a full-thickness (mucoperiosteal) or a split-thickness (mucosal) flap.

Apically Displaced flap

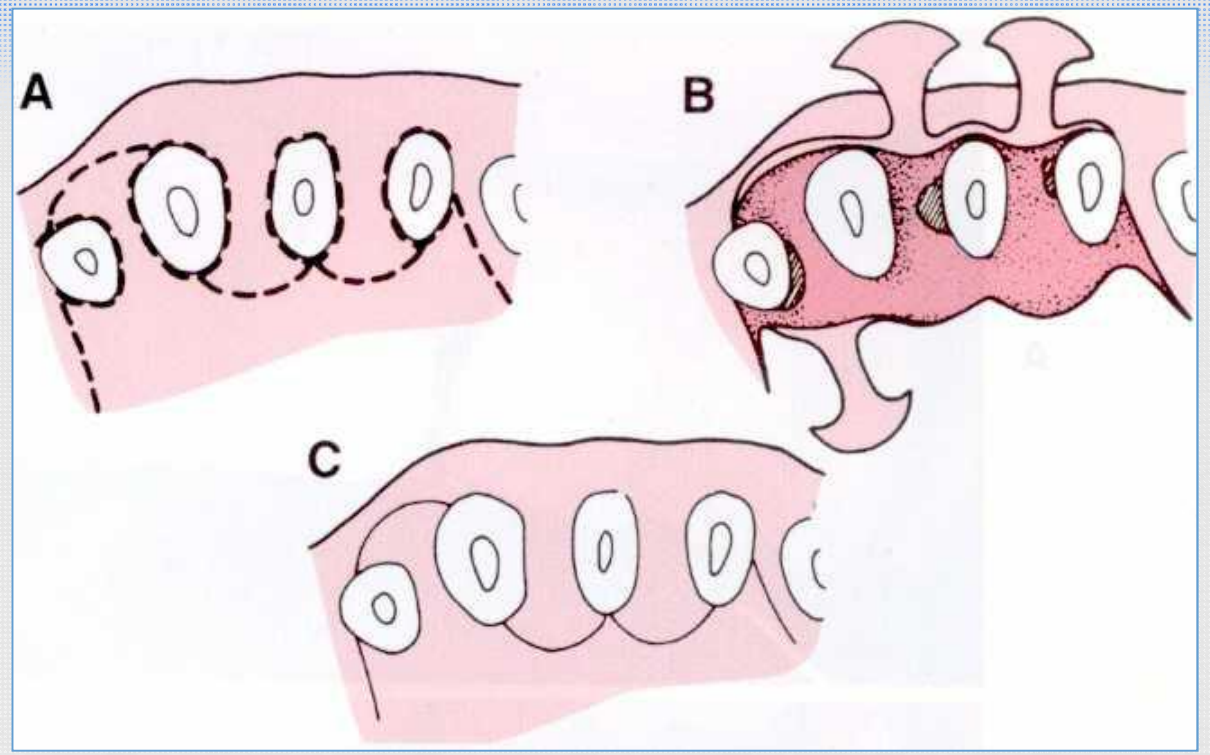
- **Step 1**: An internal bevel incision is made. To preserve keratinized and attached gingiva it should be no more than about 1 mm.
- It is also not necessary to accentuate the scallop interdentally because the flap is displaced apically and not placed interdentally.
- **Step 2**: Crevicular incisions.
- **Step 3**: Vertical incisions are made extending beyond the MGJ.
- **Step 4**: removal of all granulation tissue, scaling and root planing, and osseous surgery.
- **Step 5**: If a full-thickness flap was perlormed, a sling suture and the periodontal dressing can avoid its movement in a coronal direction. A partial-thickness flap is sutured to the periosteum using a direct loop suture or a combination of loop and anchor suture.

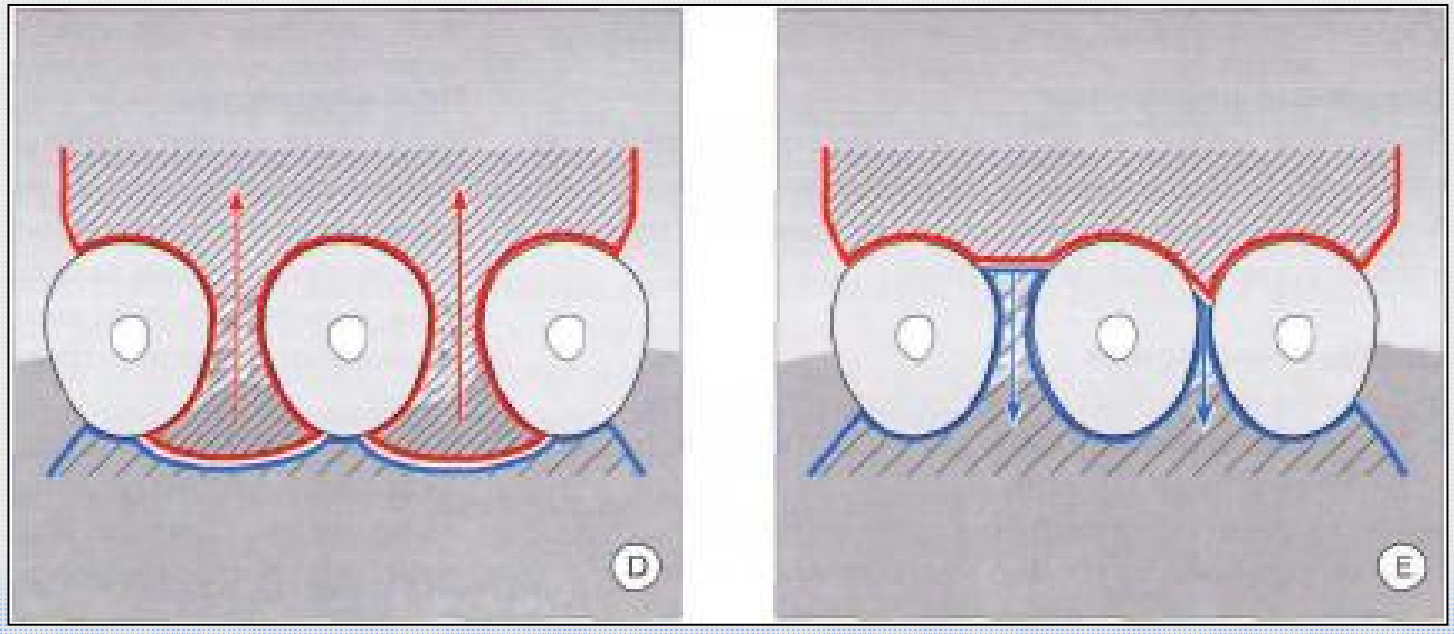

a
b

FLAPS FOR RECONSTRUCTIVE SURGERY

- **Papilla Preservation Flap**

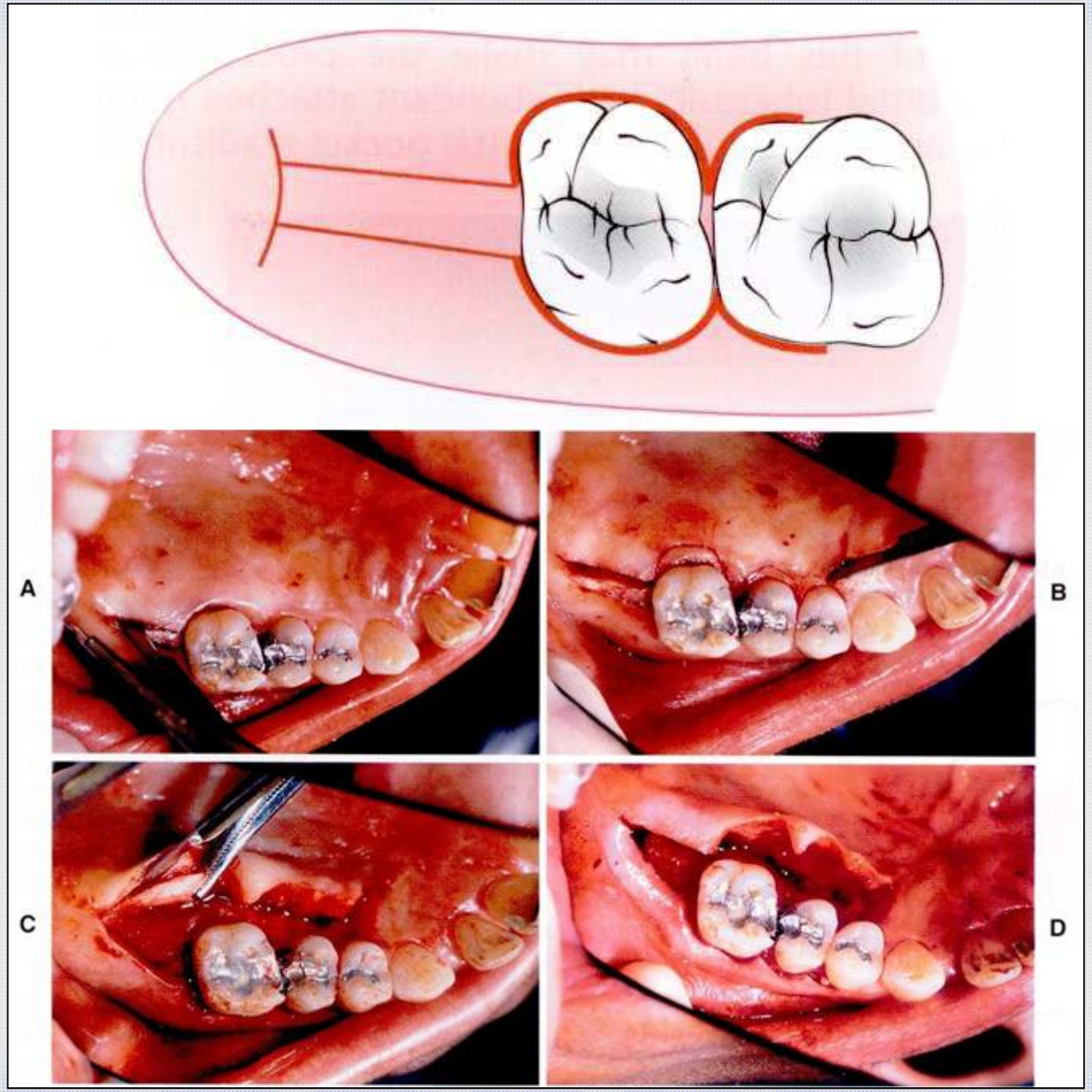
- ***Step 1:*** *A crevicular incision* with no incisions across the interdental papilla.
- ***Step 2:*** *The preserved papilla can be incorporated into the* facial or lingual/palatal flap, although it is most often integrated into the facial flap.
- ***Step 3:*** *An Orban knife is then introduced into this* incision to sever halt to two-thirds the base of the interdental papilla.


A
B
C


D
E

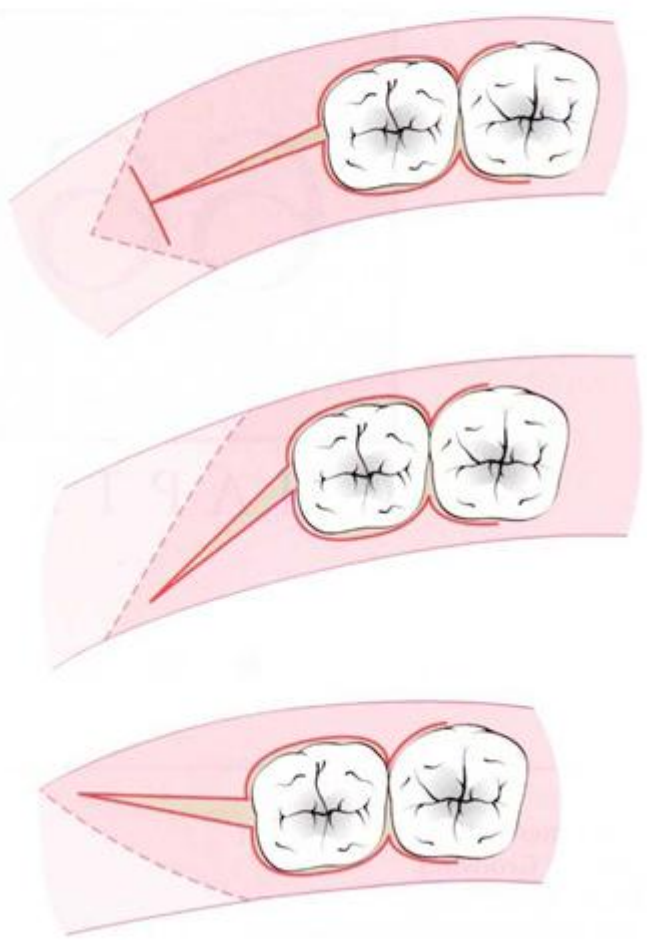
DISTAL MOLAR SURGERY

- **Maxillary Molars**
- usually simpler than the treatment of a similar lesion on the mandibular arch because the tuberosity presents a greater amount of fibrous attached gingiva.
- **T e c h n i q u e** . Two parallel incisions, beginning at the distal portion of the tooth and extending to the MGJ distal to the tuberosity.
- The faciolingual distance between these two incisions depends on the depth of the pocket and the amount of fibrous tissue involved.


A
B
C
D

DISTAL MOLAR SURGERY

- **Mandibular Molars:**
- The retromolar pad area does not usually present as much fibrous attached gingiva. The keratinized gingiva, if present, may not be found directly distal to the molar.
- The incisions could he directed distolingually or distotacially, depending on which area has more attached gingiva.

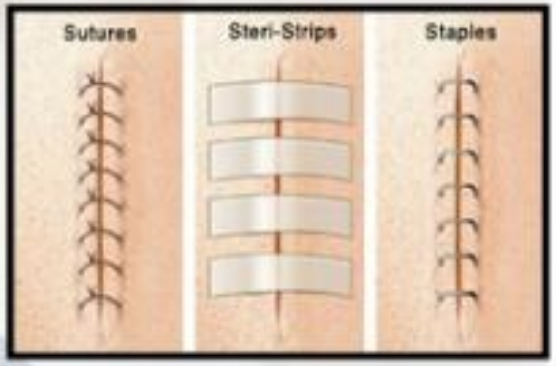


Suturing

- Sutures are meant to maintain the flap in the desired position until healing has progressed to the point where sutures are no longer needed.

Resorbable

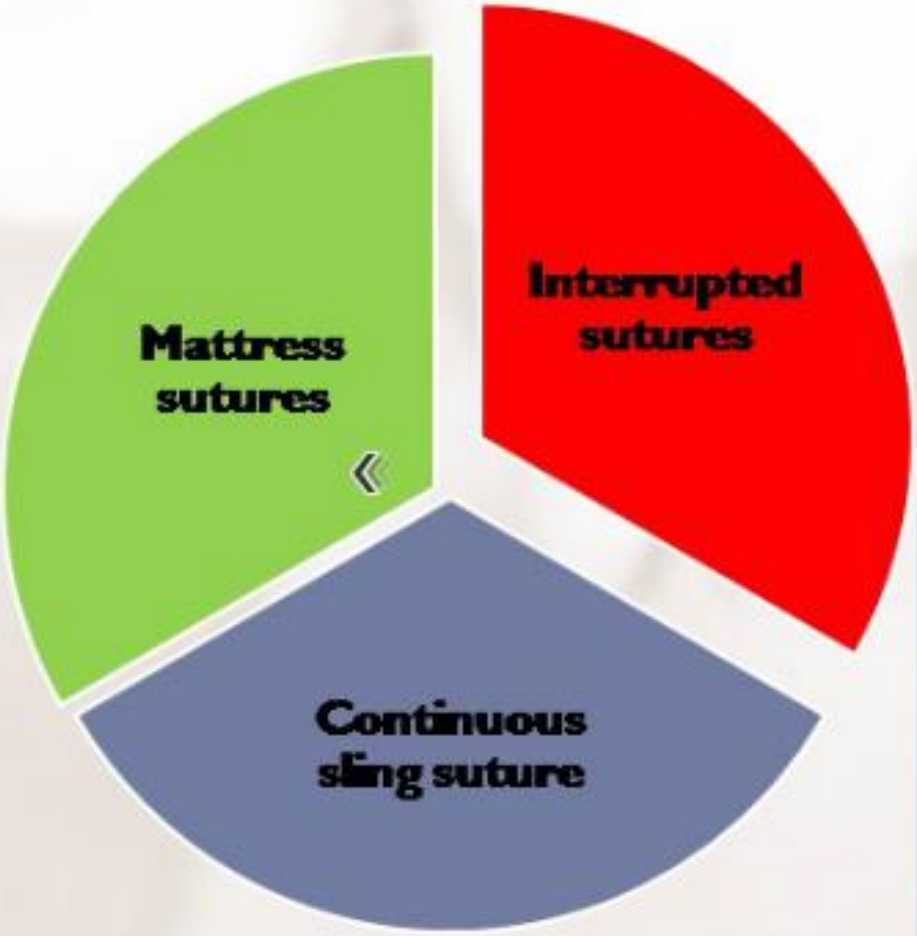
Nonresorbable



Braided

monofilament

Suturing techniques for flap surgery



Sutures

Horizontal Mattress Suture: for the interproximal areas of diastemata or for wide interdental spaces to adapt the interproximal papilla properly against the bone.

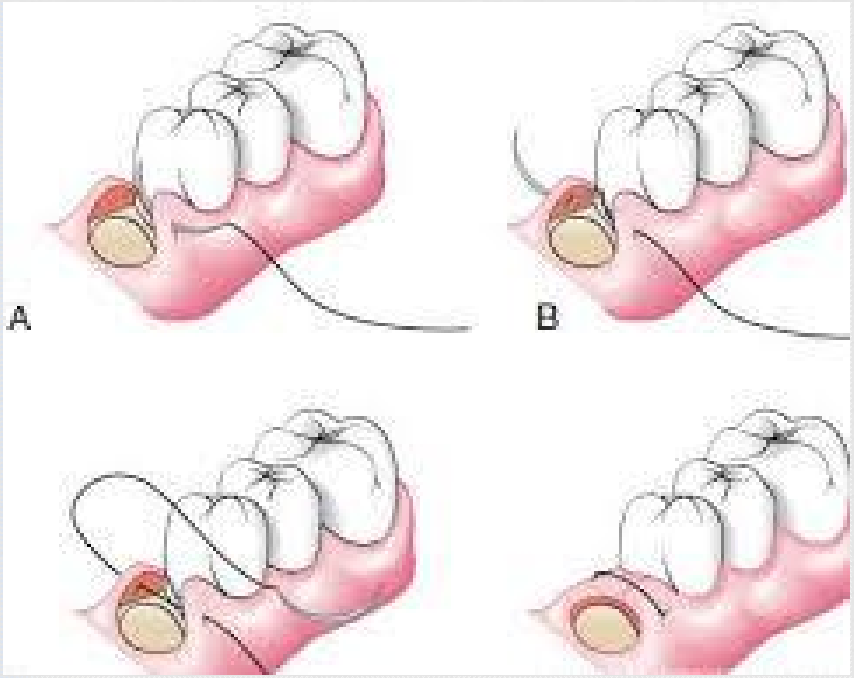
Continuous , Independent Sling Suture: The flaps are tied to the teeth and not to each other.

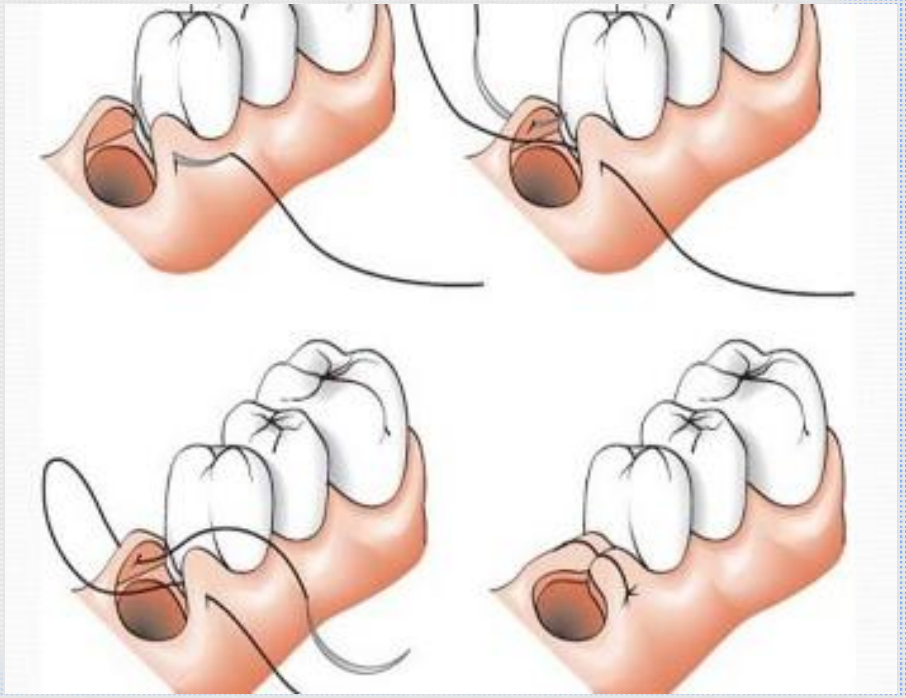
Anchor Suture: The closing of a flap mesial or distal to a tooth, as in the mesial or distal wedge procedures.

Closed Anchor Suture

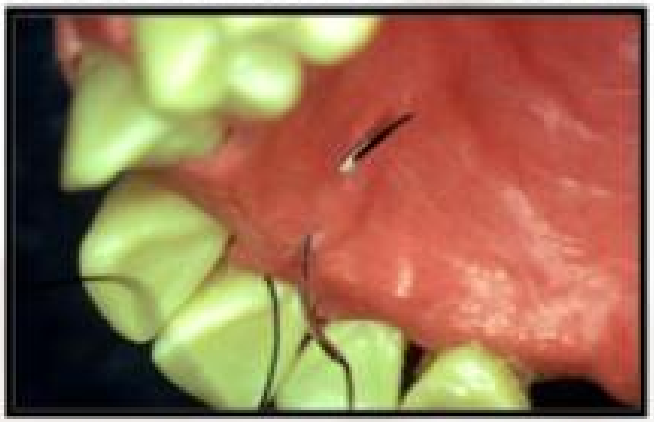
Periosteal Suture: hold in place apically displaced partial-thickness flaps.

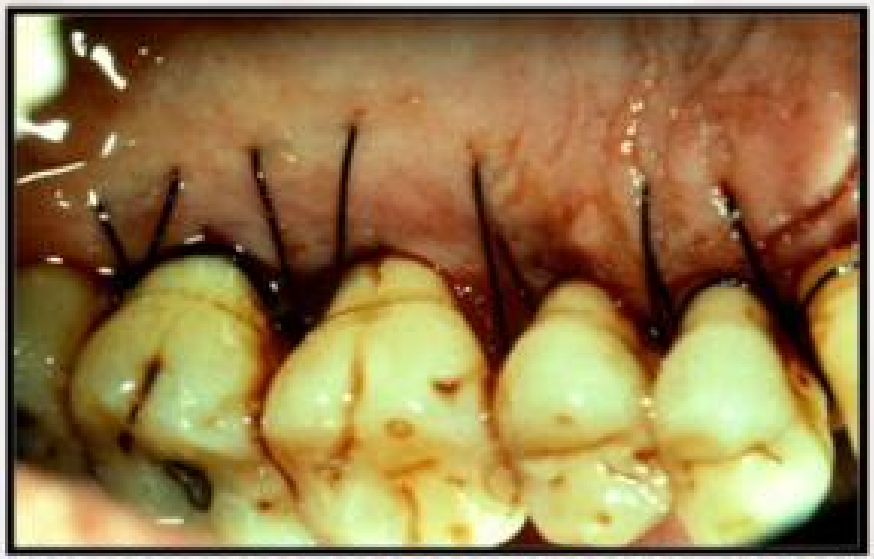
Interrupted sutures





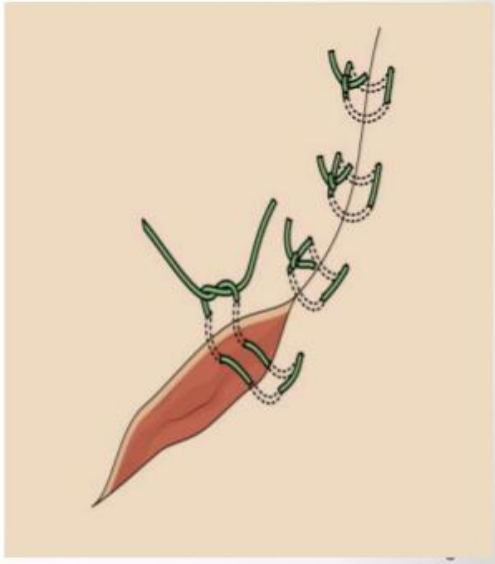
Mattress sutures





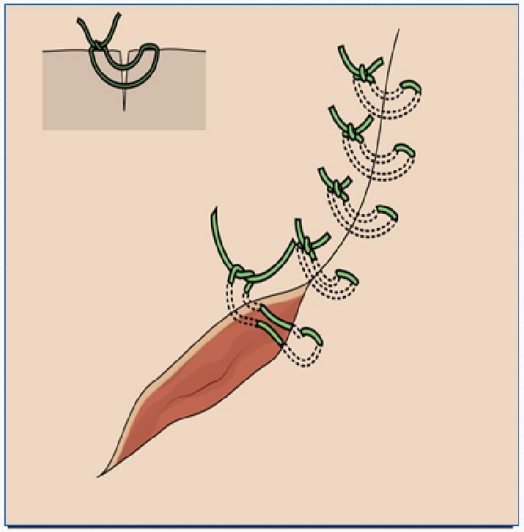
Horizontal Mattress Suture

- The strongest type of sutures, very far away (8 mm from the edge)
- Indications: large distances between tissues, bone grafts and implants, and closure of extraction socket.
- Advantages: Good for hemostasis, less prominent scarring.
- Disadvantages: Leave a gap between flaps and it is difficult to remove.

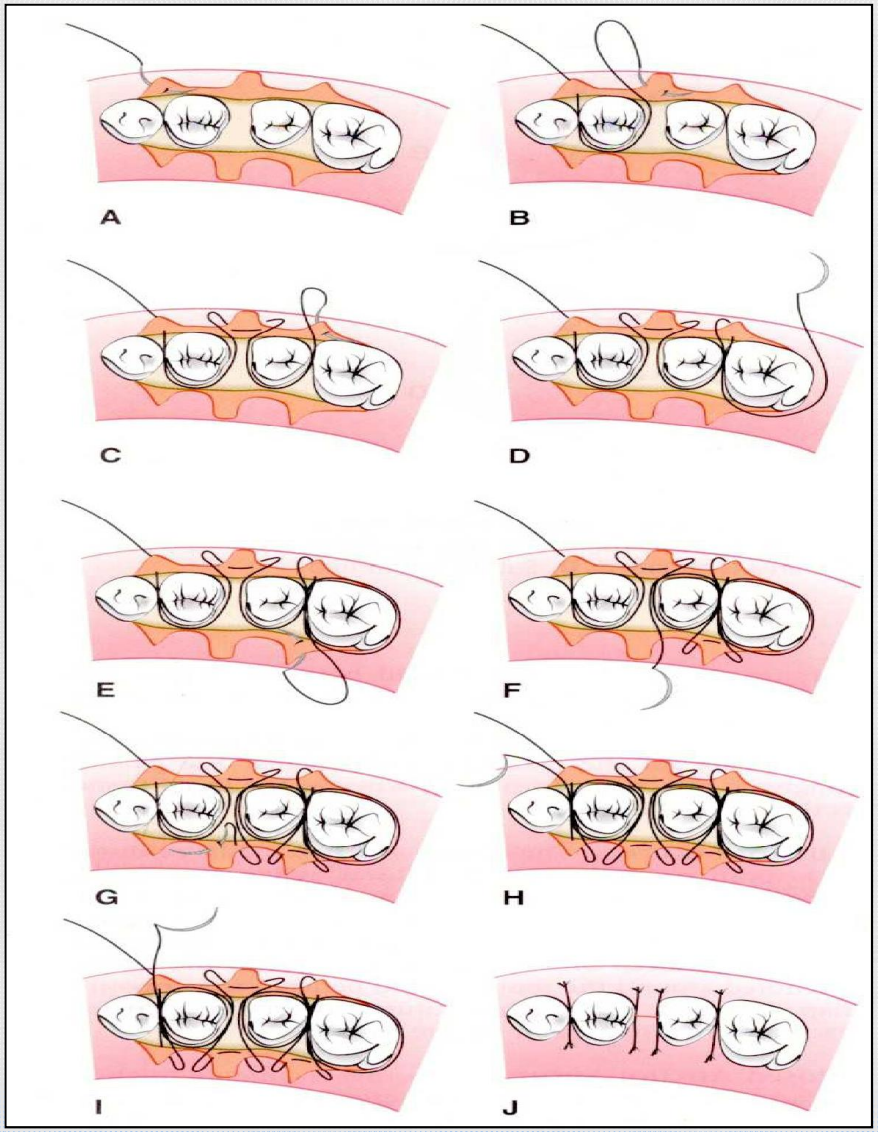


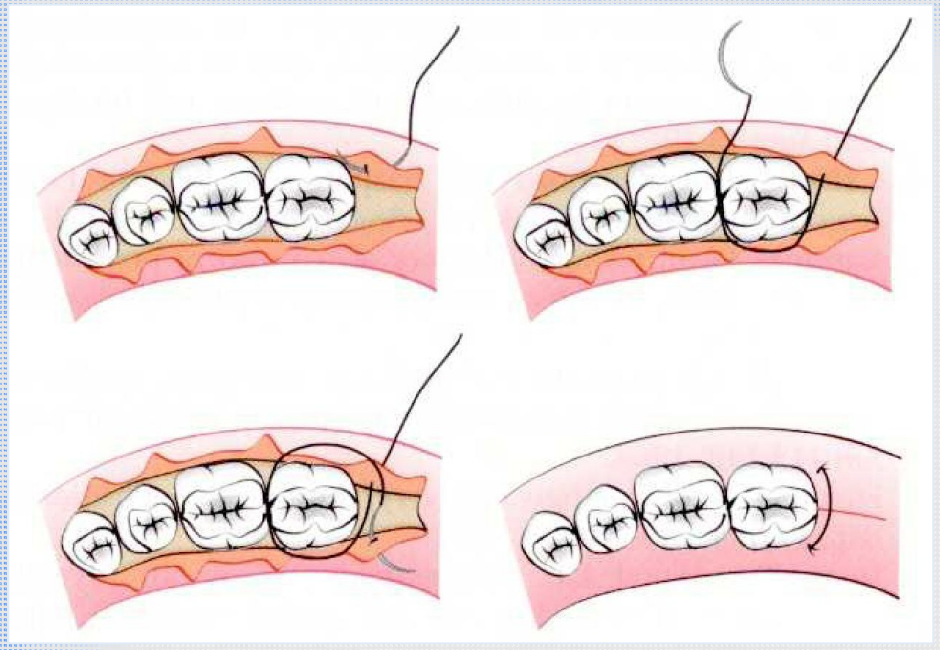
Vertical Mattress Suture

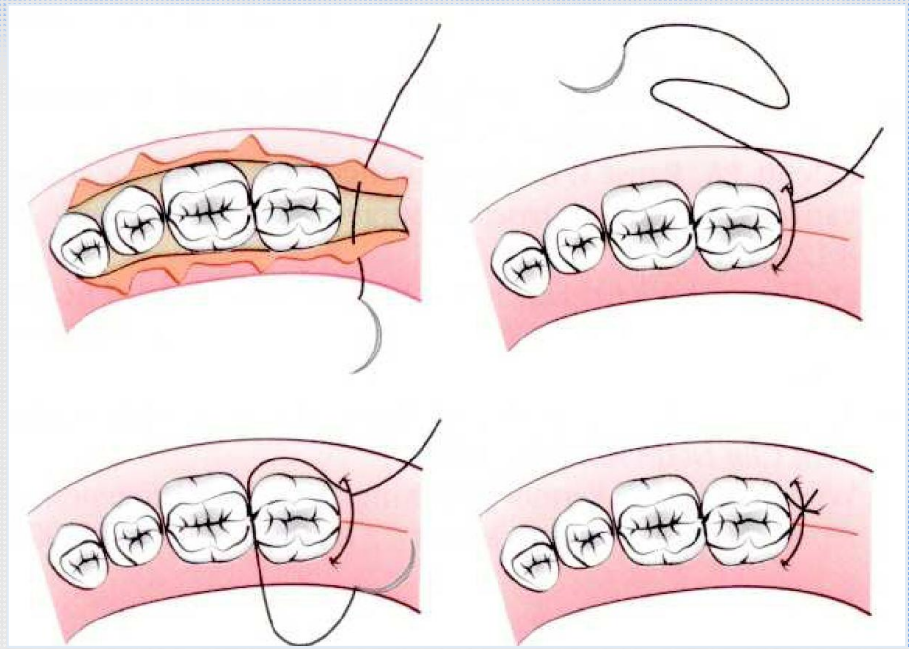
- Vertical Mattress is a suture technique most commonly used in anatomic locations which tend to evert, such as the posterior aspect of the neck, deeper wounds

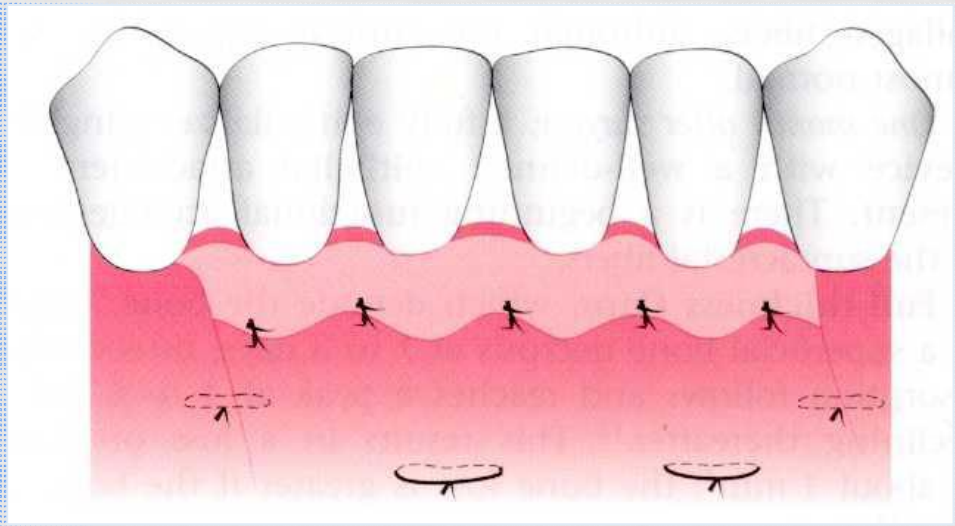


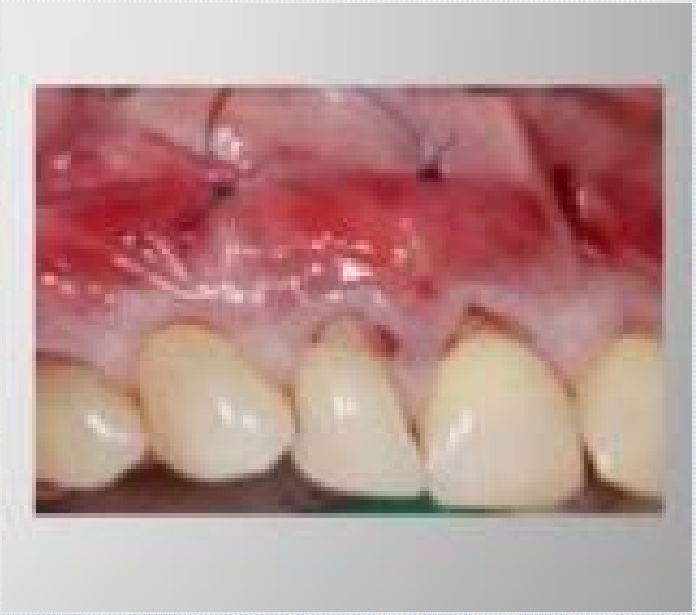
Continuous sling suture












Thanks for your attention