

The original WIDMAN flap

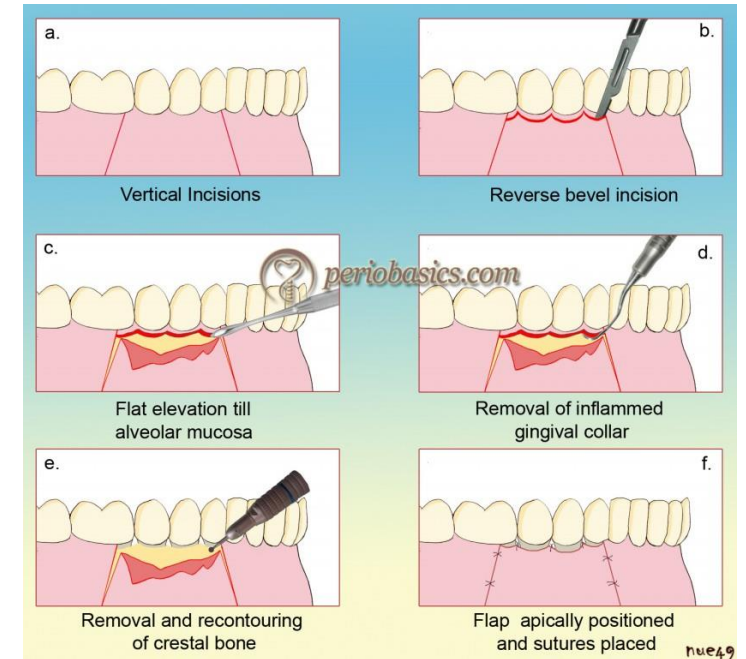
- One of the first detailed description of use flap procedure for pocket elimination was published in 1918 by Leon Widman

Aim

- To remove the pocket epithelium and inflamed connective tissue thereby enabling for optimal cleaning of root surface

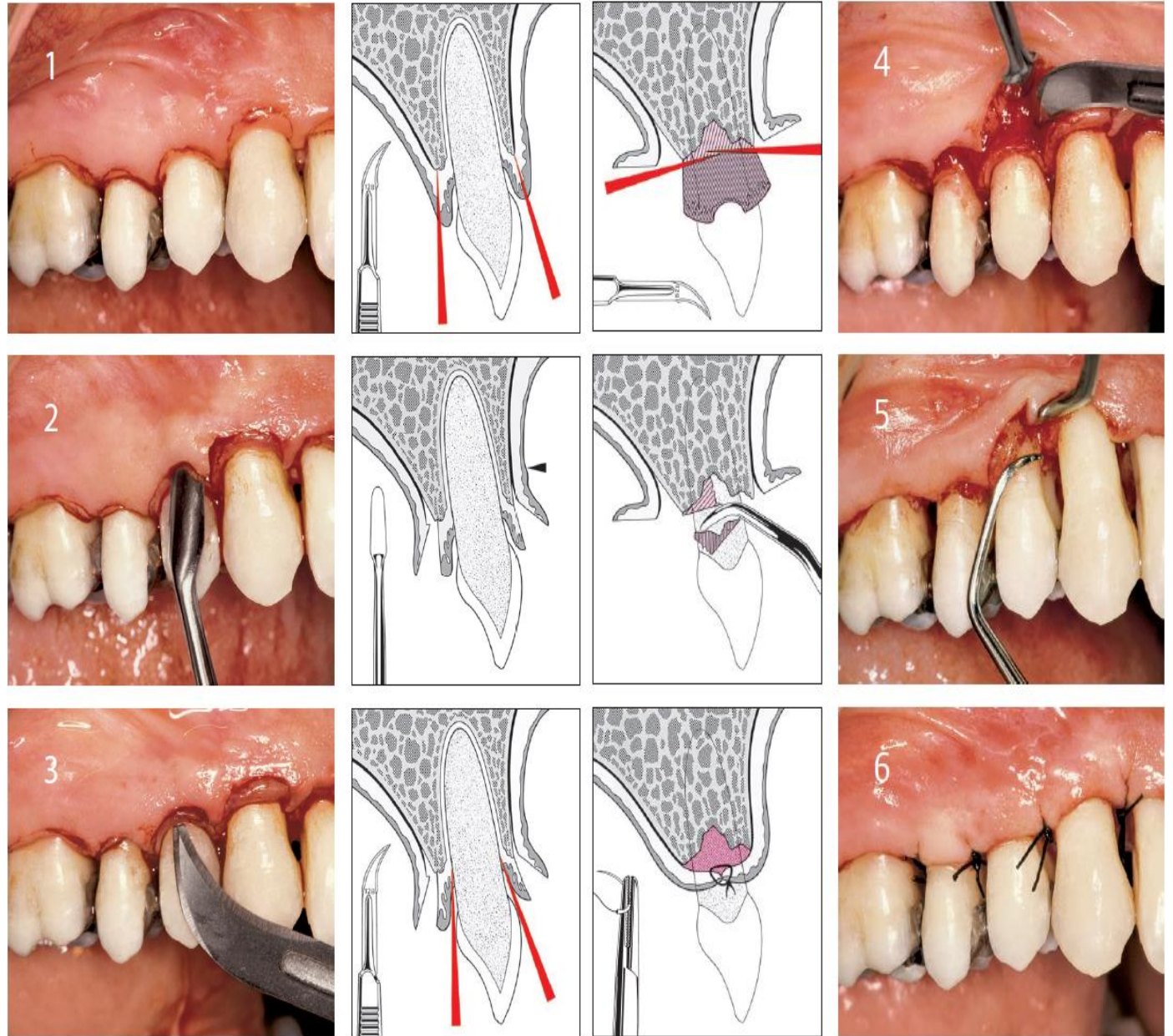
The modified Widman flap

- In 1974 Ramford and Nissle described the modified Widman flap procedure
- It is also known as replaced flap
- It is different from Widman flap in the manner that no apical displacement of flap takes place and no osseous recontouring is to be done



Technique

- 1- Intra-crevicular incision is made through the base of the pockets on both labial and lingual aspects of the teeth
- 2- The gingiva is reflected labially and lingually to expose the diseased root surfaces which are debrided carefully
- 3- Angular bony defects are curetted
- 4- The pocket epithelium and granulation tissue are removed from the inner surface of the flap
- 5- The flap is reflected to its original position and sutured with interproximal sutures



Advantages

- 1- No extensive sacrifice of non-inflamed tissues and no apical displacement of the flap, thus its useful in anterior regions for aesthetic reasons
- 2- Potential for regeneration in case of infrabony defects

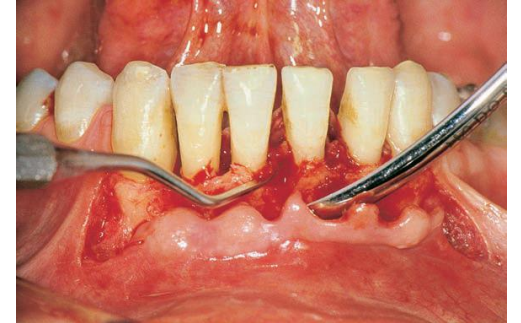
The apically repositioned flap

Advantages

- 1- Provides accessibility and eliminates the pocket
- 2- Preserves or increases the width of the attached gingiva by transforming the previously unattached keratinised pocket wall into attached tissue

Disadvantages

- Root exposure may cause aesthetic problems hypersensitivity and increased risk of root caries

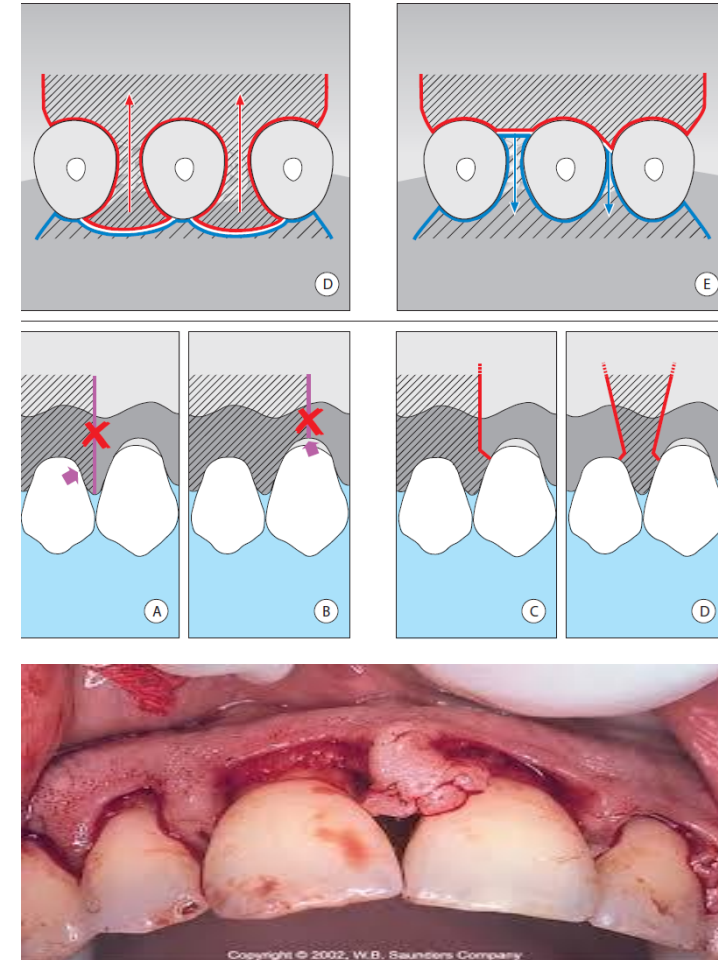


Contraindications

- 1- Periodontal pockets in aesthetic areas
- 2- Deep infrabony defects
- 3- Patients at high risk for caries
- 4- Severe hypersensitivity
- 5- Teeth with severe attachment loss and unfavourable clinical crown\root ratio

Papilla preservation flap

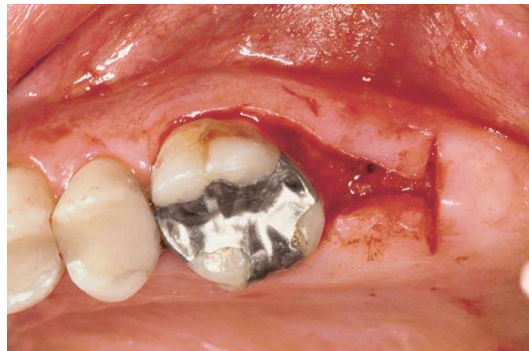
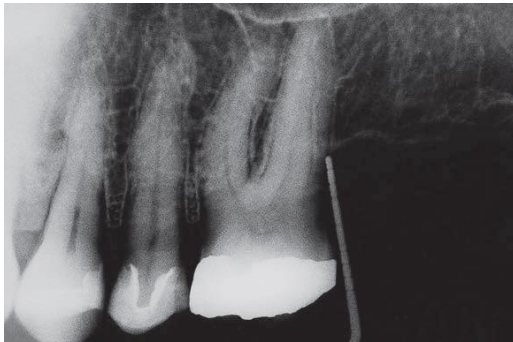
- It is to be done to preserve the interdental soft tissue for maximum soft tissue coverage following surgery in the interdental region
- For aesthetic purpose in maxillary anterior region
- There must be adequate interdental space to allow the intact papilla to be reflected with the facial or lingual\palatal flap
- In case narrow interdental space, which making it impossible to perform a papilla preservation flap, a conventional flap with only crevicular incisions will be made



Distal wedge flap

The incision start on the distal surface of the tuberosity and carried forward to the base of the pocket on the distal surface of molar

However, when only limited amounts of keratinised gingiva present or if a distal angular bony defect has been diagnosed, the distal wedge procedure facilitates access to the osseous defect, preserve sufficient amount of keratinised tissue and produces a primary closure wound



Respective osseous surgery

Procedures designed to restore the form of pre-existing alveolar bone to a level present at the time of surgery, or slightly more apical to this level

Osteoplasty: refers to reshaping the bone without removing the supporting bone

Ostectomy or osteotomy: includes the removal of tooth surface alveolar bone

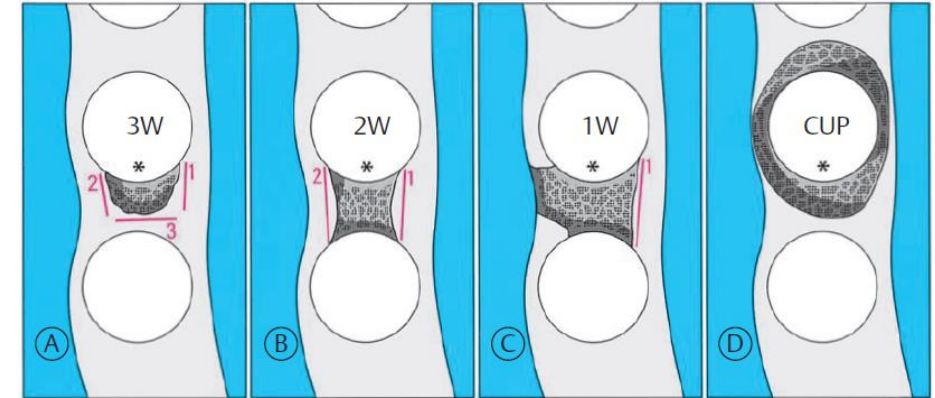
- One or both of these procedures may be necessary to produce the desired result

Indications

- 1- Ostectomy is the best to be applied to patients with early to moderate bone loss (2-3 mm) with moderate root trunk length that have bony defects with one or two walls
- 2- To facilitate certain restorative and prosthetic dental procedures
- 3- Furcation involvement
- 4- Excessive bony ledges and exostosis
- 5- Provide a means of producing optimal crown length for cosmetic purposes

Selection of treatment technique

- **One-wall angular defects** usually need to be recontoured surgically
- **Three-wall defects**, particularly if they are narrow and deep, can be successfully treated with periodontal regenerative procedures
- **Two-wall angular defects** can be treated with either method, depending on their depth, width and general configuration



Periodontal plastic and aesthetic surgery

Objectives

- 1- Problems associated with attached gingiva
- 2- Problems associated with a shallow vestibule
- 3- Problems associated with aberrant frenum
- 4- Aesthetic surgical therapy
- 5- Tissue engineering

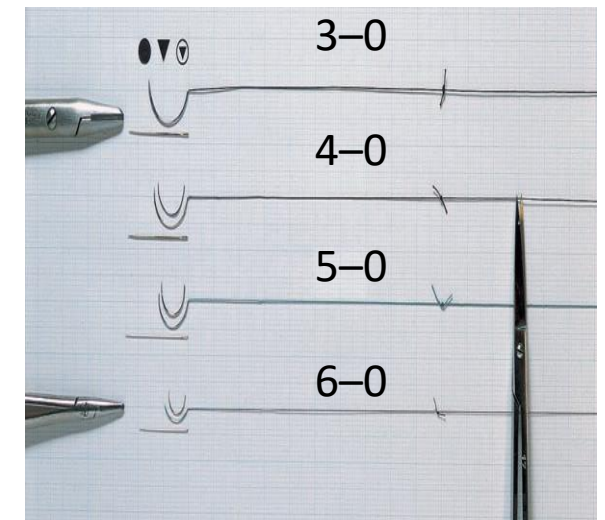
Frenectomy and frenotomy

Frenectomy is a complete removal of the frenum, including its attachment to the underlying bone, this may be required in the correction of an abnormal diastema between the maxillary central incisors

Frenotomy is the relocation of the frenum, usually in a more apical position

Suturing

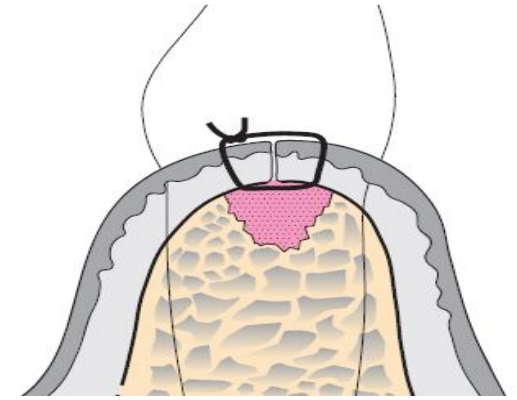
- The needle is held with the needle holder, and should enter the tissues at right angles and should be no less than 2mm from the incision. The knot should not be placed over the incision
- The use of non irritant, non absorbable, non filamentous material is recommended
- The expanded polytetrafluoroethylene, synthetic, monofilament suture is an excellent non absorbable suture is widely used nowadays
- The dimensions which are usually preferred are 4\0, 5\0. while the finer suture materials are 6\0, 7\0 which may be used particularly with periodontal micro and plastic surgery
- Sutures are usually removed after 7-14 days



Suturing technique

1- Interrupted interdental suture

Provides close adaptation between buccal and lingual flaps with equal tension on both units when buccal and lingual flaps elevated and repositioned at the same level



2- Figure- eight suture

Used to approximate the buccal and lingual flaps when flaps are not in close apposition as a result of **apical flap position** or **non scalloped** incisions. This is similar to perform the direct ligation



3- Suspensory suture (independent sling suture)

Is used when flap elevated on one aspect of buccal or lingual or when buccal and lingual flaps are to be repositioned at different levels

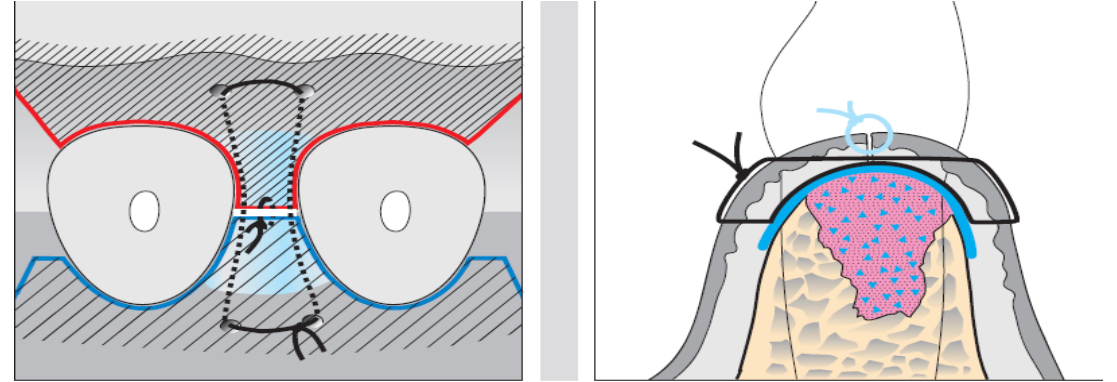


4- The continuous independent sling suture

Is used in surgical procedures involving several teeth when buccal and lingual sides are to be repositioned apically

5- Modified mattress suture

Required for coronal advancement of the flap



Periodontal dressing

Purpose of periodontal dressings

- 1- Protects the wound post-surgically
- 2- Maintains close adaptation of the flap to the underlying bone
- 3- Helps in prevention of bleeding
- 4- Prevents the formation of excessive granulation tissue
- 5- Protects the newly exposed root surfaces from environmental temperature changes
- 6- Facilitates oral hygiene maintenance
- 7- Facilitates masticatory process
- 8- Helps in prevention of infection
- 9- Aids in patient comfort



Properties

- 1- Soft and flexible to facilitate its placement and adaptation
- 2- Hardens within a reasonable time
- 3- Sufficiently rigid to prevent fracture and dislocation
- 4- Smooth surface after setting to prevent irritation to the cheeks and lips
- 5- Bactericidal properties to prevent plaque formation
- 6- Does not interfere with healing

Types of periodontal dressings

1- Zinc oxide eugenol dressings

- Based on the reaction of zinc oxide and eugenol
- Supplied as liquid and powder that mixed before use
- Eugenol in this type of pack may induce an allergic reaction

2- Zinc oxide non eugenol dressings

- Supplied in two tubes, which can be mixed before use until a uniform colour is obtained
- One tube contains zinc oxide, oil for plasticity and lorcithidol as a fungicide
- The other tube contains liquid coconut fatty acids that have been thickened with a bacteriostatic agent

3- Cyanoacrylates

4- Tissue conditioners

5- Dressings which contain antimicrobial agents such as tetracycline

Non eugenol dressings

Such as **Coe-pack**, peripack, vocopack, perio-care, perioputty, collagen dressings, barricade...etc



Post operative instructions

- Should take the prescribed medications regularly
- The pack should remain in place for at least one week or until get removed by the dentist at the next visit
- Avoiding hot food after the first three hours after the operation to permit the pack to harden
- Avoiding citrus fruits or juices, highly spiced foods and alcoholic beverages
- Avoiding smoking which will irritate the gum and delay healing
- Avoiding brushing over the pack (but brush the other areas)
- Rinsing with 0.12% chlorhexidine immediately after the surgical procedure and twice daily
- Ice application is recommended intermittently on the face over the operated area
- Swelling may be seen 1 to 2 days after the surgery and subsides in 3 to 4 days

First post operative week

- Properly performed periodontal surgery presents no serious post operative problems, however the following complications may arise in the first post operative week
- Persistent bleeding after surgery, the pack should removed and check for bleeding points which should be stopped with pressure, electrosurgery or cautery
- Sensitivity to percussion, extension of inflammation into periodontal ligament may cause sensitivity to percussion, relieving the occlusion is usually helpful
- Swelling which is usually subsides by the the 4th day
- Feeling of weakness, usually due to transient bacteraemia induced by the procedure. The reaction is prevented by medication such as amoxicillin 500mg for 5 days

Removal of the pack

When the patient returns after one week, the periodontal pack should be removed and the area should be rinsed with normal saline or antiseptic solution

Mouth care between procedures

- Vigorous brushing is not feasible during the first week after the pack is removed
- The patient is advised to use soft brush and light water irrigation in addition to chlorhexidine mouth wash
- Post operative dose of ibuprofen 400-600mg followed by one tablet every 8 hours

