



Dental Clinical Practice 4A

Periodontal Assessment and Management in Fixed Prosthodontics Part 1

Dr. Betul Rahman



Overview:



Reasons for establishing periodontal health before performing restorative dentistry



Control of Active Disease



Preprosthetic Surgery



Biologic considerations



Options for margin placement





Managing Interproximal Embrasures



Requirements For Healthy Gingiva Around Restorations



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- Long-term therapeutic targets of restorative dentistry :
 - ❖ comfort
 - ❖ good function
 - ❖ treatment predictability
 - ❖ longevity
 - ❖ ease of restorative and maintenance care
 - Active periodontal infection must be treated and controlled before the initiation of restorative, esthetic, and implant dentistry to achieve above targets
 - Periodontal health is a prerequisite of successful comprehensive dentistry.



Key Parameters of Success

- Critical assessment of periodontal tissues
- Establish periodontal health before starting Crown and Bridge





Images courtesy of Dr. R. Hirsch



Reasons for establishing periodontal health before performing restorative dentistry

1. Establishment of stable gingival margins before tooth preparation
2. Provide for adequate tooth length for retention, access for tooth preparation, impression making, and finishing of restorative margins
3. Periodontal therapy should be completed before restorative care.
Because the resolution of inflammation may result in the repositioning of teeth or soft tissue and mucosal changes.



Reasons for establishing periodontal health before performing restorative dentistry

- 4. Traumatic forces placed on teeth with ongoing periodontitis may increase tooth mobility, discomfort, and possibly the rate of attachment loss.
- 5. Successful esthetic and implant procedures may be difficult or impossible without the specialized periodontal procedures developed for this purpose.





Sequence of Treatment in Preparing Periodontium for Restorative Dentistry

Control of Active Disease

- Emergency treatment
- Extraction of hopeless teeth
- Oral hygiene instructions
- Scaling and root planing
- Reevaluation
- Periodontal surgery
- Adjunctive orthodontic therapy

Pre-prosthetic Surgery

- Management of mucogingival problems
- Preservation of ridge morphology after tooth extraction
- Alveolar ridge reconstruction
- Crown-lengthening procedures



Control of Active Disease

➤ **Emergency Treatment**

- Emergency treatment is undertaken to alleviate symptoms and stabilize acute infection. This includes endodontic and periodontal conditions

➤ **Extraction of Hopeless Teeth**

- Extraction of hopeless teeth is followed by temporary fixed or removable prosthetics. Retention of hopeless teeth without periodontal treatment may result in bone loss on adjacent teeth. Restorative margins are refined and provisional restorations refitted after the completion of active periodontal therapy.

➤ **Oral Hygiene Measures**

- Oral hygiene measures reduce plaque scores and gingival inflammation
- in patients with deep periodontal pockets (>5 mm), plaque control measures alone are insufficient in resolving subgingival infection and inflammation.



Scaling and Root Planing

- Scaling and root planing *combined with oral hygiene* measures reduce gingival inflammation and the rate of progression of periodontitis.

Reevaluation

- After 4 weeks the gingival tissues are evaluated to determine:
 - oral hygiene adequacy,
 - soft tissue response,
 - pocket depth .

This permits sufficient time for healing, reduction in inflammation and pocket depths, and gain in clinical attachment levels.





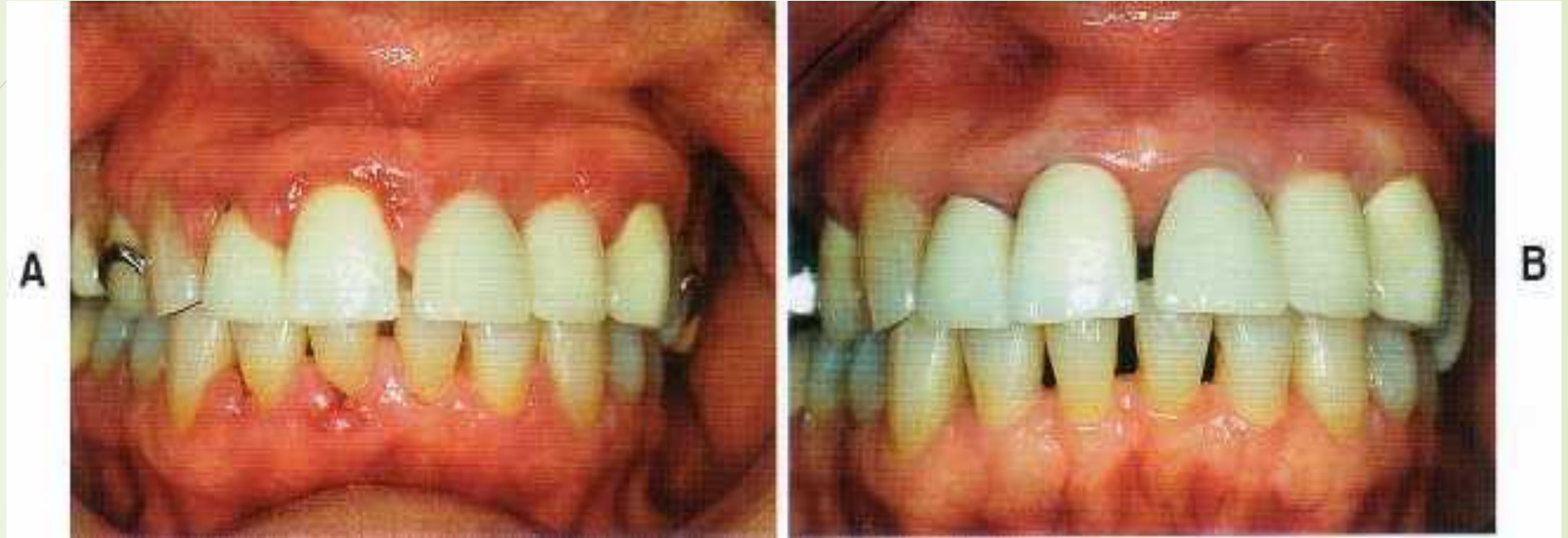
Periodontal Surgery

- In deeper pockets (>5 mm), plaque and calculus removal is often incomplete. As a result, periodontal surgery to access the root surfaces for instrumentation and to reduce periodontal pocket depths must be considered before restorative care may proceed.

Adjunctive orthodontic therapy

- ▶ As long as they are periodontally healthy, teeth with preexisting bone loss may be moved orthodontically without incurring additional attachment loss.





A, Before treatment. B, After 4 weeks, oral hygiene instructions and scaling and root planing have improved this patient's periodontal status



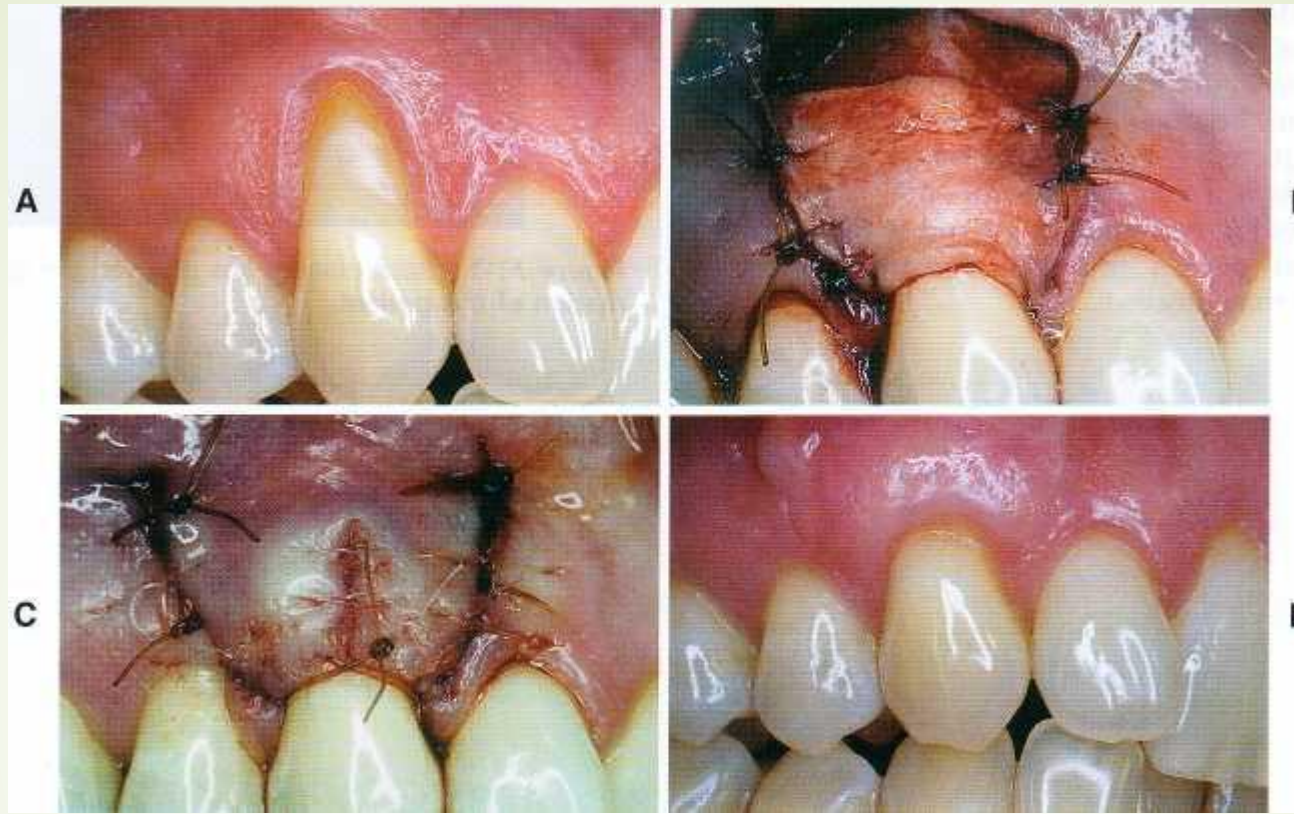
Preprosthetic Surgery

Management of Mucogingival Problems

Widening the attached gingiva accomplishes the following three objectives:

- Enhances plaque removal around the gingival margin.
 - Improves esthetics.
 - Reduces inflammation around restored teeth.
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- At least 2 months of healing is recommended after soft tissue grafting procedures, before initiating restorative dentistry





- Connective tissue graft placed under a double-papilla flap has been used to provide root coverage for a maxillary right canine. **A**, Maxillary canine before therapy.
B, Connective tissue graft placed over denuded root surface.
C, Papilla placed over connective tissue.
D, Final result



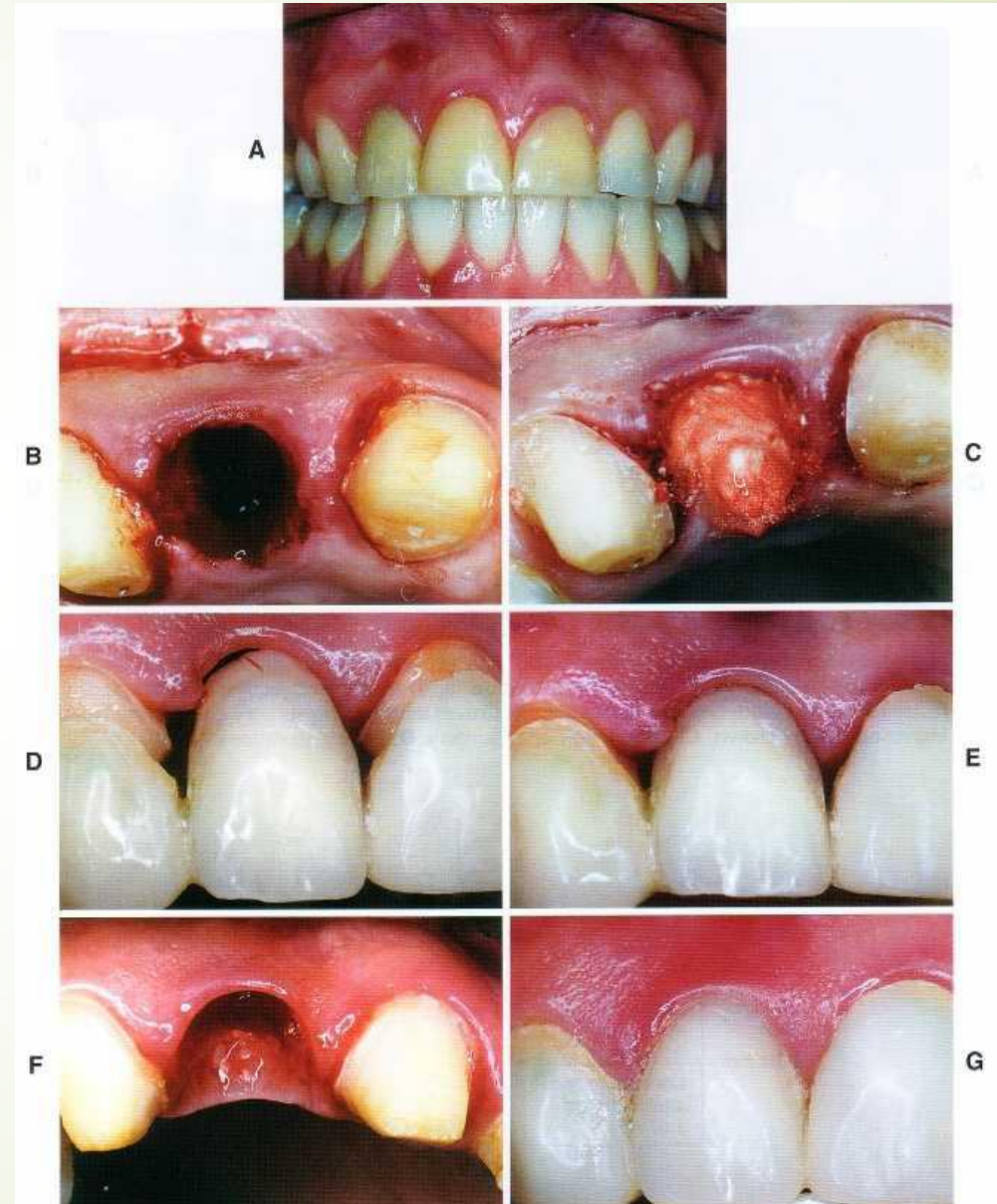


In preparation for a removable partial denture, this canine has received a gingival graft to increase attached gingiva and deepen the vestibule.



Preservation of Ridge Morphology after Tooth Extraction

- Alveolar ridge resorption is a common consequence of tooth loss.
- Ridge preservation procedures:
- for future placement of a dental implant or pontic,
- to prevent an unaesthetic deformity





Alveolar Ridge Reconstruction

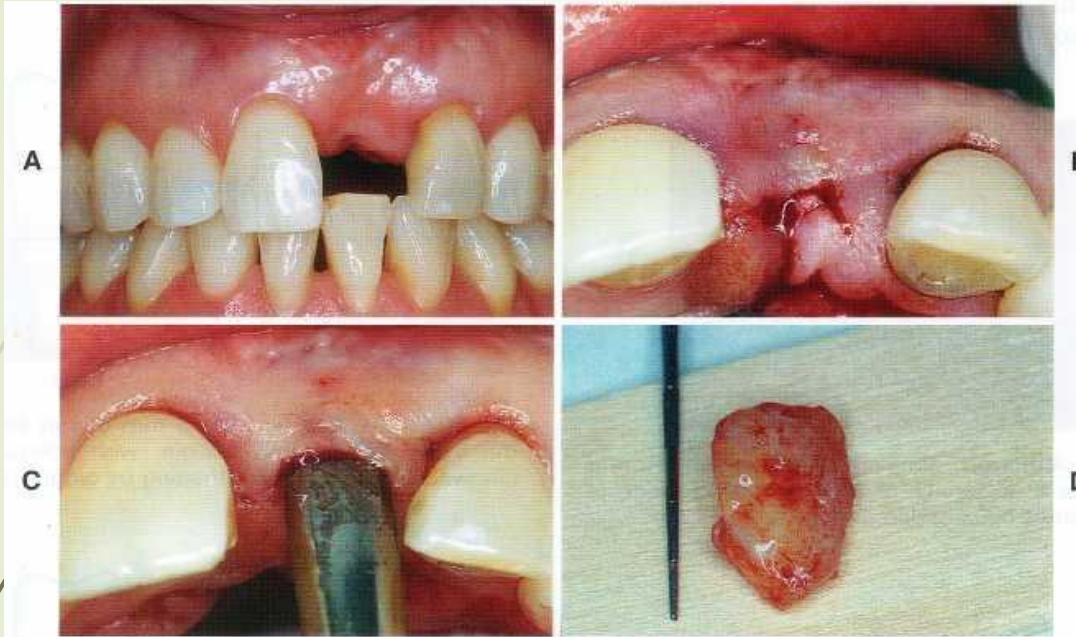
- ▶ Patients are frequently seen after tooth loss and alveolar ridge resorption have occurred.

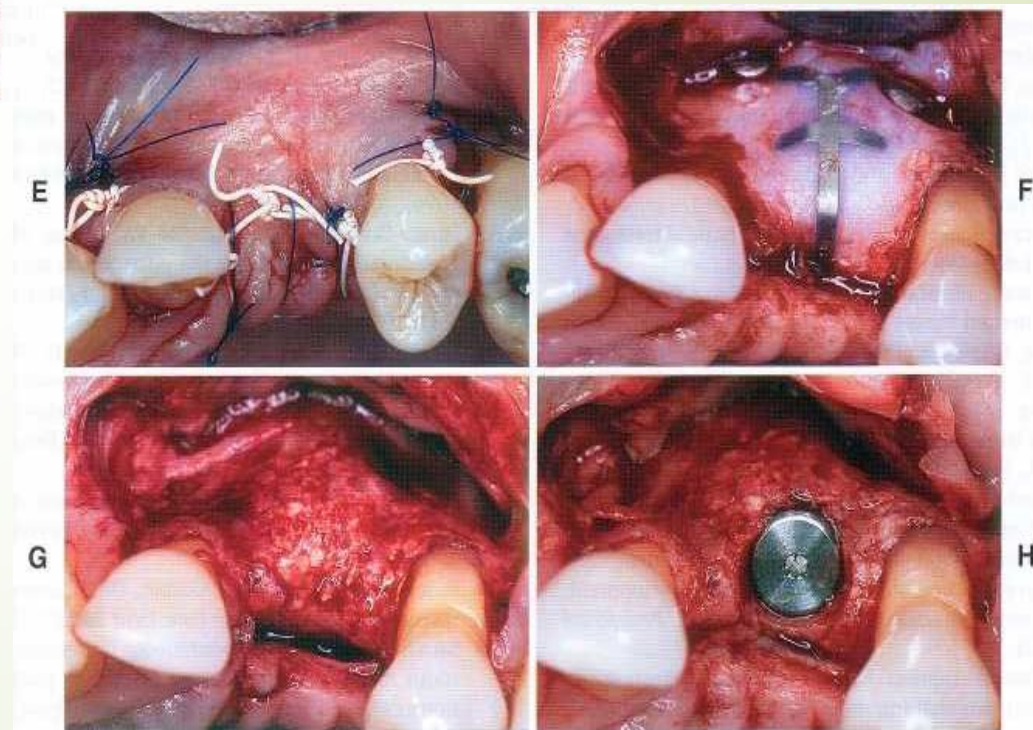
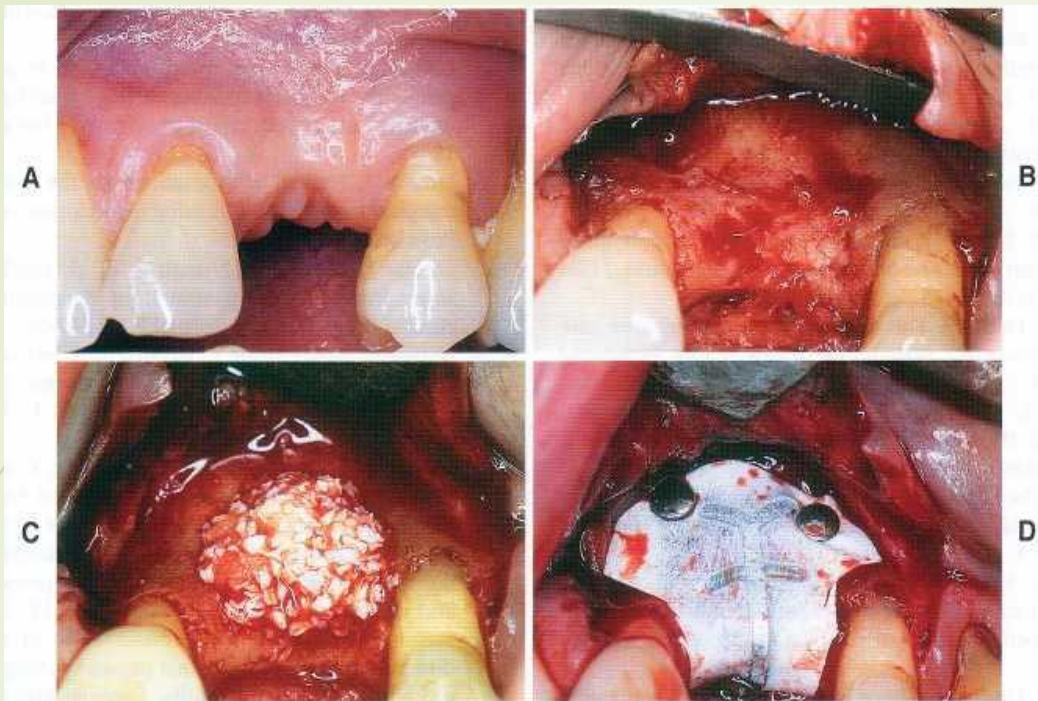
Alveolar ridge reconstruction is done:

- ▶ for an esthetic pontic or
- ▶ for the placement of dental implants.
- ▶ In the case of esthetic pontic construction, small defects may be treated with soft tissue ridge augmentation.
- ▶ For larger defects and in those sites receiving dental implants, hard tissue ridge augmentation are used .



Alveolar Ridge Reconstruction





Crown-Lengthening Procedures

Surgical crown-lengthening procedures are performed:

- to provide retention form
- to allow for proper tooth preparation
- impression procedures
- placement of restorative margins
- adjust gingival levels for esthetics

It is important that crown lengthening surgery is done in such a manner that the biologic width is preserved.





Surgical Crown Lengthening

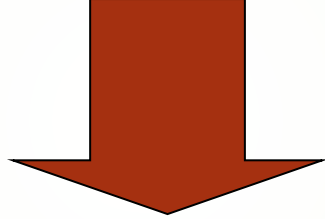
Indications

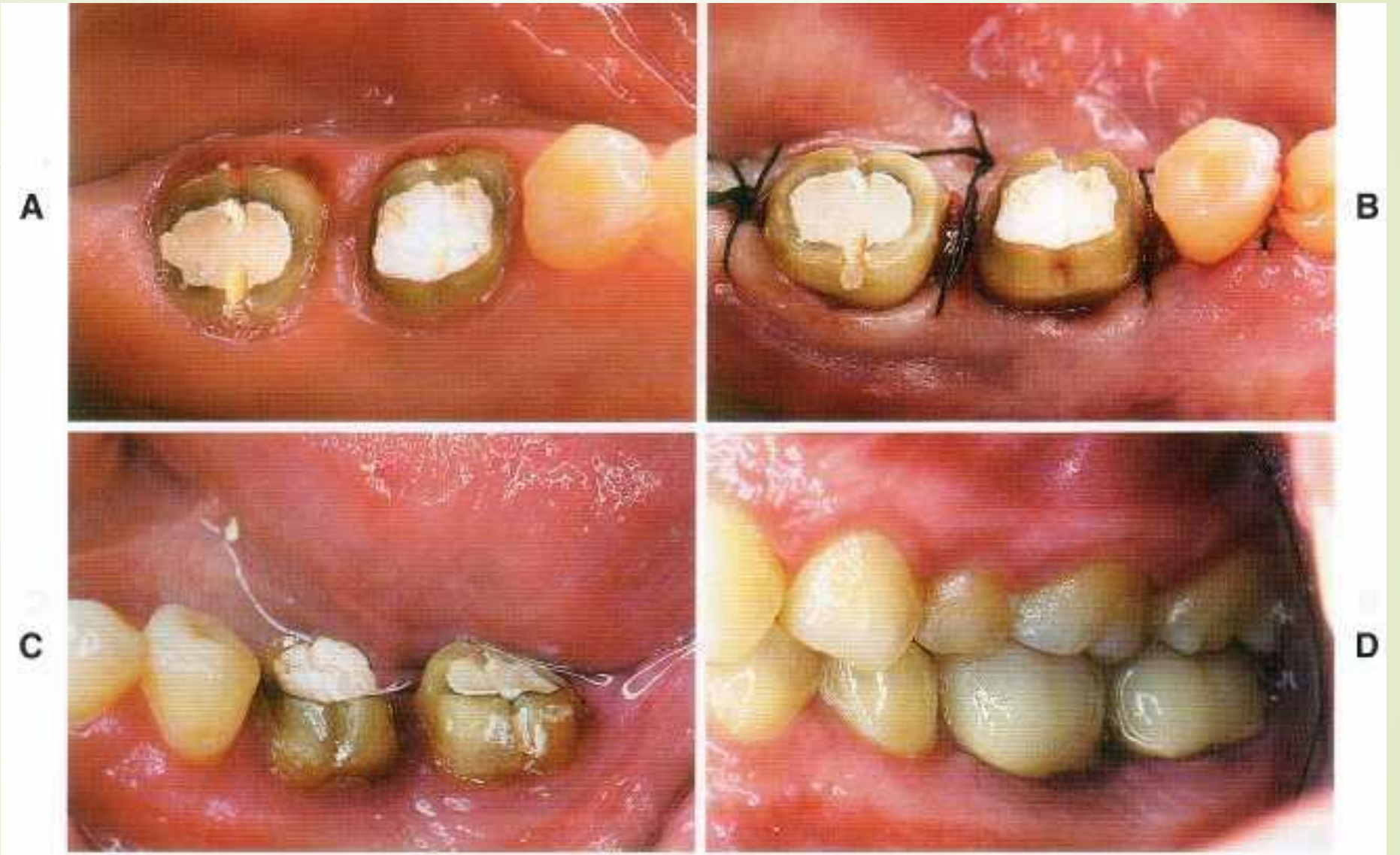
- Subgingival caries or fracture
- Inadequate clinical crown length for retention
- Unequal or unesthetic gingival heights

Contraindications

- Surgery would create an unesthetic outcome.
- Deep caries or fracture would require excessive bone removal on neighboring teeth.
- The tooth is unrestorable.

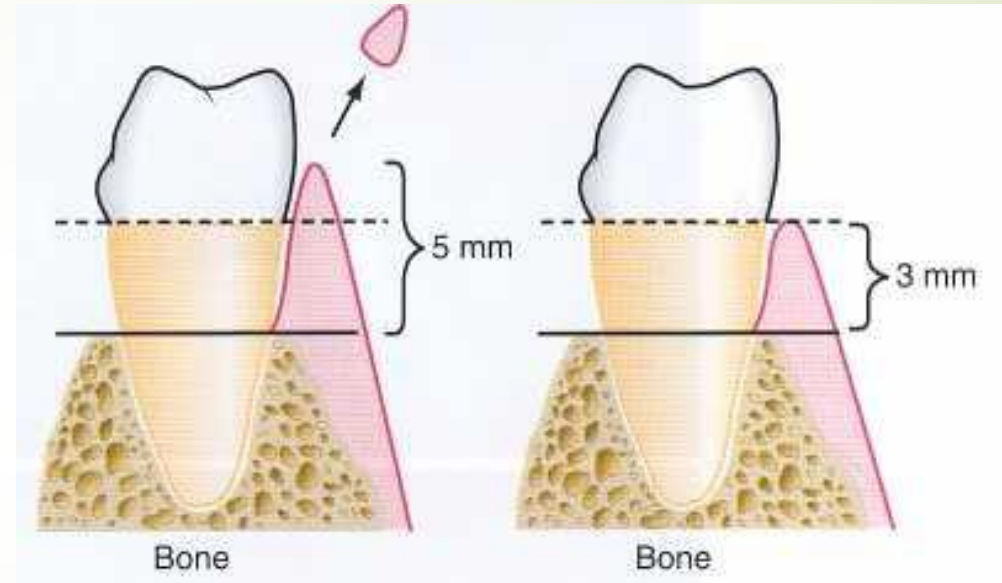




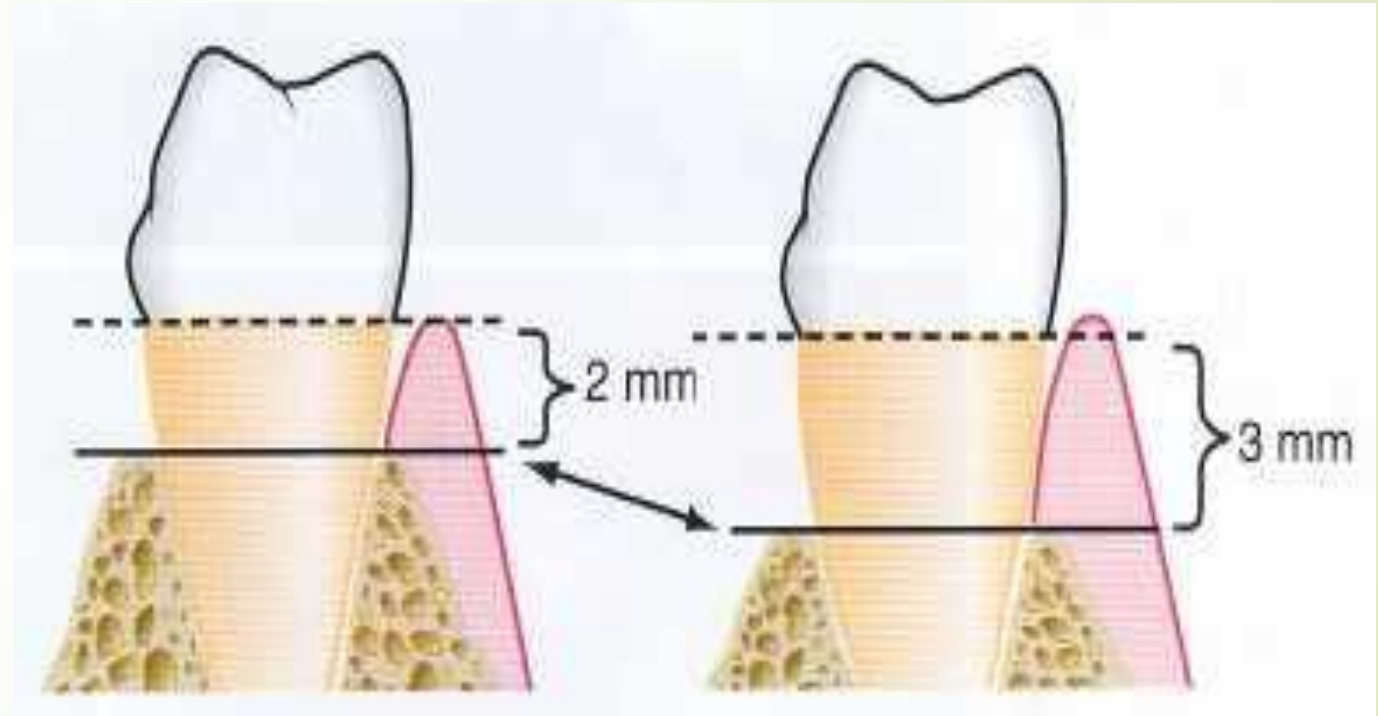


Surgical crown lengthening may include the removal of soft tissue or both soft tissue and alveolar bone.

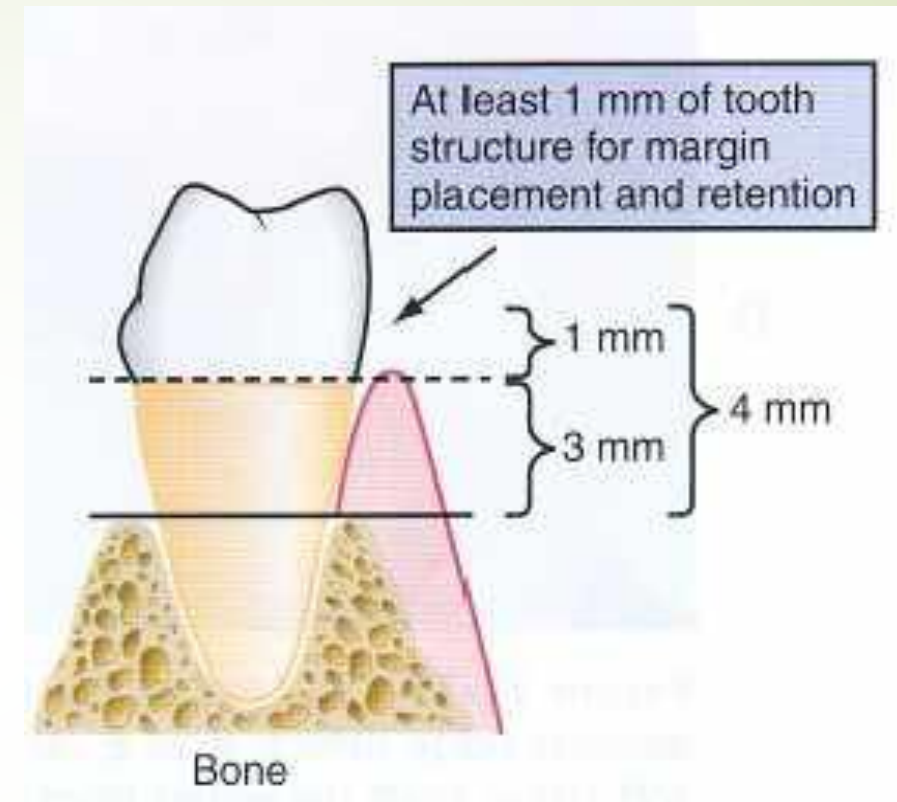
- Reduction of soft tissue alone is indicated if
 1. There is adequate attached gingiva
 2. There is more than 3 mm of tissue coronal to the bone crest .This may be accomplished by either gingivectomy or flap technique



Inadequate
attached gingiva and
less than 3 mm of soft
tissue coronal to the
bone crest require a
flap procedure and
bone recontouring



In the case of caries or tooth fracture, to ensure margin placement on sound tooth structure and retention form, the surgery should provide at least 4-5 mm from the apical extent of the caries or fracture to the bone crest



With the advent of predictable implant dentistry, it is important to weigh carefully the value of crown lengthening for restorative reasons as opposed to tooth removal

