**Periodontal Restorative Consideration #10**

**Rationale for therapy**

**1. Establish stable gingival margins**

**2. Healthy gingival tissues allow more predictable restorative procedures**

**3. Certain periodontal procedures provide adequate tooth length for retention and access for restorative procedures  
  
4. Periodontal therapy could result in repositioning of teeth  
  
5.Traumatic forces placed on teeth with ongoing periodontitis may increase tooth mobility, discomfort and possibly the rate of attachment loss. high occlusal forces will exaggerate the bone loss .**

**6. Orthodontic treatment in the presence of periodontal infections may result in negative detrimental outcomes**

**7. Successful esthetic and implant procedures may be diﬃcult or impossible without the specialized periodontal procedures developed for this purposes  
  
  
  
  
Sequence of Therapy:**

**1-Control of active disease:** 1-emergency ttt ; abscess ,endo-perio lesion ,pain

2-extraction of hopless teeth ; advanced cases so you take decision before initial periodontal ttt.

3-OH measures

4-scaling & root planning as a non-surgical procedure .

5-reevaluation usually after 2 weeks.

6-periodontal surgery.

7-adjunctive orthodontic ttt (in case u have pathological teeth migration as a result of the ttt).

**2- Pre-prosthetic surgery.:**

**1-Management of mucogingival problems:  
the objectives :-**

1-increase gingival dimention

2-achieve root coverage

3-manage root caries

**Indication:-**

1-creating a zone of attached keratinized tissue prior to restoration ttt.

2-augment tissue thickness prior or during orthodontic ttt.

3-esthetic need to cover exposed roots.

4-treat cervical carious & non-carious lesions.

5-pt comfort ; if the pt have recession so complain of root sensitivity.

**2- Preservation of ridge morphology after extraction  
for:**-anticipation of future implant placement.

-avoidance of aesthetic deformity.

-improve aesthetic outcome of prosthesis

**3-Crown lengthening procedures   
indications:**

1.To provide retention form to allow for proper tooth preparation, impression procedures, and placement of restorative margins.

2. To adjust gingival levels for esthetics.

3. To preserve the biologic width; prevent its violation.

**4-Alveolar ridge reconstruction  
...............................................................................................................................................................**Doxycycline can use as antibiotic or host modulating factor

Doxycycline as antibiotic we give 100mg 1\*2 for 14 days

Doxycycline for cretin period of time is drug of choice to treat periodontitisbut nowadays if patient not allergic to penicillin we give : amoxicillin 500mg 1\*3 for 10days and metranidazol 250mg 1\*3 for 10days

If pt allergic we give Doxycycline or erthomycin (azethromycin)  
  
  
  
  
  
 **notes:**-one of success criteria for connective tissue graft is no pocket   
-the only indication to do gingival graft in case of absence of attached gingival is only when we want to do restoration or preparation subgingivally cuz otherwise you will have inflammation.  
-**-The biologic width**: deﬁned as the physiologic dimension of the junctional epithelium and connective tissue attachment

relatively constant at approximately 2 mm (±30%)-

-Bone “sounding” is used to determine the biologic width for a speciﬁc site.  
**-** The concept is to stay *around 0.5 mm subgingival* and *not more* than that to minimize the risk of invasionthe biologic width.   
- it’s important to keep a safety zone which

means when we say the probing depth is 1mm for example ,we

go maximum .5 mm and not 1 mm (always keep a safety margin

to avoid invading the biologic width).  
B.W violations:  
- **1. *Bone loss*** of unpredictable pattern with a possibly

*resulting pocket formation or gingival* recession “Attachment loss.  
2- ***persistent chronic inflammation  
  
how to Dx:  
1 - Radiographs* 2) Examination of restorative margin   
3 *Bone Sounding***If the result is 2 mm or less, that means the we have a biologic width violation  
*#How do we correct the biologic width violation?!*

*We have two options :*

***1) Surgical crown lengthening:***-It’s a faster approach than orthodontics option.

-It has a contra-indication in the esthetic zone because there will be a black triangle due to papillary ressition or there will be gingival asymmetry, so we can't really do it in the aesthetic zone.

-Establish a distance of a biologic width PLUS 0.5 mm which is a

safety margin

***2) Orthodontics:***

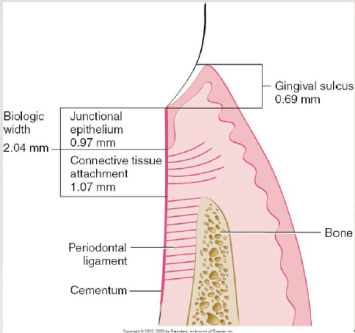
1. **Slow forced eruption followed by surgical crown lengthening**

**2.Rapid forced eruption with fibrotomy  
*3-crown to root ratio is better***

**#Papillary height is determined by:**

1)The level of the bone.

2)The biologic width.

3)the form (width) of the gingival embrasure  **  
Whats the mean that cause probing depth reduction?? ((VIVA QUESTION))**

**1-periodontal therapy involve the previous mechanism "resistant tissue ..etc "**

**2-recession**

**3-long junctional epithelium ?? " I cant hear it ☹**

**4-regeneration of bone & reestablishement of attachement.**

**if we invade the biological width ?either one of two\*\***

1- Chronic persistent inflammation ;most common to occur

Swelling ,redness and bleeding

2- attachment loss ; recession or pocket .  
  
**Contra-indications of Clinical Crown Lengthening procedures\***

1. Surgery would create an un-esthetic outcome;more in aesthetic zone, if we do it on one tooth their will be asymmetry or black triangle if papilla undergo a recession.

2. Deep caries or fracture would require excessive bone removal on adjacent teeth; if there's a deep caries & u need to remove too much bone to restore it .

3. The tooth is a poor restorative risk; questionable endodontic therapy or very limited tooth structure

4. Signiﬁcant invasion of the furcation area is anticipated; if u gonna do ostetectomy meaning remove the bone at the furcation area end with exposeding it .

**The checklist to prepare the tooth for crown lengthening:  
-Good quality diagnostic x-ray  
- Caries should be excavated,  
- Is the tooth restorable  
- Determine endodontic prognosis  
- Establish tentative restorative margins/finish lines  
- Establish adequate temporization  
  
  
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Notes#11:**

**) Supra-gingival**: (The best option) -The least impact on periodontium. -Unfavorable for aesthetics and retention  
**)Sub-gingival:** (The most common): The most risk is on the periodontium  
**Indications:**1.Create adequate retention and resistance form  
2.Allow for significant contour alterations  
3.Caries extending sub-gingivally  
4.Mask the interface between the restoration and the tooth.”aesthetic

**\*The relation between the contact point and the crest of the**

**bone:**

**-**Usually If this distance is ***4.5- 5mm***: There will be a complete

papilla fill in the embrasure always.  
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notes #12:  
**Membranes**

1-Non-resorbable membranes

2-Bio-resorbable membranes  
The purpose of barrier membranes are:

1. Exclusion of cells
2. Space maintenance
3. Clot stabilization

requirments :  
Biocompatibility

Cell exclusion

Space maintenance

Tissue integration

Ease of use & handling

Biological activity

1-Non-Resorbable

-Expanded polytetrafluoroethylene (ePTFE)

-Miscellaneous membranes

Millipore membrane

Rubber dam  
  
**-Preservation of keratinized gingiva**

**-Thick overlying surgical flap**-Healing is allowed for 4-6 weeks after membrane placement (longer periods are better; 12-16 weeks)

No probing for 3-6 months after membrane removal

Radiographic evidence of bone formation 6-12 months

PERFECT ORAL HYGIENE / TISSUE PERFORATION

Infection Membrane removal  
  
2-Bio-resorbable  
 Polyglycoside synthetic membranes

(Polylacticacid, polylactate/polygalactide copolymers)

Collagen

Type I or Types I + III (Porcine or Bovine)

Calcium sulfate   
  
**-They are easier to manage**

**More tissue compatible than non-resorbable membranes**

**Timing for resorption can be regulated**

**Second surgery for membrane removal is not required**

**-Lack of rigidity  
  
**

Enamel Matrix Derivative

Induction of cementogenesis

Hertwig’s Epithelial Root Sheath

Porcine origin

Amelogeneins + Ameloblastin + Enamelin + PGA

Pricipitates to the root surface  
**-Root conditioning with PrefGel ®**

**-Application of Emdogain  
  
-Precipitation of amelogenins on root surface (matrix formation  
-Clot formation**

**-Granulation tissue**-Migration & adhesion of mesenchymal stem cells (MSCs)

Proliferation of MSCs  
Cytokine production

Proliferation & differentiation of MSCsDifferentiation into cementoblasts

Deposition of cementum  
Insertion of periodontal ligament fibers into newly-formed cementum  
Filling of defect with newly-formed periodontal tissues  
Parallel formation of alveolar bone in the defect  
Periodontal regeneration with a new functional attachment  
**1.Regeneration of cementum**

**2.Bone formation**

**3.PDL formation**

**4.No recession**

**5.No junctional epithelium  
  
  
  
FACTORS AFFECTS GTR :  
        
  
GTR:** Procedures attempting to regenerate lost periodontal structures through differential tissue responses. reproduction or reconstruction of a lost or injured part.”  
  
  
  
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