Classification of Periodontal surgery

Dr. Fain Awartani
Objectives of Periodontal Treatment

- Restore tissue destroyed by disease (!)
- Reestablish the physiological contours necessary for preservation of periodontal health
- Prevent recurrence of disease
- Reduce tooth loss
Objectives of Periodontal Treatment

- Eliminate Pain
- Eliminate gingival inflammation and bleeding
- Reduce periodontal pockets and eliminate infection
- Arrest the destruction of soft tissue and bone
- Reduce the abnormal mobility
- Establish optimal occlusal function
Surgical Treatment of Periodontal Diseases

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Classification of periodontal surgery

1. Resective Procedures.
2. New attachment procedures.
3. Regeneration procedures.

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Resective procedures

- It is the procedure that means to eliminate or reduce the pocket, by excising or amputating the tissue constricting the pocket wall.
Resective procedures

Examples

• Gingivectomy, Gingivoplasty.
• Apically positioned flap with or without osseous surgery.
• Root resection.
Example #1
Gingivectomy, Gingivoplasty

- **Gingivectomy**: Excision of soft tissue wall of periodontal pocket.
- Basic rational is pocket elimination to allow access for root instrumentation.
- **Gingivoplasty**: To restore gingival contours. (not commonly used now days).
- External bevel incision is done to remove excess gingiva and healing is by secondary intention.

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533 Gingivectomy (F)
Excision of gingiva (GV) and/or gingival recontouring (GP). The MGL should not be touched.
Scaling and root planing.
Healing (epithelialization) of the GV/GP wound occurs by secondary intention beneath a periodontal dressing.

Excision and recontouring using gingivectomy and papilla knives or the electrosurgical loop.
Example #2

Apically positioned flap with or without osseous surgery

- The idea is to move the gingival margin Apically and not to excise the gingiva.
- Indications:
  - Deep supra and infra bony pockets.
  - Crown lengthening procedures with minimal attached gingiva.
  - Increase the zone of attached gingiva.
  - If its with osseous surgery, remove bone to have normal architecture by doing either Osteoplasty and/or Osteoctomy.

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Flap procedures (E)
The incision (inverse bevel) is made at varying distances from the gingival margin. A fully mobilized mucoperiosteal flap is reflected to reveal the root surface, furcation areas, and the alveolar crest. Then, roots are scaled and planed. Osteoplasty and furcation treatment etc. are possible. Interdental sulures. Repositioning of flap, if necessary at a different location.
Incision: 12B scalpel.
Apically positioned flap

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Objectives of Resective procedures

• Pocket elimination or reduction.

• A physiological gingival contour, tightly adapted to alveolar bone and apical to presurgical site.

• A clinically maintainable condition.

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Requirements for Resective procedures

• Access proper root instrumentation.
• Access for underlying alveolar crest.
• Maintain adequate band of attached gingiva.
• Heal in rapid fashion.
• Minimize the alveolar crest height.
• Maintain levels of clinical attachment on a long term basis.
• Reduce probing on a long term basis.

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2) New attachment procedures

- It is the reunion of connective tissue by formation of new cementum with inserting collagen fibers on root surface that has been deprived of its periodontal ligament.
New Attachment Procedures

Examples

Closed curettage.
Excisional new attachment procedure (ENAP).
Open flap curettage.
Modified widman flap procedure.

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Closed curettage

- Not common
- To remove the epithelium that lines the pocket wall.
- Disadvantage, is limited vision
- Is not applicable in case of deep pockets

ENAP

- Sharp removal of the epithelial lining of the Pocket
- Disadvantage, is limited vision
- Is not applicable in case of deep pockets
Modified widman flap procedure & Open flap curettage

- Most common done periodontal surgery.
- Internal bevel incision.
- Reflect flap, clean the area.
- Position the flap back to its original site, therefore have attachment between tissue and root surface.
- Pocket is reduced.

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531  Modified Widman flap (D)
Arcuate, minimum inverse bevel incision to the alveolar crest. Reflection of the partially mobilized flap, wherever possible not beyond the mucogingival line. Scaling and root planing. Flap adaptation by means of interdental sutures.

For the first incision, the double-edged 12 B scalpel is suited best.
Healing After New attachment procedures

• Healing occurs by the formation of long junctional epithelium
Regeneration procedures

• Are surgical procedures aimed at reproduction or reconstruction of lost or injured periodontium.

• Aim is to restore the periodontium to the normal physiologic levels. We have new bone and periodontal ligament formation
Examples of Regeneration procedures

- Grafts, bone grafts, soft tissue grafts.
- Guided tissue regeneration.
- Coronal positioned flap.
- Root surface demineralization (citric acid chemicals).
- Interdental denudation.
Grafts

• Not predictable nor overwhelming.
• Auto grafts (from same person, two step procedures, freeze and dry the bone).
• Allografts (from same species).
• Alloplasts (from synthesized materials), an implant from inert material.

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Connective Tissue Graft

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Guided tissue regeneration

• To guide the right type of cells (periodontal ligament) to attach to root surface, and trying to exclude undesirable cells (epithelium) from attaching to root surface.

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Factors influencing the success or failure of all regeneration techniques

- Plaque control.
- Systemic status that affect the periodontium.
- Traumatic injury to teeth and tissue.
- Root preparation.
- Wound closure.
- Soft tissue approximation.
- Post operative and long term maintenance.

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How to choose?
Criteria for method selection

- Characteristics of the pocket: depth, relation to bone, and configuration.
- Accessibility to instrumentation, including presence of furcation involvements.
- Existence of mucogingival problems.
- Response to initial therapy.
- Plaque control.
- General health.
- Diagnosis of the case and previous periodontal treatment.
- Aesthetic consideration.
Surgical Anatomy of the Periodontium And Related Structures

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Knowledge of the anatomy of the Periodontium and the hard and soft structures is essential.

- Mandible.
- Maxilla.
- Muscles.
- Anatomic Spaces.
MANDIBLE

• Mandibular canal (Inferior alveolar nerve and vessels).
• Mental Foramen (mental nerve and vessels) closer to second premolar.
• Lingual nerve.
• External oblique ridge may limit resective osseous therapy.
• Retromolar triangle. Area occupied by glandular and adipose tissue.
• Mylohyoid ridge (inner side of mandible)
MAXILLA

- Incisive canal (incisive papilla and vessels emerging through the canal).
- Greater Palatine foramen (opens 3-4mm anterior to post. Border of the hard palate) including all the nerves and vessels emerging from it and run anteriorly.
- Submucosa contains Palatal glands which protects the underlying vessels and nerve.

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MAXLIIA

- Maxillary tuberosity.
- Maxillary Sinus.
- Maxillary or mandibular tori.
Muscles

• Several muscles may be encountered during performing flaps particularly in mucogingival surgery.

• Mentalis, incisive labii inferioris, depressor anguli oris, incisivenlabii superioris and buccinator.
Anatomic spaces
ANATOMIC SPACES

- These spaces contain loose connective tissue but can be easily distended by inflammatory fluid and infection.
- Surgical invasion may result in dangerous infections and should be avoided.
- Canine fossa.
- Buccal Space.
- Mental space.
- Masicator space.
- Sublingual, submental and submandibular space.