Perio
Sheet #27
Done by: Dalin Jihad

Aims of periodontal treatment:

In every patient diagnosed with periodontitis, a treatment strategy, including the elimination of the opportunistic infection,mustbe defined and followed. This treatment strategy must also define the clinical outcome parameters to be reached through therapy at the very first visit.

As a periodontists, i should expect an outcome. Even if i did not reach it for one cause or another, e.g. complications that happened, it doesn't matter, i still have to have an outcome defined.

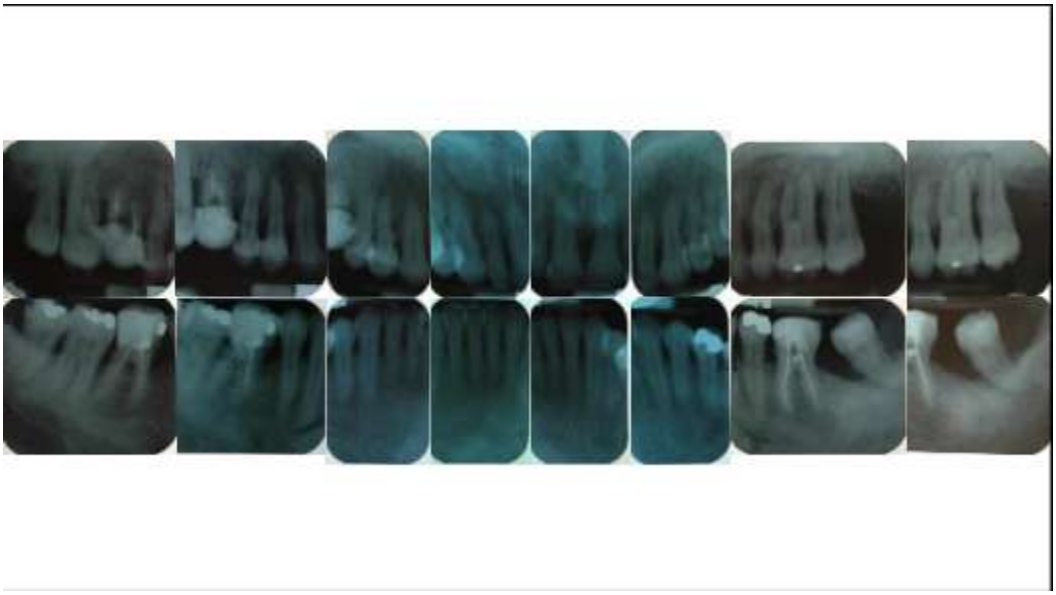
- Objectives of periodontal treatment
    - Reduction or resolution of gingival inflammation as evaluated by probing.
    - Reduction of PPD (and should be < 4mm)
    - Elimination of Class III furcation involvement
    - Absence of pain
    - Satisfactory esthetics & function

These are the objective i need to reach in order to reach the defined outcome. And so we have a multiple phase therapy.

Phases of periodontal treatment:

1. Systemic phase: Consultations with other medical disciplines if needed, smoking cessation counselling, and if drugs need to be administered they are at this phase.
2. 2.Initial phase: Cause-related therapy, which is the elimination of microbial infection and correct the factors that induce the inflammation like overhangs, defective margins, caries and so on. Because even if the patient has a good oral hygiene, these factors help retain plaque and cause gingival inflammation.
3. 3.Corrective phase: Surgery, endodontic therapy, restorative, orthodontic, &/or prosthetic treatment and it should end with prosthetic rehabilitation. If i have a complex treatment plan, i have to start with perio therapy. Never rehabilitate an oral cavity if the oral hygiene and oral cavity are not satisfactory.
4. 4.Maintenance phase: Supportive Periodontal Therapy (SPT) and it's a continous therapy. It starts at the first clinic of the treatment. When you start the scaling therapy, the phase starts. Low risk patients that have minimal calculus forming every now and then are to be seen by a GP every 6 months. However, periontists' patients, who are high or moderate risk, are to be seen by their priodontist every month.

A patient like this, doesn't have plaque and no calculus, he's all good right? Even with a little recession.



This is a radiograph for the same patient. This is to emphasise the importance of surgery, and how undermined is perio in our practice.

The patient will come to you complaining of spaces.
(Surgical phase
Extensive maintenance phase every 6 weeks; when the patient has systemic condition preventing him from doing surgery, or the patient dose not want to go in a surgery.)

Goals of periodontal surgery

The major goals of periodontal surgery are to create an oral environment that is conducive to maintaining the patient's dentition in a healthy, comfortable, and functional aesthetic state, and,when feasible (*because it's not feasible in every case, there are factors and reasons controlling it),* to regenerate and preserve the periodontal attachment. With bone graft, tooth extraction, open a flap and debridement, soft tissue graft, implant. Not to control the inflammation and disease, because to control them we need to perform non-invasive initial therapy and give a course of antibiotic if needed. But here, we are intervening and changing the oral environment to make it healthier.

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Role of periodontal surgery:

To change the oral environment and make it healthier. And this if defined based on different factors:

- Patient factors (local & systemic), can never go into oral surgery with bad oral hygiene; it's a contraindication. Also contraindicated in presence of active infection. Recent systemic unstable condition, like MI.
- Effective & beneficial surgery
- Type of defect morphology, indications & contraindications on the patient level or *the site ''tooth'' level. In perio we always talk patient level then site level.
- Best therapeutic approach for best results because every site and every defect can be approached by multiple ways each. The decision is made based on the skills of the operator.

We have four options for the patient at reevaluation:

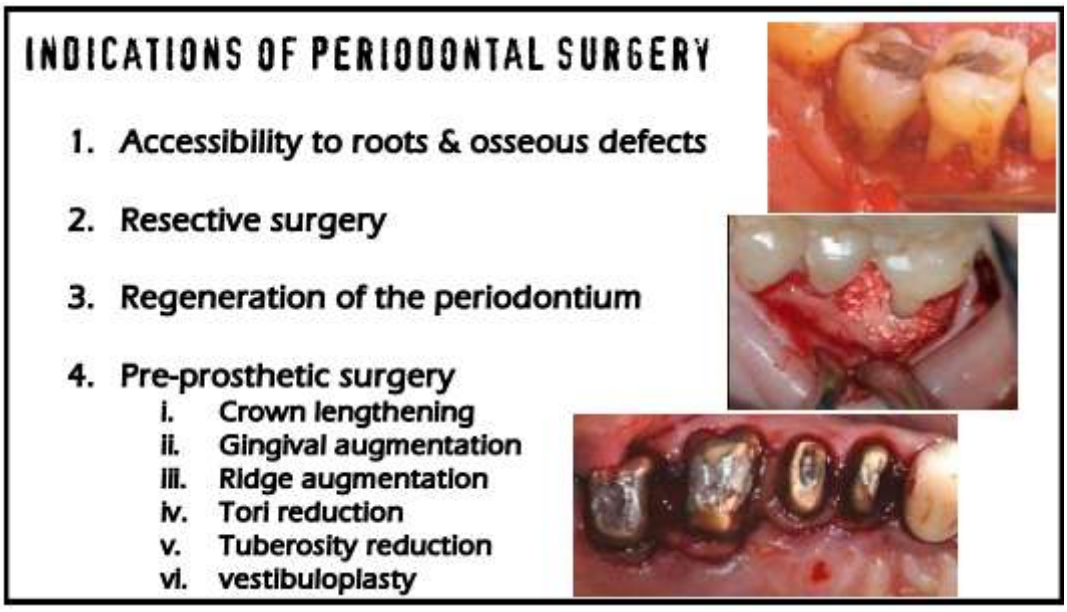
1. Maintenance program if good level of oral health achieved with initial therapy
2. Re-treat persistent diseased sites non-surgically, if sites included are minimal and the patient has good oral hygiene.
3. Intensive program of maintenance & reevaluation if disease is not amenable to surgery happens if the patient has a medical condition making surgery a contraindication or oral health.

Objectives of periodontal surgery:

Its goal is to create a healthier environment through manipulating the environment based on patient's factor and site factors and operator's skills.

1. Access to roots & alveolar bone: Enhance visibility, Increase SRP effectiveness, Less tissue trauma *(the main objective of any surgery is to gain access)*
2. Modification of osseous defects: Establish physiologic architecture of hard tissues (regeneration or resection), Treat alveolar ridge defects
3. Repair or regeneration of the periodontium
4. Pocket reduction & elimination of inflammation
5. Enhance maintenance by patient & practitioner
6. Improve long-term stability
7. Provide acceptable soft tissue contours
8. Enhance plaque control & maintenance, Improve esthetics

The first picture shows how the patient was on their first visit, and the second was after therapy. The patient condition was corrected through periodontal surgery with prosthetic rehabilitation; the doctor extracted the upper 6, open flap and debridement, followed by prosthetic bridge.



INDICATIONS OF PERIODONTAL SURGERY

5. Periodontal plastic surgery
   - i. Esthetic anterior crown lengthening
   - ii. Soft tissue grafting for root coverage
   - iii. Soft tissue grafting to obtain physiologic gingival dimension
   - iv. Papilla reconstruction
6. Gingival enlargement
7. Implant surgery
8. Biopsy
9. Treatment of periodontal abscesses
10. Exploratory surgery

Exploratory surgery: where the patient has pain and there were no clear cause of it; neither clinically ‘’pockets, pus, discharge, fistula’’ nor on radiograph, we usually find crack, fracture, vertical root fracture. E.g. in case of an endo treated tooth with a periapical radiorucency, the RCT was excellent, the gingival is healthy and no reason for the failure of treatment yet the case is not getting better so we explore to find a crack or a vertical fracture. Most of these cases end up being extracted.

CONTRAINDICATIONS OF PERIODONTAL SURGERY

Poor oral hygiene (poor plaque control)

Uncontrolled medical conditions:
- Unstable angina
- Hypertension
- Diabetes
- Myocardial infarction or stroke within 6 months

High caries rate

Unrealistic patient expectations or desires

High caries rate is a contraindication because that means we have a high level of bacterial. A very important contraindication, especially in aesthetic surgery, is unrealistic expectations, e.g. a female patient with a gummy smile wanting to do a crown lengthening, with many factors like incompetent lips and many other things that need to be fixed before (lip lengthening).

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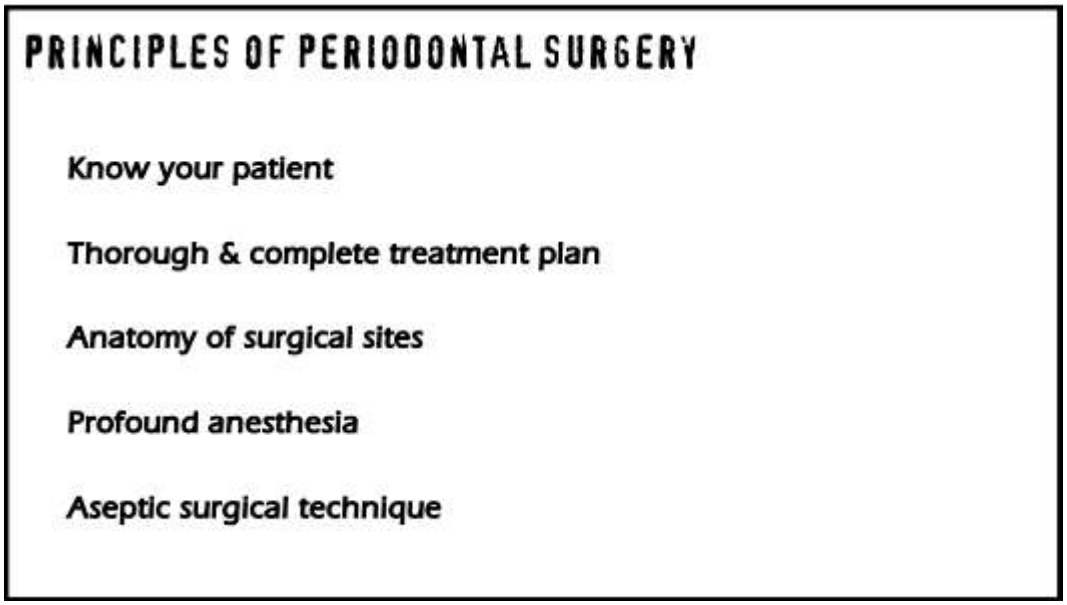
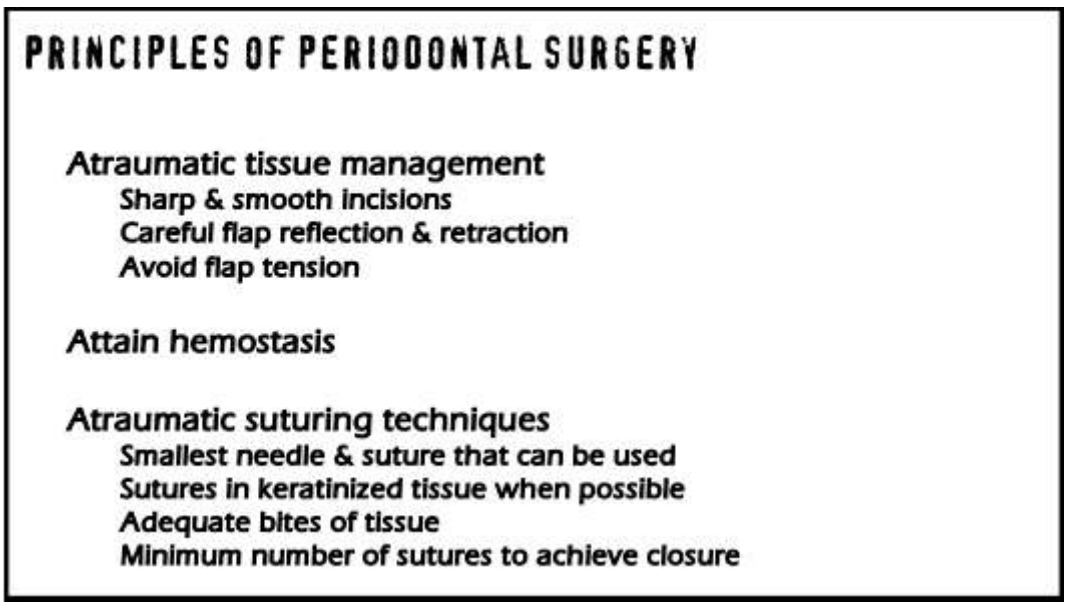
Always follow a sequence; otherwise the results will be uglier than what was before.

The ability to camouflage is a natural thing, for example a patient comes to you complaining of teeth on a side are longer than the other. It's not the real scenario; the occlusal plane itself is tilted. The patient will ask you to do crown lengthening. You should refer him to ortho treatment first to correct the maxillary teeth first then we'll consider crown lengthening. That's why you must know your patient's expectations.



Know your patient, their expectation, their wants, how they think, their psychology, their medical condition.



Control of bleeding should be established throughout the whole surgery. Any excessive bleeding means that there is something wrong, something uncontrolled. You must control the bleeding befire continuing your surgery.

PRINCIPLES OF PERIODONTAL SURGERY

Obliterate dead space between flap & bone (wound management)

Promote stable wound healing

KNOW YOUR PATIENT

Thorough medical history

Complete dental history & examination

Allergies

Drugs

Patient's expectations

Habits (smoking)

Consultations with treating physicians

COMPLETE & THOROUGH TREATMENT PLAN

Etiologic factors

Aggravating factors

Diagnosis

Prognosis

Morbidity

Expected result of the treatment

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Again know your patient. You have to have a complete and full treatment plan.you must identify all the etiological factors. establish proper diagnosis followed by prognosis on patient level and tooth level. Evaluate the morbidity and expected results.

SURGICAL ANATOMY

WHAT SEPARATES THE SUCCESSFUL SURGEON FROM ALL OTHERS IS HIS OR HER KNOWLEDGE OF ANATOMY AND WOUND HEALING. THE SELECTION OF AN APPROPRIATE SURGICAL TECHNIQUE THAT CAN BEST SATISFY THE TREATMENT GOALS AND OBJECTIVES IS DIRECTLY INFLUENCED BY ANATOMIC RELATIONS BETWEEN BONE, SOFT TISSUES, AND TEETH. IT IS ALSO IMPERATIVE THAT THE SURGEON BE FAMILIAR WITH THE LOCATION OF IMPORTANT ANATOMIC STRUCTURES, ESPECIALLY NERVES AND BLOOD VESSELS. TRAUMA TO VITAL STRUCTURES MAY COMPROMISE PATIENT SAFETY AND COMFORT AND ADVERSELY AFFECT PROPER WOUND HEALING.

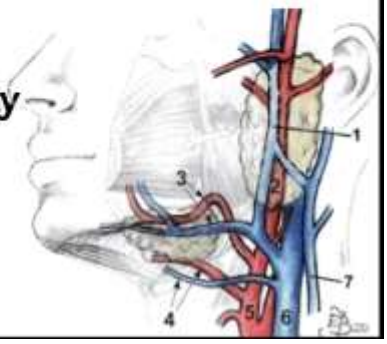
McDonnell HT & Mills MP

SURGICAL ANATOMY... BLOOD SUPPLY

Maintenance of an adequate blood supply to the tissue is THE SINGLE MOST IMPORTANT surgical principle to follow.

Major arterial supply to the oral cavity

- Lingual artery
- Facial artery
- Maxillary artery



If you maintain your blood supply, your surgery will be a success. Impair the blood supply and your surgery will ultimately fail.

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ANESTHESIA & PAIN CONTROL

PROVIDING PROFOUND AND LASTING ANESTHESIA FOR THE SURGICAL PATIENT ID A CRUCIAL PART OF PERIODONTAL SURGERY. WITHOUT IT, SURGICAL OBJECTIVES ARE IMPOSSIBLE TO OBTAIN. PATIENT AND PROVIDER STRESS LEVELS ARE INCREASED. AND THE PATIENT'S CONFIDENCE IN THE SURGEON IS DIMINISHED.

McDonnell HT & Mills MP

This depends on the choice of anaesthetic drug, potency, onset and duration of action, anatomy of blood vessels and nerves to know where to inject.

If i know my anatomy quite well, i may be able to work surgically on a lower 6 with just a mental block. It is possible only if i have my knowledge.

ANESTHESIA & PAIN CONTROL

Successful surgery

- Choice of L.A. drug
  - Potency (lowest concentration to block conduction of impulse)
  - Onset of action (related to pKa & pH)
  - Duration of action (linked to protein-binding capacity)
- Knowledge of the anatomy and nerve supply to the oral cavity
  - Trigeminal nerve
    - Maxillary division
    - Mandibular division

Administering the local anaesthesia:

We are administering a drug, molecules that are not present in the body, what happens is that diffusion will occur from high concentration gradient to low concentration gradient. Giving the anaesthesia too fast, the diffusion will happen much quicker and about half the solution will get into the blood vessels due to the concentration difference. Administering too quickly will cause ballooning and within few minutes half the solution if inside the blood vessels, and is systematically distributed decreasing the duration of action of the anaesthesia and the patient will complain of pain half through the surgery. Administering the drug slowly will establish needed anaesthesia using half a carpule instead of three and it will last through the whole surgery. Administering one carpule should take 1 minute and 20 seconds, allow it time to reach all the nerve endings and block them.

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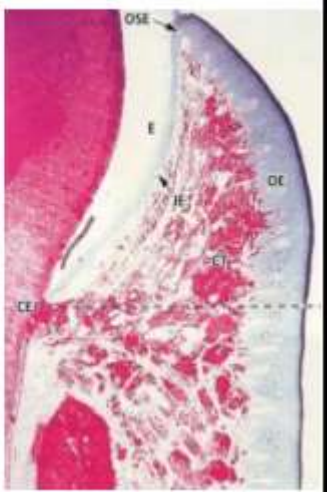
ASEPTIC SURGICAL TECHNIQUE

Unique & complex environment
- Continuous bacterial contamination
- Avascular radicular surface
- Communication with the oral cavity

3 aspects
- Operating room
- Operating team
- Patient



Why is asepsis quite important in perio surgery?
We already have a high bacterial numbers inside the wound, we need asepsis to eliminate an more infection. Our wound is always wet,

ASEPTIC SURGICAL TECHNIQUE

Operating room preparation
- Proper, clean & disinfected unit
- Perfectly sterilized instruments
- Irrigation with sterile saline or water
- Sterile coverings for light handles

Sterile coverings aren't always established, but we really need a clean surgery.

ASEPTIC SURGICAL TECHNIQUE

Operating team
- Surgical caps & masks
- Disposable & sterile gowns
- Disposable sterile gloves
- Eyes protection
- scrubbing

ASEPTIC SURGICAL TECHNIQUE

Patient preparation

- Informed consent (specific for surgical procedures)
- ORAL HYGIENE
- Smoking cessation for 1 wk before & 3-4 wks after surgery
- Pre-operative rinse with CHX for 30-60 sec
- Prophylactic antibiotics for healthy patients (NO EVIDENCE)

If the patient is quite stubborn concerning the smoking cessation, tell him 3 days before surgery and 10 after. The reason for the cessation is that after a few hours of stopping smoking, the blood supply increases slightly, and withing few days it tremendously increases.
CHX rinsing for 30-60 seconds eliminates about 99% of organisms present in oral cavity.

ATRAUMATIC SURGICAL TECHNIQUE

A SURGEON MUST BE DEFT, DELICATE, AND ACCURATE IN THE MANAGEMENT OF ALL TISSUES WITHIN THE SURGICAL FIELD.

McDonnell HT & Mills MP

ATRAUMATIC SURGICAL TECHNIQUE

Flap management

1. Incisions
2. Flap preparation
3. Flap design
4. Flap reflection
5. Flap retraction
6. Open flap debridement (OFD)
4. Flap positioning

PERIODONTAL SURGERY... INCISIONS

Incision selection & execution is based on careful planning that takes surgical anatomy, the surgical objective, flap design, & the principles of atraumatic tissue management into consideration.

McDonnell HT & Mills MP

Incisions must be chosen wisely and carefully in order to achieve the ideal results i defined.

PERIODONTAL SURGERY... INCISIONS

Careful planning (anatomy, objective, flap design, atraumatic tissue management)

Sharp cutting instrument

Definitive & smooth movement

Because surgical predictability begins with clean and smooth incisions resulting in faster healing and a more comfortable patient. Blade must always be sharp.

PERIODONTAL SURGERY... INCISIONS

1. External bevel incision (gingivectomy)
2. Internal bevel incision (reverse bevel / inverse bevel)
3. Sulcular incision (crevicular)
4. Releasing incision (vertical)
5. Thinning incision
6. Cutback incision
7. Periosteal releasing incision

Internal: directed towards tooth
External: directed away from the tooth.

PERIODONTAL SURGERY... INCISIONS... EXTERNAL BEVEL

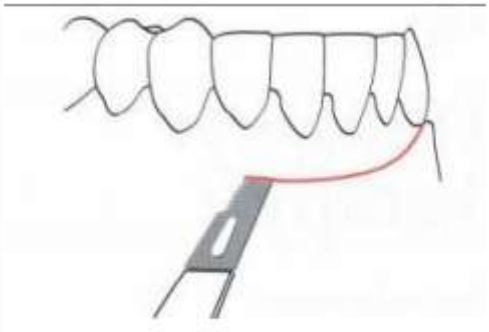
Objectives: Pocket Elimination
Access to Roots
Improved Gingival Contours

Contained to the gingiva

Coronal direction

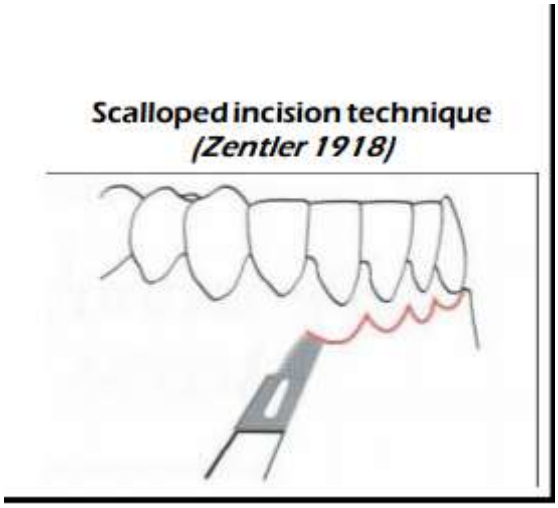
Gingivectomy + Flap surgery

This incision should be contained only in the keratinized gingival.

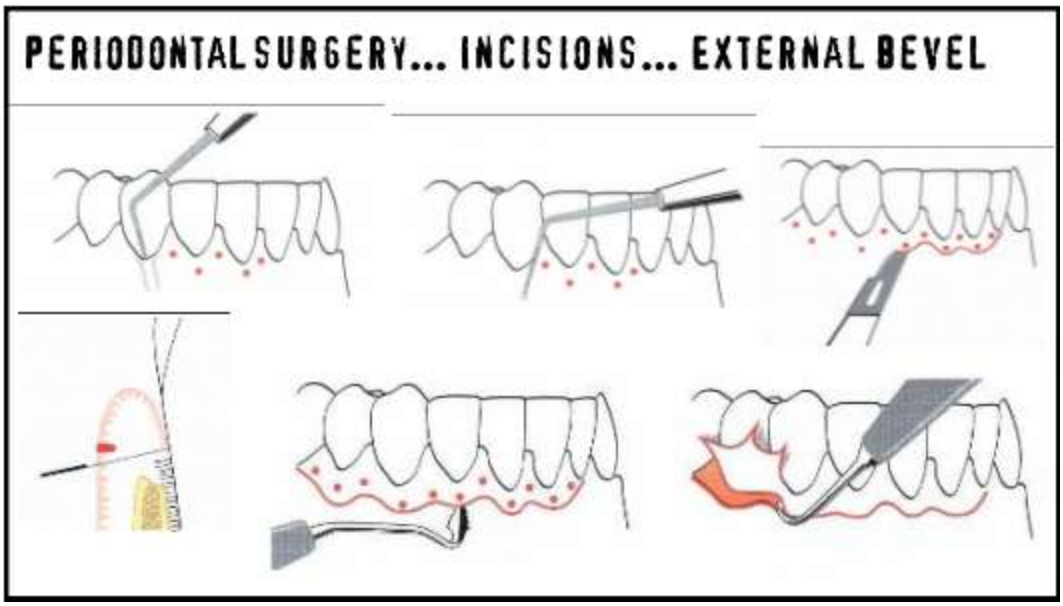


Straight incision technique
(Robicsek 1884)

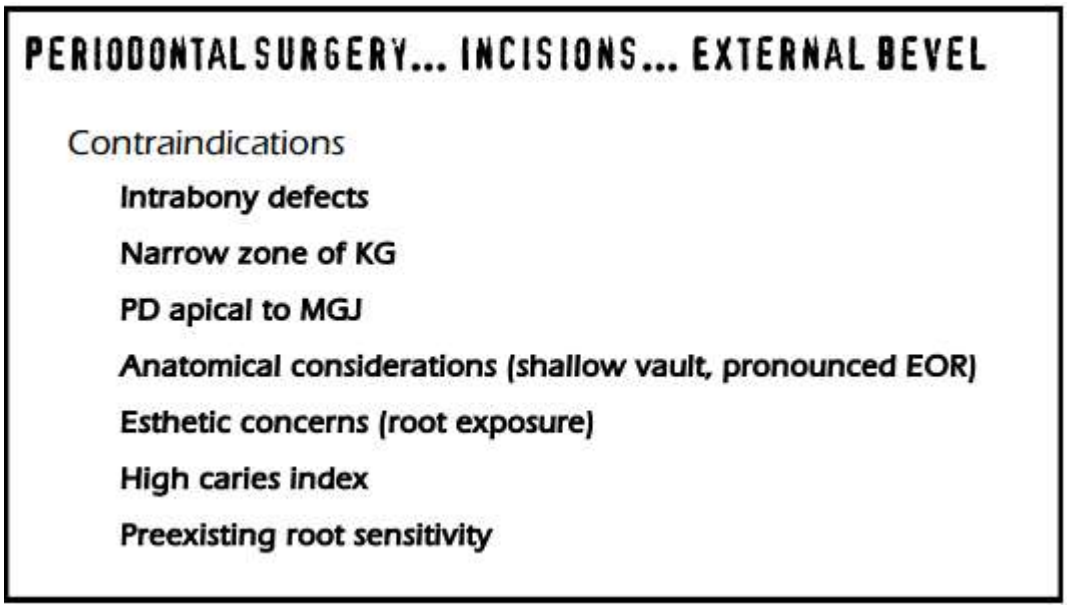
This is how it began, one straight clean cut.



Then they modified it to be scalloped cut for better aesthtics.



First measure the pocket, if pocket was in keratinized tissue, there's a tweezer like instrument that punches dots into the gingival, a smooth scalloped incision is made following the dots.



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Intabony defects: since there is defects inside the bone and with this technique the bone will be exposed.

PERIODONTAL SURGERY... INCISIONS... INTERNAL BEVEL

Useful in apically positioning the palatal flap margin

Facial surfaces when adequate KG

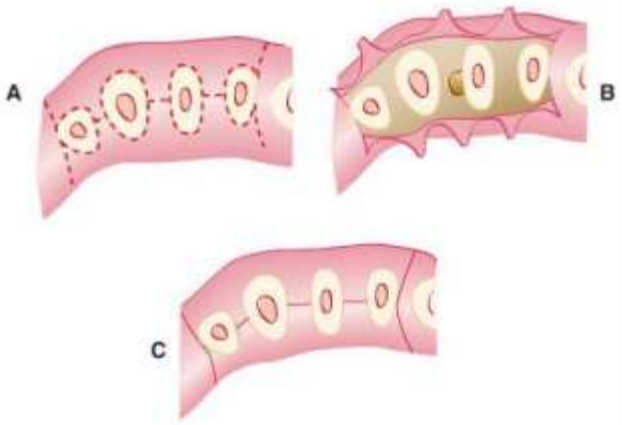
Scalloped incision (ANATOMY)

ANTICIPATED amount of apical positioning

PERIODONTAL SURGERY... INCISIONS... INTERNAL BEVEL

PERIODONTAL SURGERY... INCISIONS... SULCULAR

Preserve tissues



Perio: 27
It’s main goal is to preserve the tissues.

PERIODONTAL SURGERY... INCISIONS... VERTICAL

Line angles of teeth

Increase access to alveolar bone
Decrease tension of flaps
Limit inclusion of non-diseased sites

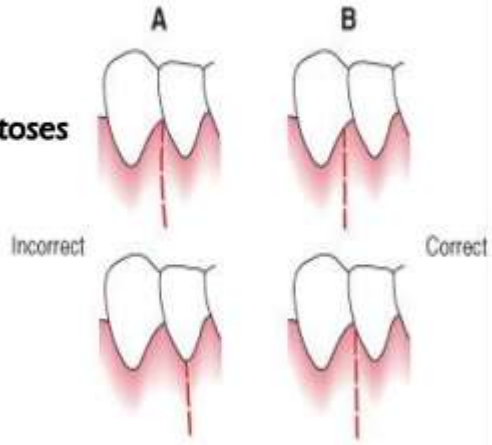
Vertical incision is made when there isn’t enough visual access, like the case in sulcular incision.

PERIODONTAL SURGERY... INCISIONS... VERTICAL

Placement

- **Pronounced concavities**
- **Prominent bony ledges or exostoses**
- **Root prominences**
- **Middle of dental papilla**

Include papilla (blood supply)



Always include the dental papilla to maintain the blood supply for that area.

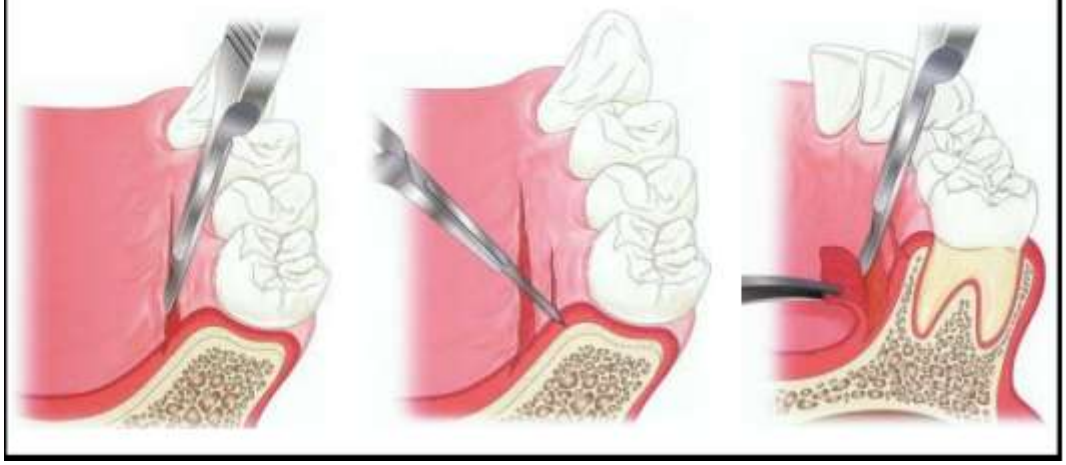
PERIODONTAL SURGERY... INCISIONS... THINNING

Reduce bulk of connective tissue from underside

Better flap adaptation
Greater comfort

We opened a flap, and the flap is very thick, for better adaptaion we make thinning to it.

PERIODONTAL SURGERY... INCISIONS... THINNING



PERIODONTAL SURGERY... INCISIONS... THINNING

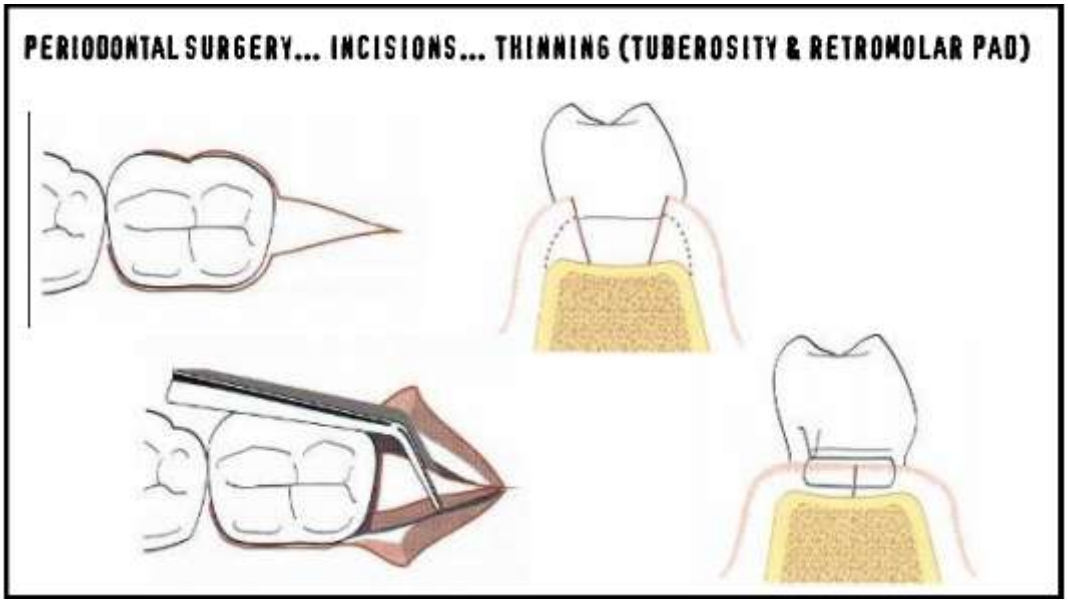
Thinning incision in other sites is called widging, ir distal wedging.

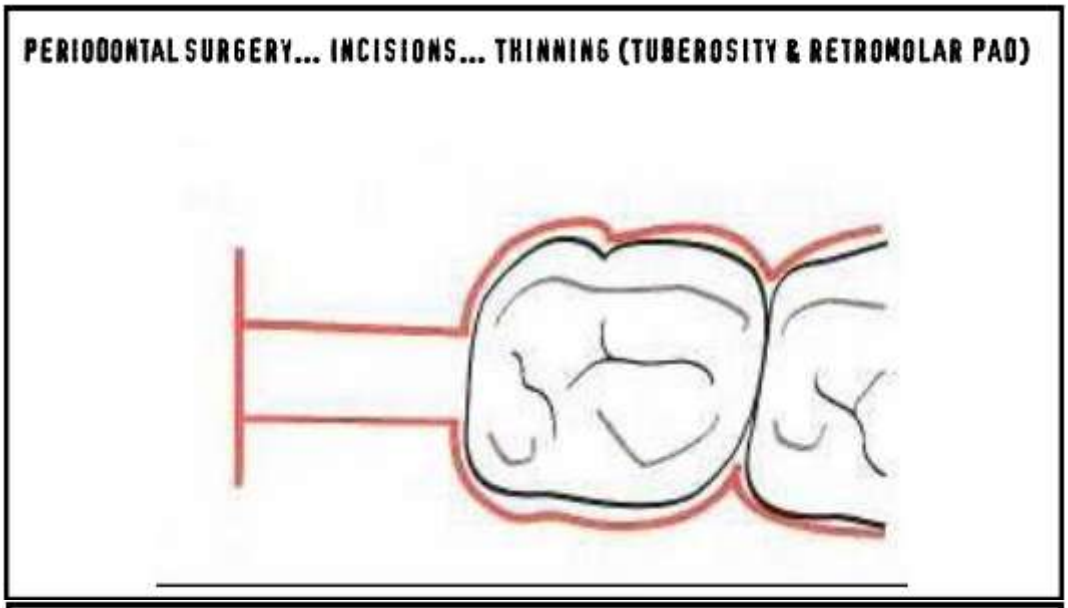
PERIODONTAL SURGERY... INCISIONS... THINNING (TUBEROSITY & RETROMOLAR PAD)

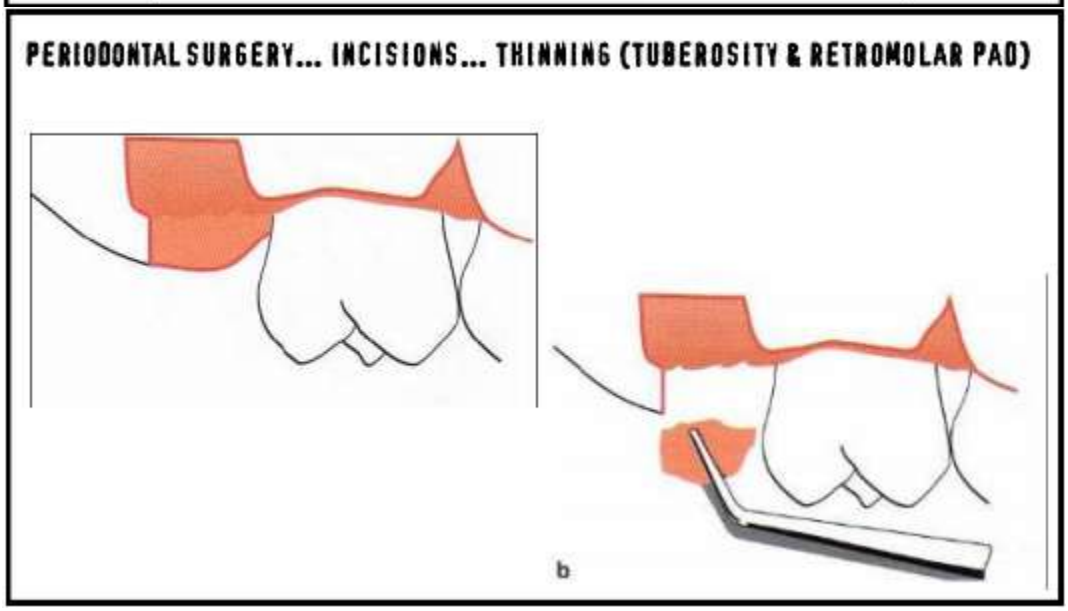
Triangular wedge

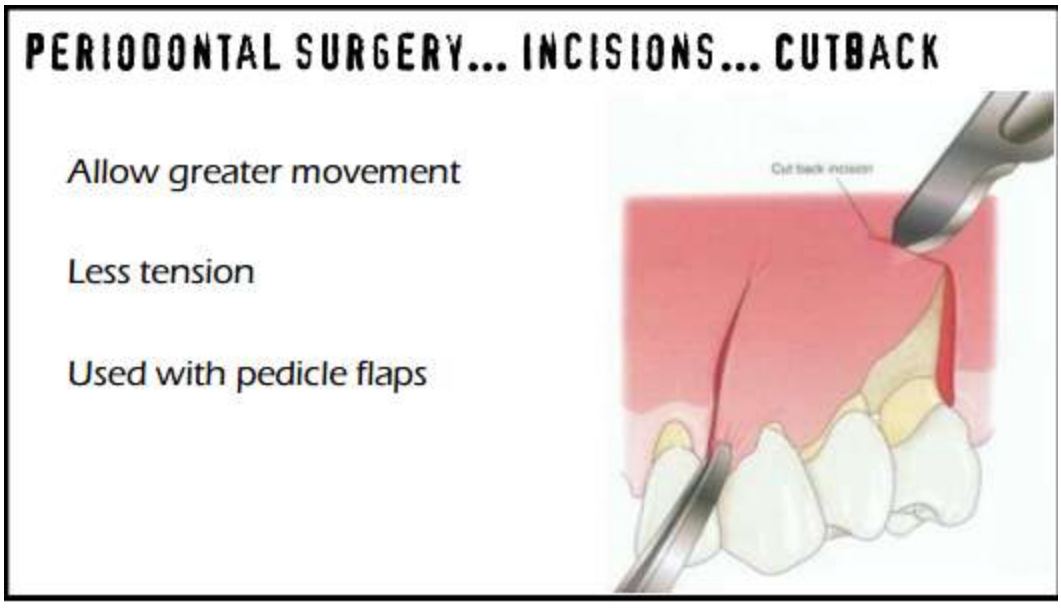
Linear wedge

Trap door









Allows greater movement, especially to reposition the flap, decreasing the tension.

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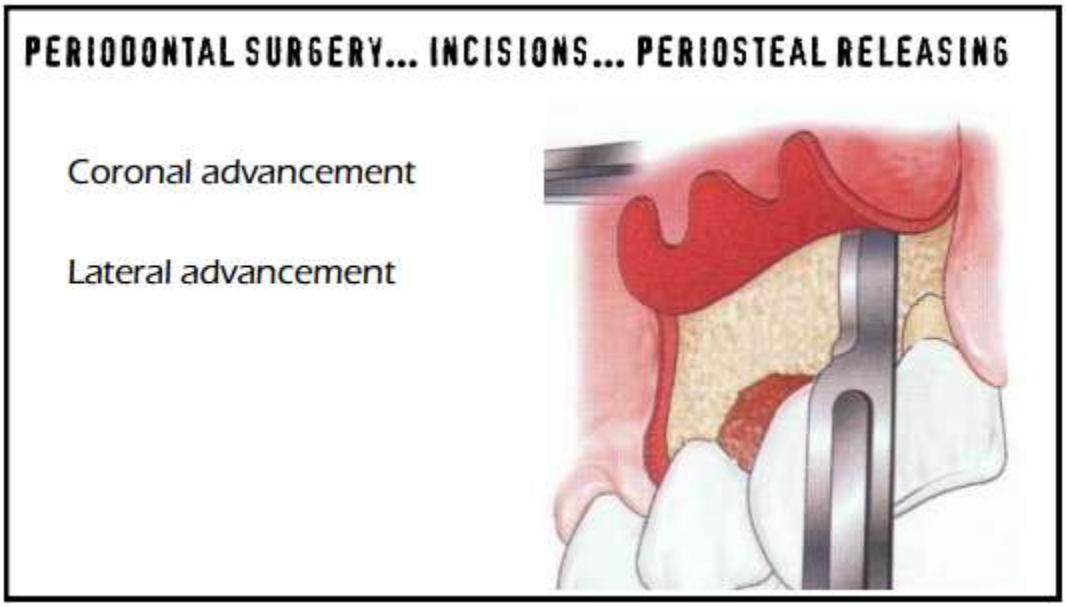

We opened a mucoperiosteal flap, to make coronal advancement we aren't able to do so because it is tightly help by the periostium. We make scorping, running the blade towards the bone, disconnecting the tissues from the periostium.