



**PRINCIPLES OF
ENDODONTIC
SURGERY**

Endodontic surgery



- Abscess drainage
- Periapical surgery
- Corrective surgery

Drainage of an abscess

- Relieves pain
- Increases circulation
- Removes a potent irritant

❖ Draining the infection does not eliminate the cause of the infection, so definitive treatment of the tooth is still needed.

Periapical surgery



Factors associated with success:

Preoperative factors

Factors associated with failure:

Postoperative factors

Indications

- Anatomic problems preventing complete debridement or obturation
- Restorative considerations that compromise treatment
- Horizontal root fracture with apical necrosis
- Irretrievable material preventing canal treatment or re-treatment
- Procedural errors during treatment
- Large periapical lesions that do not resolve with root canal treatment

Contraindications (cautions)

- Unidentified cause of root canal treatment failure
- When conventional root canal treatment is possible
- When re-treatment of a treatment failure is possible
- Anatomic structures are in jeopardy
- Structures interfere with access and visibility
- Compromise of crown-root ratio
- Systemic (medical) complications

Surgical procedure



Antibiotics

- Because of the nature of the surgery and the potential for the spread of infection into adjacent spaces, preoperative prophylactic administration of antibiotics is indicated. In addition, inadvertent opening of adjacent structures such as the maxillary sinus is expected to occur with molar surgeries.
- The surgeon should consider a preoperative dose of penicillin V potassium (2g) or clindamycin (600 mg) 1 hour before surgery.
- Other adjuncts such as the preoperative administration of corticosteroids may reduce edema and speed recovery. However, the use of corticosteroids may actually increase the risk of infection, so prophylactic antibiotics should be used.

Flap design

The three most common incisions are:

1. Submarginal curved (semi-lunar)
2. Submarginal
3. Full mucoperiosteal (sulcular)

Full mucoperiosteal incision

- This incision is made into the gingival sulcus, extending to the gingival crest.
- The full mucoperiosteal design is preferred over the other two techniques.
- A common misconception is that flaps should be designed that are trapezoidal, having a broader base than edge.

Surgical stages

- Anesthesia
- Incision and reflection
- Periapical exposure
- Curettage
- Root end resection
- Root end preparation and restoration

Irrigation

The irrigation is done before the MTA is placed to avoid washing the filler out of the apical preparation.

Radiographic verification

- Before suturing
- To verify that the surgical objectives are satisfactory

Flap replacement and suturing

- This brief intervention speeds the reattachment and reduces greatly the chance for recession.

Suture removal and evaluation

- Sutures ordinarily are removed in 5 to 7 days.
- After 3 days, swelling and discomfort should be decreasing and evidence of primary wound closure must be present.

Corrective surgery



- The management of defects that have occurred by a biologic response or iatrogenic error.
- These defects may be anywhere ,but usually occur on the root.
- Corrective procedure involves exposing, preparing and then sealing the defect .usually included are removal of irritants and rebuilding of the root surface.

Indications

- Procedural errors
- Resorptive defects

Contraindications

- Anatomic impediments
- Inaccessible defect
- Repair would create periodontal defect

Considerations

- Surgical approach
- Repair material
- prognosis

Surgical procedure

- After the basic approaches with periapical surgery
- Flap designs are similar but more limited
- Bone removal must be adequate to allow maximal visualization and access
- Preparation
- Material
- Flap replacement
- Suturing
- Digital pressure
- Suture removal should be within 3 to 6 days.
- Postoperative instructions: similar to those after periapical surgery.

Recall



- A 1-year follow-up is generally a good indicator . If after 1 year, radiographic evidence shows no decrease in lesion size or the lesion size increases, it generally indicates a failure and persistent inflammation.
- A decrease in lesion size may lead to complete healing and requires evaluation at 6 to 12 months.
- Persistent symptoms also indicate failure.
- Healing by scar tissue formation is considered a successful outcome.

When to consider referral



- Training and experience
- Determining the cause of root canal treatment failure
- Surgical difficulties



THANK YOU