CHAPTER OUTLINE

BIOLOGIC CONSIDERATIONS
ENDODONTIC SURGERY
   Medical Considerations
   Biologic and Anatomic Factors
   Healing After Surgery

PULP RESPONSE
   Changes with Age
   Nature of Response to Injury
BLEACHING
   External Stains
   Internal Stains

PERIRADICULAR RESPONSE
   Healing
   medically compromised
   patients
RESTORATIVE CONSIDERATIONS
   overdenture Abutments
   coronal Seal

HEALING
   Procedure
   Prognosis
   Number of Appointments
   Additional Considerations
TRAUMA

MEDICALLY COMPROMISED
   Patients
   Diagnostic Procedure
   Radiographic Findings

DIAGNOSIS
   Endodontic Pathosis
   Other Pathoses
   Treatment Planning and Case Selection
   Treatment Considerations

DIFFERENTIAL DIAGNOSIS
   Impact of Restoration
   Retreatment
Endodontics has been successively performed on patients ranging from age 2yrs to 96 yrs

- Endo is far less traumatic than extraction in older patients

- Older patients (60-80) are very aware of their oral health and the saving of each tooth

- Dentures have been avoided for their whole life
Biologic Consideration

- Systemic
- Local
Pulp Response

- Changes with age
  - Chronic versus physiologic

- Structural

- Calcification

- Dimensional
Nature of response to injury

- Response to irritations
- Age
- Systemic condition (atherosclerosis)
Pulpal changes due to Aging

- The number and size of pulpal cells decrease
- The number of pulpal collagen fibers increase!!!
- Constant recession of the pulp due to secondary and tertiary dentin formation
- The number of blood vessels and nerve fibers decrease
Pulpal cellular changes due to Aging

- The number of odontoblasts and fibroblasts decrease

- Remaining odontoblasts and fibroblasts are more likely to appear less active. (In these normally active cells, there are fewer organelles associated with synthesis and secretion)
Pulpal fibrotic changes due to aging

- Decrease in number and size of fibroblast

- Apparent increased fibrosis with time may not be from continued formation of collagen but may be due to the persistence of connective tissue sheaths in an increasingly narrow pulp space
• Periradicular response (No difference with young people)
• Healing (a slight delay in healing)
• Medically compromised patients
  • HIV
  • Diabetes
  • Immunosuppressant therapy
  • Hypertension
  • Osteoporosis
    • Bisphosphonate therapy
Diagnosis

- Diagnostic procedure
  - Chief complaint
    - Patient’s dental knowledge and ability to communicate
- Medical history (systemic condition and drugs)
- Dental history
- Subjective tests (absence of significant signs and symptoms are common)
- Objective tests
Objective tests

- Pulp vitality testing
  - EPT and pacemaker
- Periapical testing
Diagnosis

- Radiographic Findings
  - Parallel and bitewing
Differential diagnosis

- Sinus infection
- Muscle spasm
- Headache
- Temporomandibular joint dysfunction
- Neuritis
- Neuralgia
Treatment planning

- Procedure
  - Extensive restoration, a history of multiple carious insults, periodontal involvement, decreasing pulp size, tipping and rotation are all factors
- Prognosis
- Number of appointments
Root canal therapy

- Time required
- Anesthesia
- Isolation
- Access cavity preparation
- Working length
- Cleaning and Shaping
- Intracanal medicaments
- Obturation
Retreatment

- Refer to endodontist
Endodontic surgery

- incision for drainage
- periradicular procedures
- corrective surgery
- root removal
- intentional replantation
Endodontic surgery

- Medical consideration
- Anatomic and biologic factors
- Post surgical healing
  - Ecchymosis
Bleaching

- Internal and external bleaching
Restorative consideration

- Overdenture abutments
  - Root canal therapy is recommended
- Coronal seal
Endodontic Complications in Treating the Geriatric Patient

1. Pulpal calcifications may interfere with location of remaining pulpal spaces.
2. Heavily restored teeth may interfere with endodontic diagnosis and treatment.
3. Long-standing periodontal disease may affect pulpal status.
4. Attrition, abrasion, gingival recession is more prevalent.
Endodontic Complications (Cont.)

5. Keeping the older patient informed & knowledgable may take longer
6. Medical histories tend to be more complex
7. Elderly patients may have postural problems as well as stamina considerations.
8. Elderly patients may more often have problems with the rubber dam, such as breathing, gagging and salivary collection.
Endodontic Recall

- In the older patient, it may take longer for a periapical lesion to heal than in a younger patient.
- It may take 2 years for a PA lesion to heal as opposed to 6 months in a younger patient.
Endodontic Considerations

- More calcifications
- Smaller canals
- Larger more complex restorations impact access
- Time and physical constraints of patients
- Longer/more appointments due to reasons identified
  - Adjust to accommodate patient limitations