ENDODONTIC TREATMENT IN THE ELDERLY
Geriatrics is the branch of medicine that focuses on health promotion, prevention & treatment of disease & disability in later life.

The term itself can be distinguished from gerontology, which is the study of the aging process itself. The term comes from the Greek geron meaning “old man” & iatros meaning “healer” & was proposed in 1909 by Dr. Ignatz Leo Nascher.
Objectives

- To discuss the effect of aging on the diagnosis of pulpal & periapical diseases & successful RCT
Medical history

- Elders use more drugs than youngers
- Consider the interaction of drugs (decline in renal & liver function)
- Some may not understand the implications of their medical condition
- Some may be reluctant to let the clinician into their confidence
Chief complaint

- Allow the patient to explain the problem in his/her own way
- Opportunity to observe the ability to communicate, interest, etc
- Pain associated with vital pulps (caused by heat, cold, sweets or referred pain) seems to be reduced with age
Dental history

- Dental histories are rarely completed.
- History of pain may establish the degenerative process.
- Subclinical injuries caused by repeated episodes of tx ex: multiple restorations may accumulate & approach a significant threshold.
Subjective symptoms

- Patient's complaint
- Stimulus that causes pain
- Nature of pain

“Determining types of tests are necessary to confirm findings”
Objective signs

- Missing teeth
  - loss of chewing efficiency: more cariogenic foods, xerostomia
  - loss VD: limit mouth opening, TMJ dysfunction

- Gingival recession (sensitivity, less resistant to decay)
Objective signs

- Root caries, attrition, abrasion & erosion
Objective signs

- Pulpal calcifications
- Multiple restorations
- Marginal leakage
Reparative dentine form, canal & chamber decreases in size

Figure 5-3  A. Maxillary lateral incisor shows evidence of previous caries on the distal aspect. Pulp chamber and the coronal third of the canal are patent; however, the apical one half is significantly reduced. B. Histologic appearance of what may be occurring in A is visualized. The canal narrowing and blockage is noted (B&B stain 10×).

Figure 5-4  A. Mandibular anterior teeth with significant calcification are present. B and C. Histologic variations may be noted in these types of calcified canals (H&E stain 40×).
Objective signs

- Cracks/craze lines
- Periodontal diseases
Pulpal calcifications

- Common occurrence
- Pathologic process related to injury
- 2 types of calcifications
  - Pulp stones (denticles) found in coronal
  - Diffuse (linear calcifications) found in radicular
Pulp stones

- Organic matrix composed of collagen fibrils in which hydroxyapatite crystals are embedded
- 2 types: free & attached
Pulp calcifications

- CDJ moves farther from radiographic apex (0.5–2.5 mm)
- 2–3 times increase thickness of cementum (100–200µ in youngers)
Age changes

- Continued formation of 2\textsuperscript{nd} dentine
  - Maxillary anterior: lingual wall
  - Molar: floor of pulp chamber
- Reduce size of pulp chamber & canals
- Reduce number of nerves & blood vessels
Age changes

- Increase number & thickness of collagen fibers
- Increase peritubular dentine, dentinal sclerosis
- Decrease dentinal permeability (reduce diameter of dentinal tubules)
Test

- Transilluminating & staining to detect cracks
- No correlation between degree of response to EPT & degree of inflammation
- Weaker response to EPT (fewer nerve branches)
Test

- Referred pain should be considered
- Test cavity is less useful (reduce dentin innervation)
- Presence of tori, exostoses & denser bone may require increased exposure times for contrast for x-ray film
Test

- Periapical area must be included in the radiograph
- Lamina dura should be examined (incidence of cysts & tumour increase with age)
Diagnosis & Treatment plan

- **One-appointment** RCT is considered
- **Consultation & Consent**
- Life expectancy should not alter tx plans & is no excuse for extractions or poor RCT
Treatment

- Morning appointments are preferable
- Isolation (GI when need mechanical retention, multiple-tooth isolation)
- Access (canal position, root curvature & inclination should be considered)
- Magnification (2.5 to 4.5)
Access & Endo surgery

- Microscope

- Magnification
  - Better visibility
  - Greater precision
  - Better fine coordination
  - Upright seated position for dentist

- Illumination

- Instrumentation
Problem-solving in tooth isolation

- **Leakage**
  - Patched or blocked with Cavit, OraSeal, Rubber base adhesive or periodontal packing
  - Replace with a new one
Treatment

- DG 16 explorer
- Very few canals have adequate diameter to allow the safe & effective use of broaches
- Flaring should be performed to provide for a reservoir of irrigation
Treatment

- CDJ vary from 0.5-2.5 mm from the apex
- Do not require great tapers
- Coronal seal is important
Success & Failure

- Rate of bone formation & normal resorption decreases with age & aging of bone results in greater porosity & decreased mineralisation of the formed bone.

- 6-month recall period to evaluate repair radiographically may not be adequate.
Further Reading

- Pathways of the Pulp 9th edn
- Problem Solving in Endodontics 4th edn