

牙髓病學 Endodontics

ENDODONTICS and PERIODONTICS INTERRELATIONSHIP

By

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學習目標

All students must be familiar with the development of endodontic theory and practice and an evidence-based approach that permits an intelligent evaluation of current and future technologies and materials.

參考資料

- Principle of Endodontics Pathway of the pulp

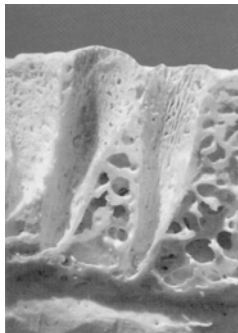
Summary

- Rationale of Endodontics
Anatomy and Embryology of the Pulp
Pretreatment and Rubber Dam
- Diseases of the Pulp
- Endodontic diagnosis and emergency management
Endodontic Radiography
- Endodontic Instruments and materials
- The Art and Science of Cleaning and Shaping
- The device and application of the Ni-Ti instrument in the endodontic treatment
- The Art and Science of Obturation—
 - Vertical Compaction of Warm GP Technique
 - Lateral Compaction Technique

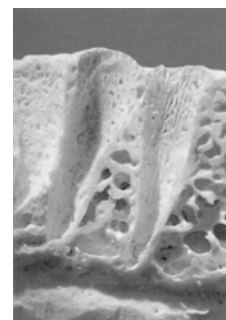
Summary

- Surgical Endodontics
- Apexogenesis and Apexification
- Endodontic Traumatology
- Diagnosis and Management of Combined Perio-endo Problem
Treatment planning /Endodontic Mishap /retreatment
- Apex Locator
Tooth Bleaching
- Laser endodontics
digital radiography / CT in Endodontic treatment
- 醫療環境與心理層面
Treatment planning /Endodontic Mishap /retreatment

PERIO-ENDO Murder hood



PERIO-ENDO Target Tissue



Marginal

Periodontitis

Apical

In Endodontics, we are really talking about

the health of the attachment apparatus.

Herbert Schilder, D.D.S.

Attachment Apparatus

- **Cementum**
- **Bone**
- **Periodontal Fibers**

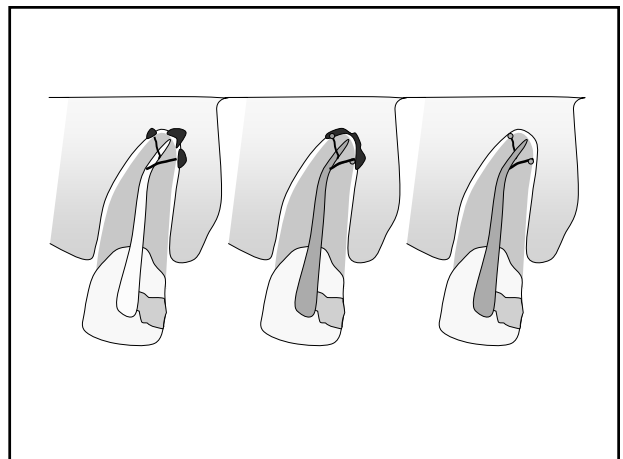
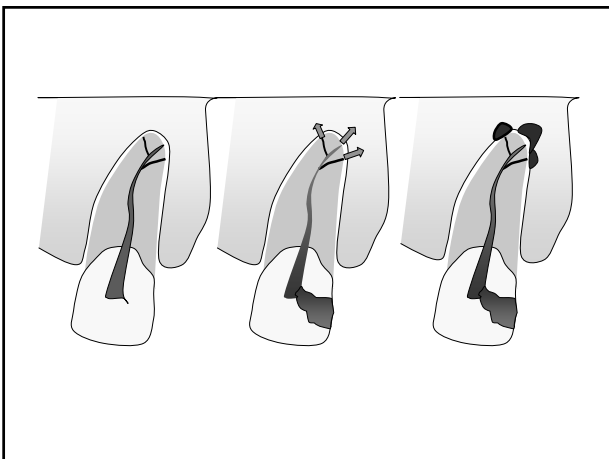
Attachment Apparatus Diseases

Three different vectors

- **Crevicular / Sulcular vector**
- **Endodontic vector**
- **Occlusal vector**

Predictable Successful Endodontic Treatment

Dr. Herbert Schilder 1962



“Any tooth
can be treated successfully endodontically
if it is periodontally sound
(or can be made so) and if its foramen or
foramina can be sealed, with or without
a surgical approach.”

Herbert Schilder, D.D.S.

**If the tooth is extracted, the
healing is equivalent to that which
occurs after endodontics**

**The challenge is
to
eliminate the root canal system
without taking out the tooth**

Perio-Endo Interrelationship
-6 “Cs”-

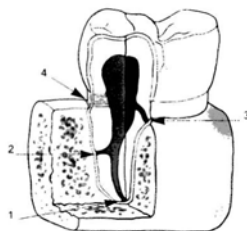
- Communicated pathways
- Common pathology
- Confused etiology
- Complicated diagnosis
- Careful classification
- Confined treatment sequence

Perio-Endo Interrelationship
-1ST “C”-

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Communicated Pathways

- 1. Apical foramina
- 2. Lateral accessory canals
- 3. Furcation accessory canals
- 4. Dentinal tubules

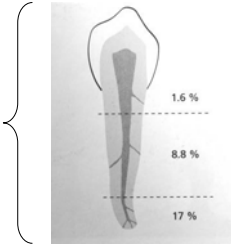


Other communications

- Lingual grooves
- Root/tooth fracture
- Cemental agenesis / hyperplasia
- Root anomalies
- Intermediate bifurcation ridges
- Fibrinous communications
- Trauma induced root resorption

Communicated Pathways

- Apical foramina
- Accessory (lateral) canals (De Deus '75)
- Dentinal tubules



Callahan (1914) --

small foramina and dentinal tubules offer small hiding places for bacteria

Hass (1925) --

used vulcanized rubber in root canals to fill accessory canals

Johnson (1931) --

sealed the smallest accessory canals is necessary as to fill the larger main canals

Three-dimensional Obturation

????

- Cold Lateral Condensation
- Warm GP Technique
 - Vertical Compaction Technique
 - Continuous Wave Technique
 - ThermoFil Technique

8 ways

to predict the location of accessory canal

- Widened PDL
- Tangent-radius relationship
- Disappearance of main canal
- File is not in the center of root
- Inner curvature
- Bulbos root tip
- Symmetry (very smaller anatomy)
- Expect the unexpected

Root Canal Anatomy

- Root canal systems
- Mandibular incisors ----- 2 canals : 40%
- Mandibular 1st premolars – 2 canals : 31%
- Mandibular 2st premolars – 2 canals : 11%
 - 3canals : 3%
- Mandibular 1st molar -----4 canals :
- Mandibular 2nd molar -----C shaped canal systems : 13%
- Maxillary 1st premolars ----- 2 canals : 84%
- Maxillary 2nd premolars ---- 2 canals : 58%
- Maxillary 1st molar ----- 4 canals : 85%

Communicated Pathways

Incidence of Furcation Canals:

Investigators	Incidence
Rubach & Mitchaell (1965)	45%
Lowman et al (1973)	59% maxillary molars 55% mandibular molars
Burch & Hulen (1974)	76%
Vertucci & Williams (1975)	46%
Kirkham (1975)	23%
Gutmann (1978)	28.4% maxillary molars 27.4% mandibular molars
Luglie PF, Sergente C. (2001)	50.94 %