牙髓病學 Endodontics

The Art and Science of Cleaning and Shaping

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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 Endodotnics
  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

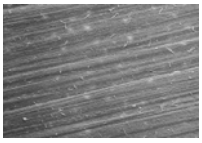
Cleaning:

The removal of the entire organic substrate from the root canal system

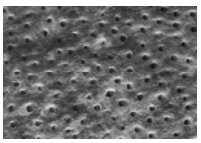
Shaping:

The development of a logical cavity form that any dentist can fill

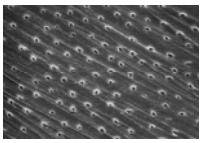
Shaping facilitates cleaning



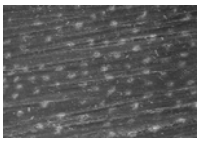
Smear layer



Removal smear layer by phosphoric acid

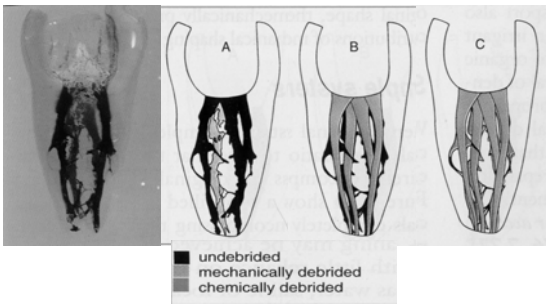


Removal smear layer by EDTA



Partial removal smear layer by 3% H_2O_2

Cleaning and Shaping

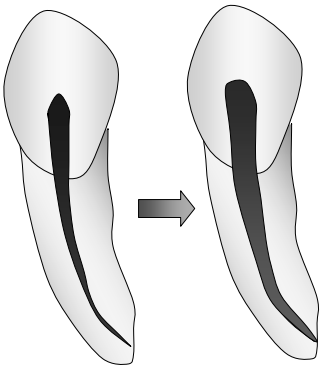


Schilder's

Five Mechanical Objectives

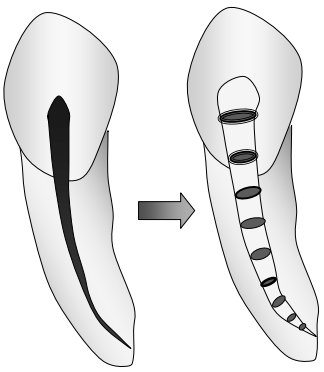
1.

The root canal preparation should develop a **continuously tapering funnel** from the coronal access cavity to the root apex



2.

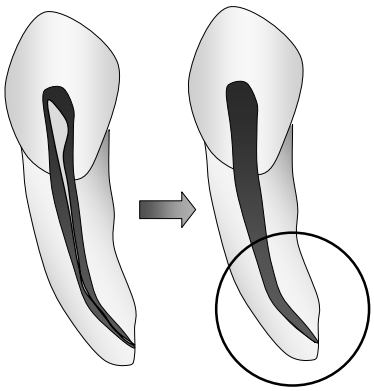
The cross sectional diameter of the preparation should be **narrower** at every point **apically** and **wider** at each point as the **access cavity** is approached

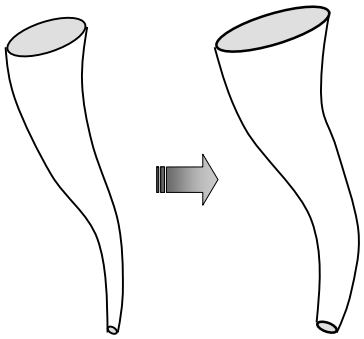


3.

The root canal preparation should occupy as many planes as are presented by the root canal system
; that is,
multiple planes

The concept of **“flow”**





4.*

The apical foramen should remain in its original spatial relationship both to the bone and to the root surface

DO NOT TRANSPORT THE FORAMEN

Type of Transportation

External Transportation

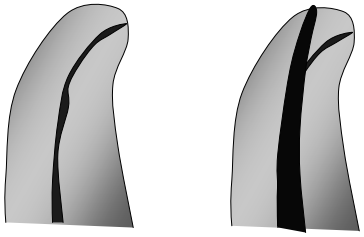
- Perforation
- Tear or Rip

Internal Transportation

- Short
- False Path

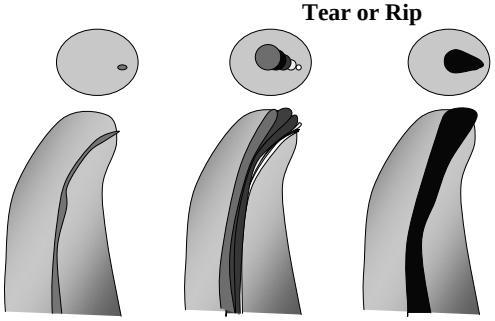
External Transportation

Perforation



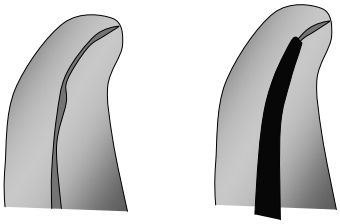
External Transportation

Tear or Rip



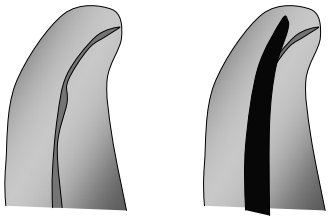
Internal Transportation

Short



Internal Transportation

False Path

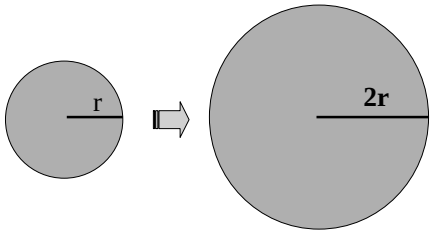


5.

The apical opening should be kept **as small as practical** in all cases

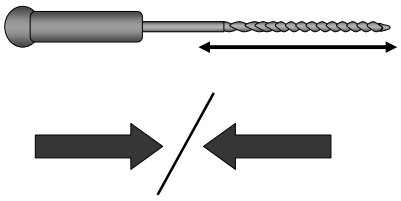
Area of Circle = πr^2

Circle = $2\pi r$

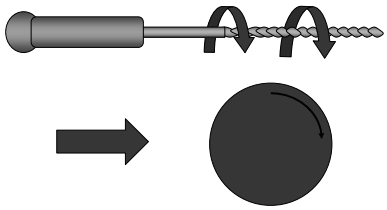


Motion
of
Cleaning and Shaping

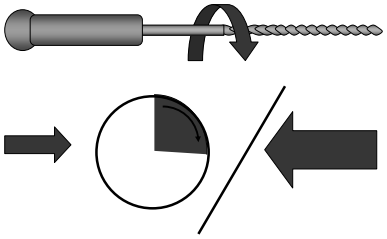
Filing



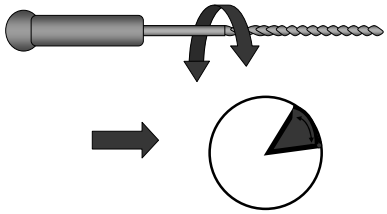
Reaming



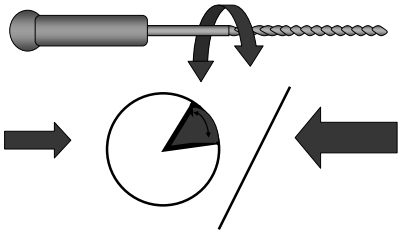
Turn-and-Pull



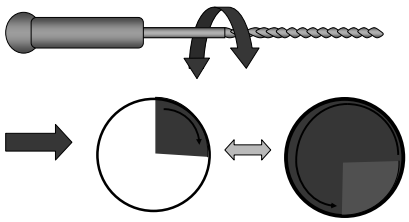
Watch-winding



Watch-winding and Pull



Balanced Force



Envelope of Motion