Anatomy of Primary Teeth

Lecture Overview
- Primary Dentition
- General Morphological considerations
- Implications of Primary tooth morphology

Primary Dentition
- 20 primary teeth as compared to 32 permanent teeth
- No premolars in the primary dentition
- The primary molars are replaced by the premolars
- The permanent molars erupt distal to the primary second molars
General Morphologic considerations

- Crown
- Pulp
- Root

Crown of Primary Teeth

- Shorter
- Narrower occlusal table
- Constricted in the cervical portion
- Thinner enamel and dentin layers
- Enamel rods in the cervical area directed occlusally
- Broad and flat contacts
- Color is usually lighter

Crowns of Primary Teeth

- Prominent mesio-buccal cervical bulge seen in primary molars
- Incisors have no developmental grooves or mammelons
### Primary Crown Anatomy

- **Mandibular Incisors**: central is symmetrically flat when viewed from buccal, lateral has a more rounded DI angle.
- **Maxillary Incisors**: central is only tooth that has a greater width than height.
- **Maxillary 1st Molar**: unique look, 3 cusps.
- **Mandibular 1st Molar**: 4 cusps, transverse ridge dividing occlusal surface.

### Primary Crown Anatomy

- **Canines**: maxillary is long and sharp, mandibular has similar shape but smaller.
- **Maxillary 2nd Molar**: resembles permanent maxillary first molar but smaller.
- **Mandibular 2nd Molar**: resembles permanent mandibular first molar but smaller.

### Pulps of Primary Teeth

- Relatively larger.
- Pulp horns are closer to the outer surface.
- Great variation in size and location.
- Mesial pulp horn is higher.
- Pulp chamber shallow.
- Form of the pulp follows the external anatomy.
- Usually a pulp horn under each cusp.
Pulpal Anatomy

Roots of Primary Teeth

- Roots of anterior teeth are narrower mesio-distally
- Posterior teeth have longer and more slender roots in relation to crown size
- Molar roots flare more as they approach the apex
- Apical foramina may be larger and accessory canals often larger and more numerous

Implications of Primary tooth morphology

- The progress of caries is much faster in the primary dentition, so incipient lesions should be restored sooner than later!
  - Thinner enamel and dentin
  - Mesial pulp horn higher
Procedures in Primary Teeth

- **Restorative Dentistry**
  - Enamel is thinner, therefore modifications are necessary in the cavity prep
  - Broad contacts need to be restored
  - Beware of the mesio-buccal pulp horn
  - May need to do SSC if both proximal surfaces involved
  - Preserve the buccal cervical ridge to obtain mechanical retention for SSC

- **Surgical Procedures**
  - Conical anterior roots facilitate easy removal
  - Flared roots of the molars - use caution as premolar buds are located between the roots

- **Pulp Therapy**
  - Pulpotomy beware of perforations
  - Pulpectomy
    - Difficult on molars due to tortuous and irregular pulp canals
    - Beware of tooth buds

Summary

- Primary teeth have
  - Thinner enamel and dentin layers
  - Pulp horns closer to the outer surface
  - Mesial pulp horn much higher
  - Relatively larger pulps
  - Enamel rods direct slightly occlusally in the cervical area
  - Cervical area is constricted significantly
  - Roots flare as they approach the apex
  - More tortuous and irregular pulp canals