Oral Histology Lect. 18 ا.د. عذراء

Eruption of Teeth

Tooth eruption is the process by which developing teeth emerge through the soft tissue of the jaws and the overlying mucosa to enter the oral cavity, contact the teeth of the opposing arch, and function in mastication – **therefore it is a continuous process**

Pattern of tooth movement includes:

1. **preeruptive movement**
2. **eruptive movement**
3. **posteruptive movement**

1.Histologic -changes that occur during preeruptive movement shows

1.Bodily movement

2.Excentric growth

3. bony remodeling (presence of osteoclast)

2.Histology – changes that occur during erupting teeth includes

1. overlying tissue shows **Degeneration of connective tissue immediately overlying the erupting teeth**.

Gubernacular cord: The connective tissue overlying a successional tooth that connects with the lamina propria of the oral mucosa by means of a strand of fibrous connective tissue that contains remnants of dental lamina

Gubernacular canal: Holes noted in a dry skull noted lingual to primary teeth in jaws that represent openings of gubernacular cord as the successional teeth erupt, gubernacular canal widens enabling tooth to erupt .

2. **Surrounding tissues** shows **Periodontal ligament have contractile properties**

3. **Underlying tissues shows root formation and Bone trabeculae fill in the space** left behind as the tooth erupts.

3.Histologic feature for posteruptive movement shows

1.Condylar growth

2.Jaw bone growth

Post Eruptive Tooth Movement occur

1. Movements to accommodate the growing jaws. Mostly occurs between 14 and 18 years by formation of new bone at the alveolar crest and base of socket to keep pace with increasing height of jaws.

2. Movements to compensate for continued occlusal wear.Compensation primarily occurs by continuous deposition of cementum around the apex of the tooth. However, this deposition occurs only after tooth moves.

3.Movements to accommodate interproximal wear

Two mechanisms for eruption of teeth includes

1.Pushing mechanism that occurs by

- ☐ **Root growth**
- ☐ **Vascular pressure**
- ☐ **Bone growth**
- ☐ **Cellular proliferation**
- ☐ **Dental follicle**

2. Pulling mechanism that occurs by

- ☐ **Collagen maturation**
- ☐ **Fibroblasts**

Environmental factors affecting the final position of the tooth:

1.Muscular forces 2.Thumb-sucking

Factors affecting tooth eruption-local,systemic and congenital factors

1 Factors affecting tooth eruption-local,systemic and congenital factors

2 Local factors

Physical obstruction

Injuries to decidiuos teeth

3 Physical obstruction Supernumerary teeth

Tumors-odontogenic and non odontogenic

Mucosal barriers

Gingival fibromatosis

Enamel pearls

4 Injuries to deciduous teeth

Premature loss of primary teeth

Dilaceration

Ankylosis

Delayed root resorption

Impacted primary teeth

Arch length deficiency

Defects in size ,shape and color of teeth(regional odontodysplaisa,radiation damage)

Oral clefts

5 Systemic factors Hormonal influence (hyperthyroidism, adrenogenital syndrome

Cerebral palsy

Drugs

Anemia

Premature/low birth weight babies

Genetic influence

Idiopathic

6 Nutritional problems-rickets-delayed eruption

7 Hormonal influence

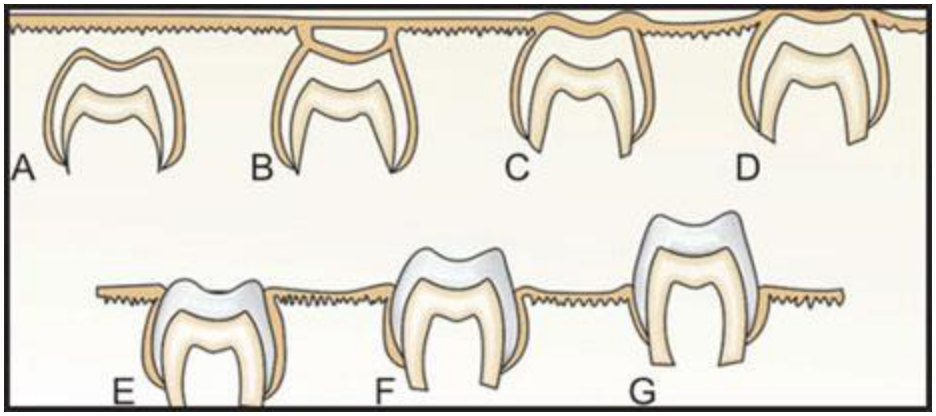
Hormonal influence (hyperthyroidism,adrenogenital syndrome-premature eruption of teeth is seen)

Delayed eruption-hypothyroidism,hypopituatrism)

8 Genetic influence

Delayed eruption-cleidocranial dysplasia,osteogenesis imperfecta

Failure of eruption-osteopetrosis.



Shedding