



Dental Anatomy

Lecture (14)

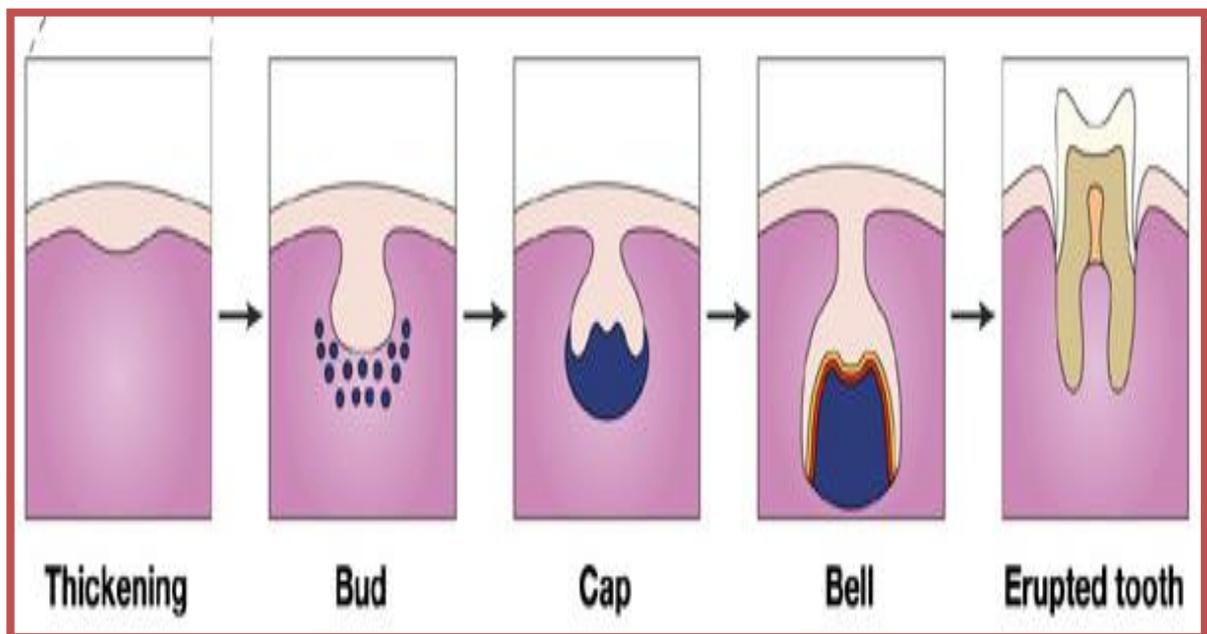
TOOTH DEVELOPMENT

The development of the crown and the root of the tooth take place within the bone in the jaw. The tooth passes through stages named according to their shapes:

1. Bud stage.

2. Cap stage.

3. Bell stage.

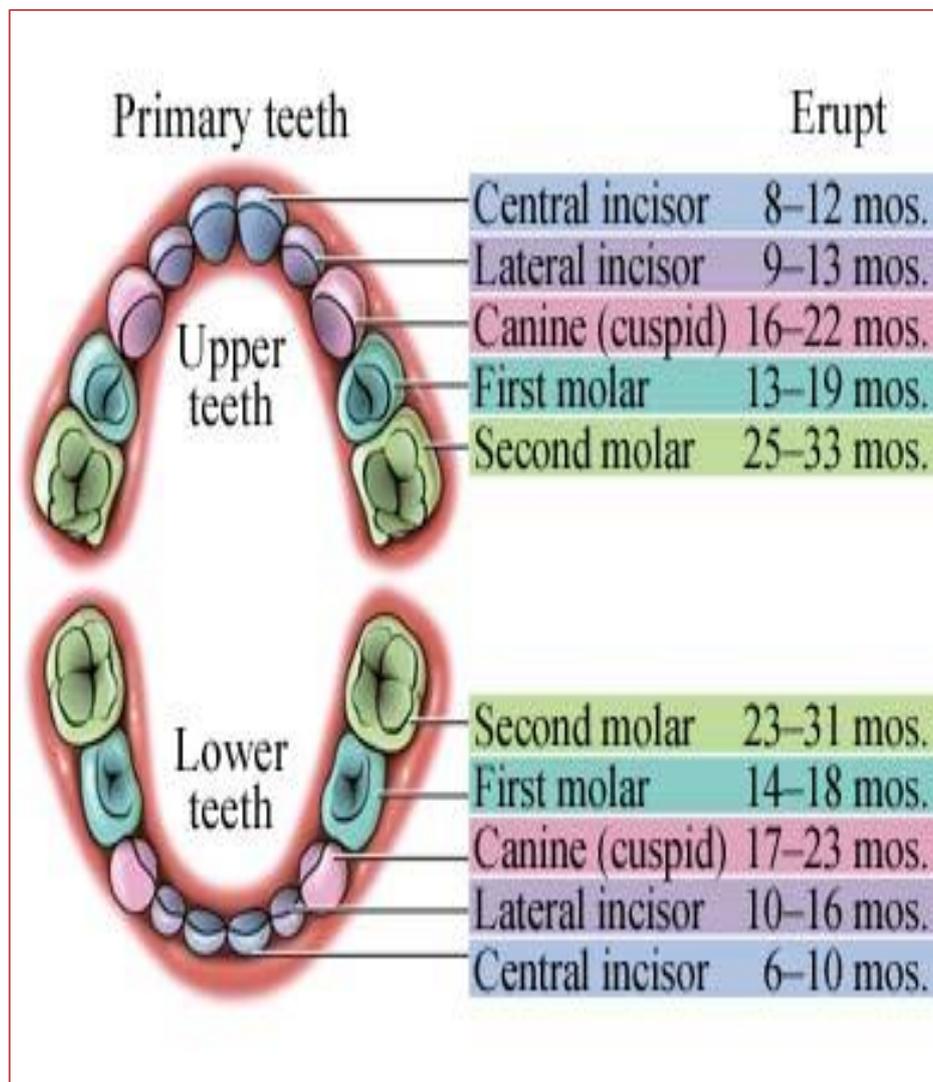


Dental development can be considered to have two components ;(1) the formation of crowns and roots and (2) the eruption of the teeth. After the crown of the tooth is formed, development of the root portion begins. The root

formation not finished when the tooth emerges, however the formation of the root continues after the tooth in use. After the root and crown are formed the tooth penetrates the mucous membrane and enters into the mouth by a process called *eruption*. The eruption of a tooth stops when it occluded with a tooth in the opposing jaw and contacts the adjacent teeth.

Sequential order of deciduous teeth according to their eruption times

The predominant sequence of eruption of the primary teeth is central incisor, lateral incisor, first molar, canine and second molar.



Deciduous teeth

The deciduous teeth are 20 in number. They start erupting at the age of 6.5 months (mandibular central incisor). Their eruption completed at 20-30 months of age (mandibular and maxillary second molars).

The importance of the deciduous teeth

1. Providing space for the permanent teeth and guiding them into the correct position.
2. Prevent malocclusion.
3. Allow proper mastication
4. Esthetics.
5. Phonetics.

The deciduous teeth roots are fully formed after eruption then after a while resorption to these roots start until exfoliation of the deciduous teeth occurs, followed by the eruption of the permanent successor.

Maxillary deciduous teeth

Central and lateral incisors

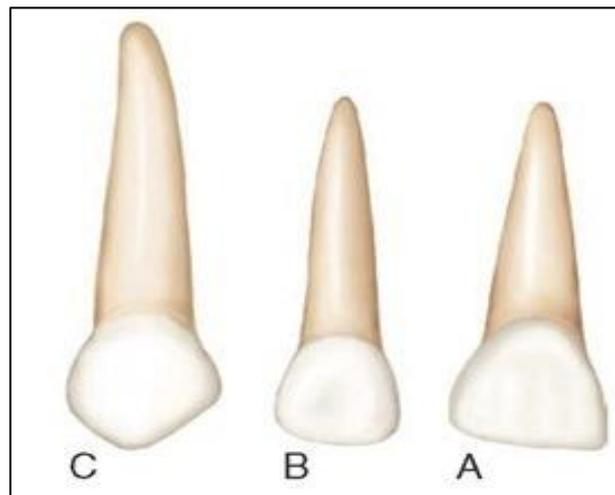
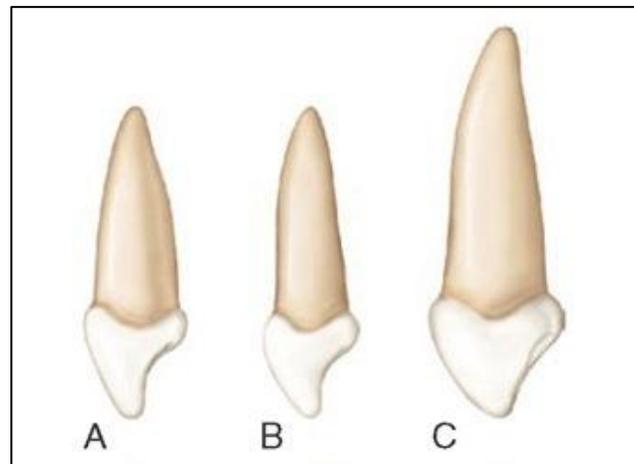
1. The mesiodistal width is more than the cervico-incisal length (in the maxillary central) while mesiodistal width is less than the cervico-incisal length (in the maxillary lateral) .
2. The root length is greater when compared with the crown length.
3. From the mesial aspect , the crown appears thicker because of the shorter crowns length.

Canine

1. From the labial aspect the crown is more constricted at the cervical, so the cusp and the slopes are seen more developed.
2. The mesial slope of the cusp is longer than the distal slope.
3. The mesial and distal contact areas are at the same level.

4.The root is long and is more than twice the crown length.

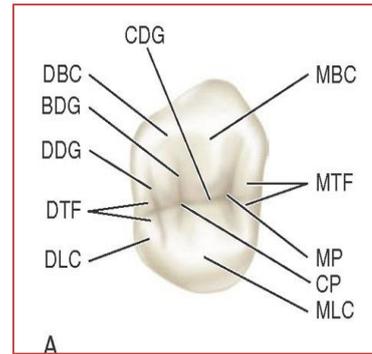
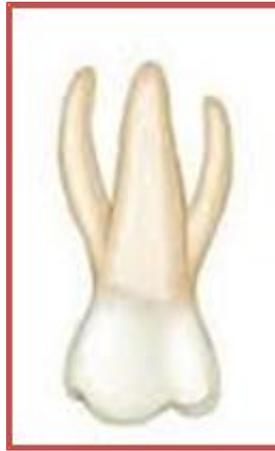
5.From the mesial aspect the crown appears thicker labiolingually because of the short crown length.



First molar

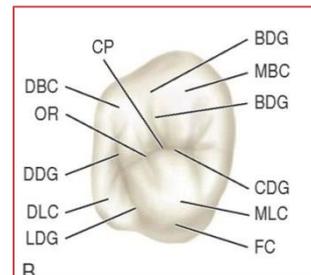
1.There are four cusps: mesiolingual (largest), mesiobuccal, distobuccal and distolingual (smallest).

2.There are three roots: lingual, mesiobuccal, and distobuccal.



Second molar

1. There are five cusps (four well developed and one supplemental) which are the mesiolingual (largest), mesiobuccal, distobuccal, distolingual and the fifth cusp (supplemental cusp).
2. There are three roots: lingual, mesiobuccal and distobuccal roots.



Mandibular deciduous teeth

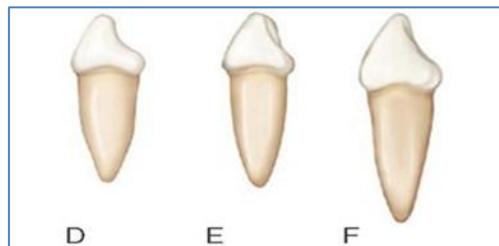
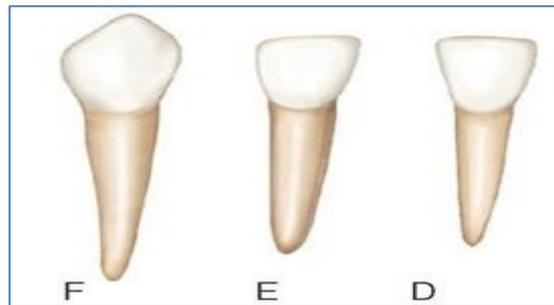
Central and lateral incisors

1. They are wider mesiodistally in relation to their length more than the permanent mandibular incisors.
2. The root length is greater when compared with the crown length.
3. The labiolingual width appears more due to the short crowns length.

Canine

1. The labiolingual dimension is much less than the maxillary deciduous canine.
2. The cervical ridge is less pronounced than the maxillary deciduous canine.

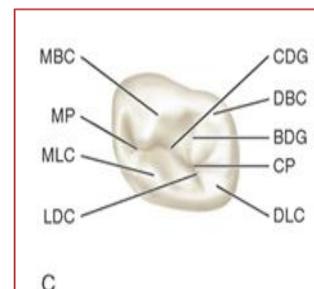
3.The distal slope of the cusp is larger than the mesial slope.



First molar

1.There are four cusps: mesiolingual (largest), mesiobuccal, distobuccal and distolingual (smallest).

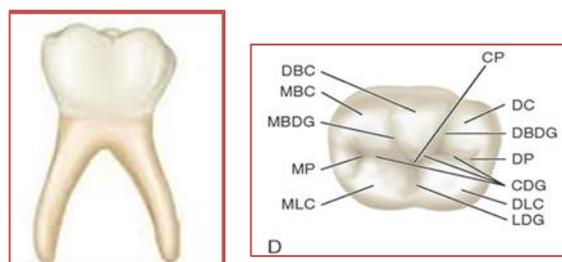
2.There are two roots: mesial and distal roots.



Second molar

1.There are five cusps: mesiolingual, mesiobuccal, distobuccal, distolingual and the distal cusp.

2.There are two roots: mesial and distal roots.



Principal differences between deciduous and permanent teeth

General differences

1. The deciduous teeth are 20 in number while the permanent teeth are 32 in number.
2. The deciduous teeth are smallest in all dimensions.
3. The deciduous teeth show less morphological variations.
4. The enamel of the deciduous teeth is whiter and more opaque so they are whiter than the permanent teeth.
5. The enamel of the deciduous teeth is thinner (0.5-1mm), while in the permanent teeth it is (1.5-2.5mm).

Crown differences

1. The crowns of the deciduous are more constricted at the cervix.
2. The cervical ridges in all deciduous teeth are more prominent.
3. The intercuspal distance of the deciduous teeth is more constricted buccolingually.
4. The crowns of the deciduous anterior teeth are wider mesiodistally as compared with the crowns width.

Root differences

1. Lack of root trunk in the deciduous molars.
2. The roots of the deciduous teeth are shorter, weaker and narrower.

3. The roots of the deciduous teeth are longer in proportion to the crown.

4. The roots of the deciduous molars are wider than the crown to allow more room for the development of the successor permanent teeth.

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