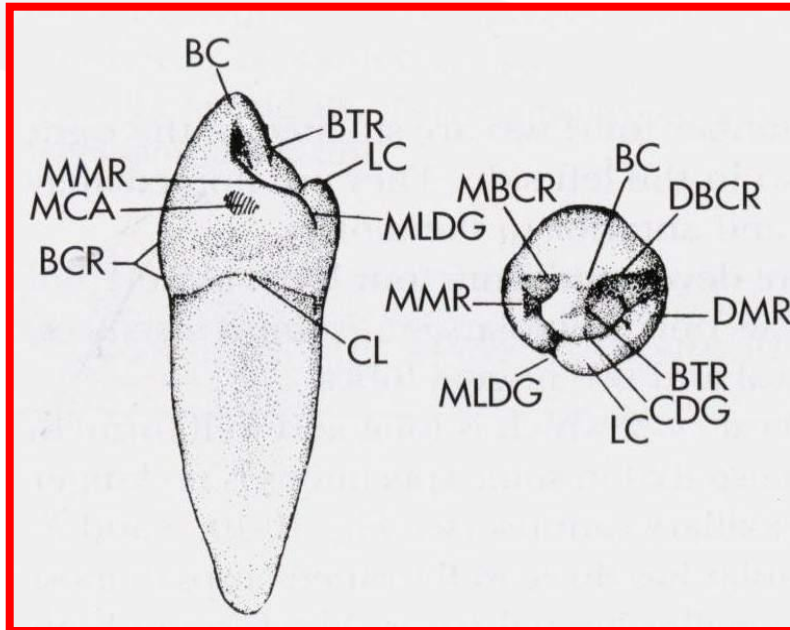




Mandibular right first premolar

**It is the fourth tooth from the median line. It has two cusps, buccal and lingual. The buccal cusp is long and well formed, with a small, non functioning lingual cusp that in some specimens is no longer than the cingulum found on some maxillary canine . The first premolar is always the smaller of the two mandibular premolars . Whereas the opposite is true , in many cases , of the maxillary premolars .**



**BC:** Buccal cusp. **BTR :**Buccal triangular ridge. **LC:** Lingual cusp. **MLDG:** Mesiolingual developmental groove. **CL:** cervical line. **BCR:** Buccal cervical ridge. **MCA:** Mesial contact area **MBCR:** Mesiobuccal cusp ridge **DBCR:** Distobuccal cusp ridge. **CDG:** Central developmental groove **DMR:** Distal marginal ridge.

# Buccal aspect

- The middle buccal lobe is well-developed resulting in a large pointed buccal cusp. The continuous ridge from the cervical margin to the cusp tip is called **buccal ridge**.



## Buccal aspect

- The root is 3 to 4 mm shorter than the mandibular canine



# Buccal aspect

- The **mesial cusp ridge** is shorter than the **distal cusp ridge**.



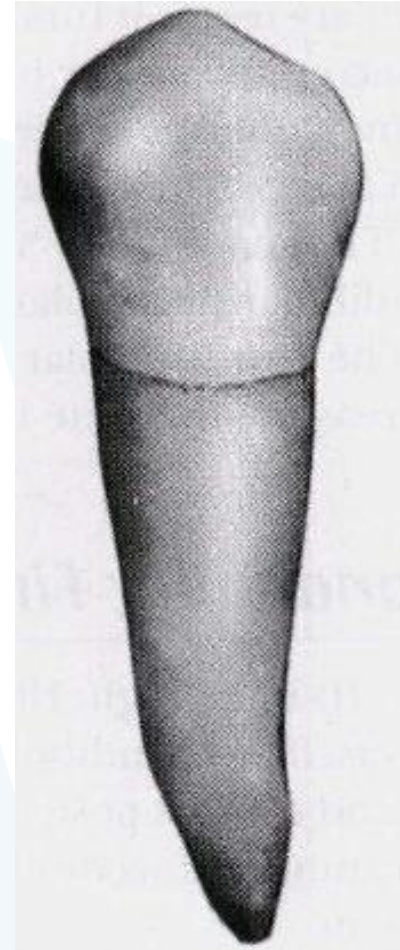
# Buccal aspect

- From the buccal aspect, the crown is trapezoidal. The crown exhibits little curvature at the cervical line buccally because of the slight curvature of the cervical line mesial and distal surface of the tooth.



# Buccal aspect

- The tip of the buccal cusp is pointed and , in most cases , is located a little mesial to the center of the crown buccally .





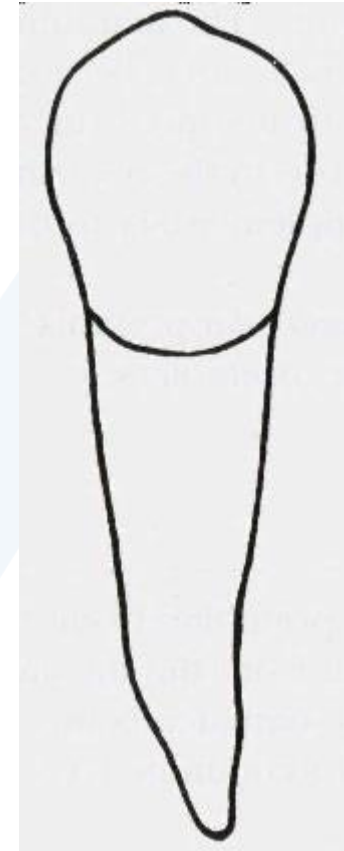
# Buccal aspect

- Buccal surface is a convex surface with a prominent height of contour in the gingival 1/3 .



# Buccal aspect

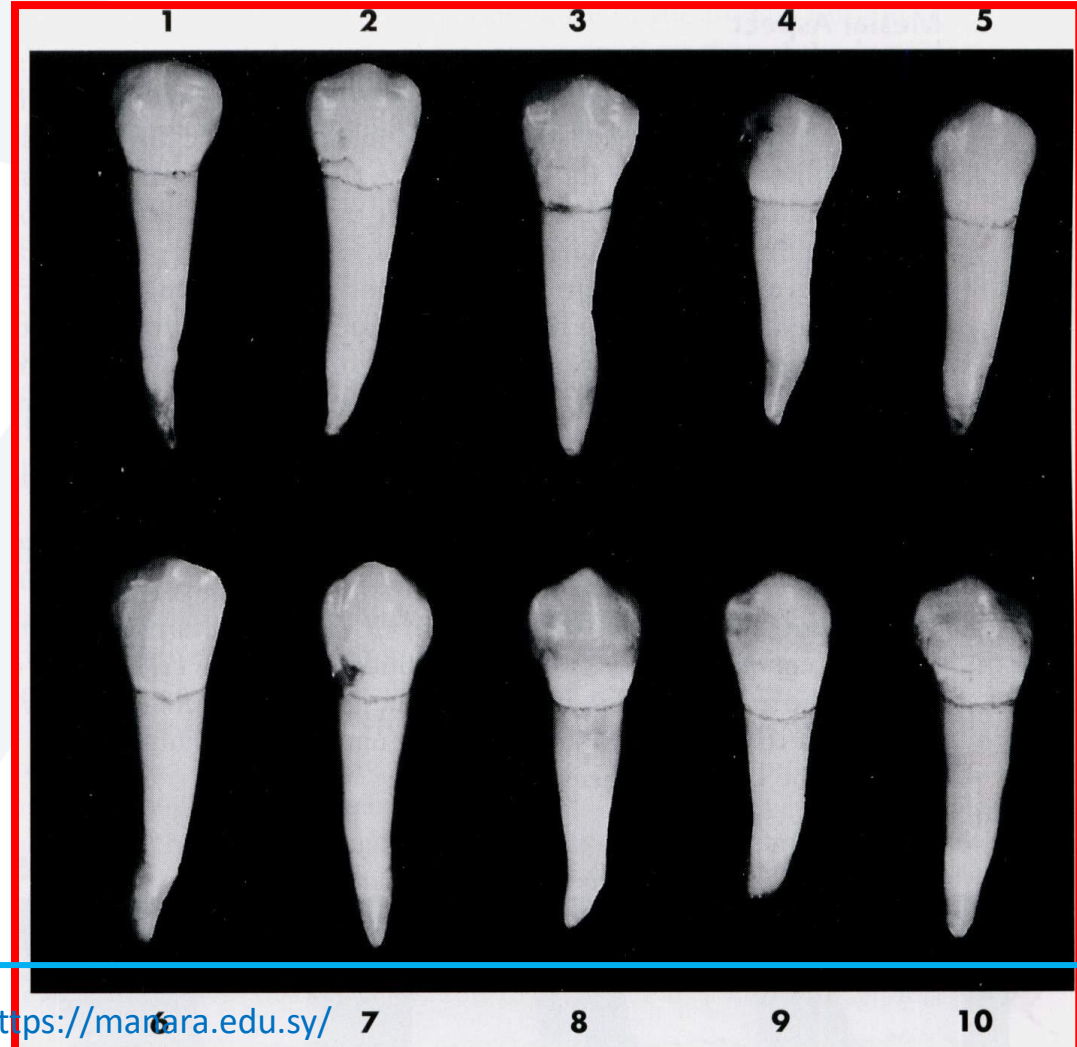
- The cervix of the mandibular 1pre molar crown is narrow M-d when compared with the crown width at the contact area ..



# Ten Typical specimens



Labial aspect



# Lingual aspect

- The major portion of the crown is made up of the middle lingual lobe, this makes it resemble the canine



# Lingual aspect

- The crown tapers to the lingual ,since the lingual size M-D is less than that buccally.
- The lingual cusp is always small.



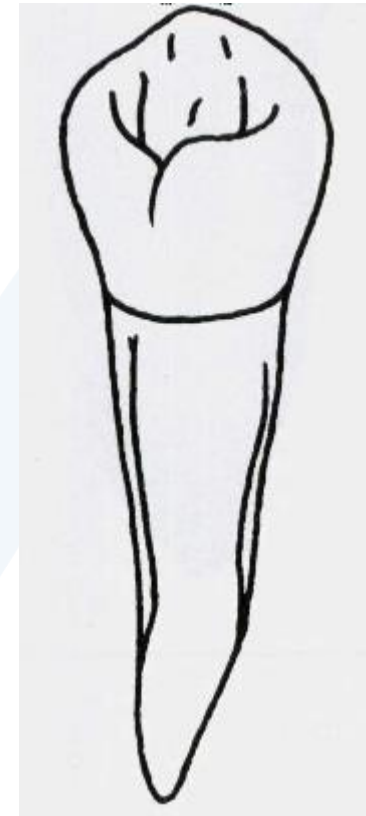
# Lingual aspect

- A characteristic of the lingual surface is the **mesiolingual developmental groove**. This groove acts as a line of demarcation between the mesiobuccal lobe and the lingual lobe and extends into the mesial fossa of the occlusal surface.

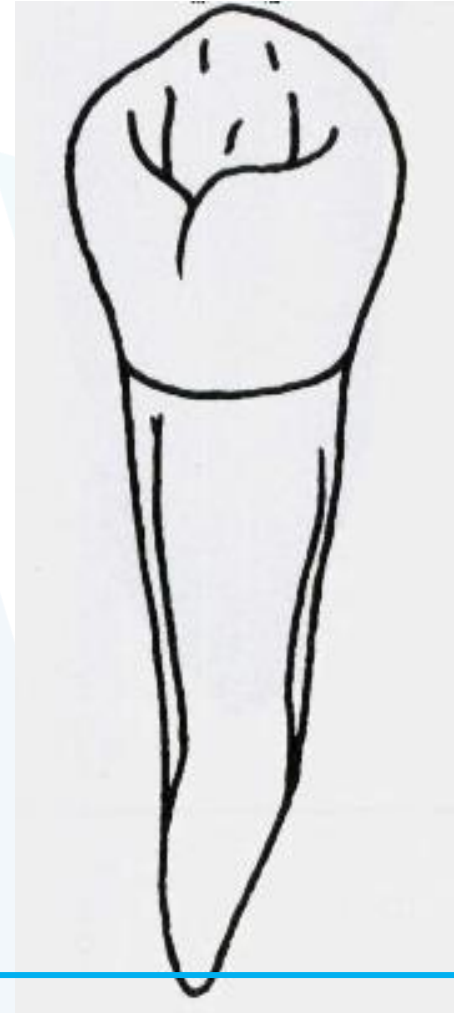


# Lingual aspect

- Mesiolingual developmental groove is evident at the mesiolingual line angle.



# Lingual aspect



The crown and root taper toward the lingual so that most of the mesial and distal surfaces of both may be seen from the lingual aspect .

The root of this tooth tapers evenly from the cervix to a pointed apex .



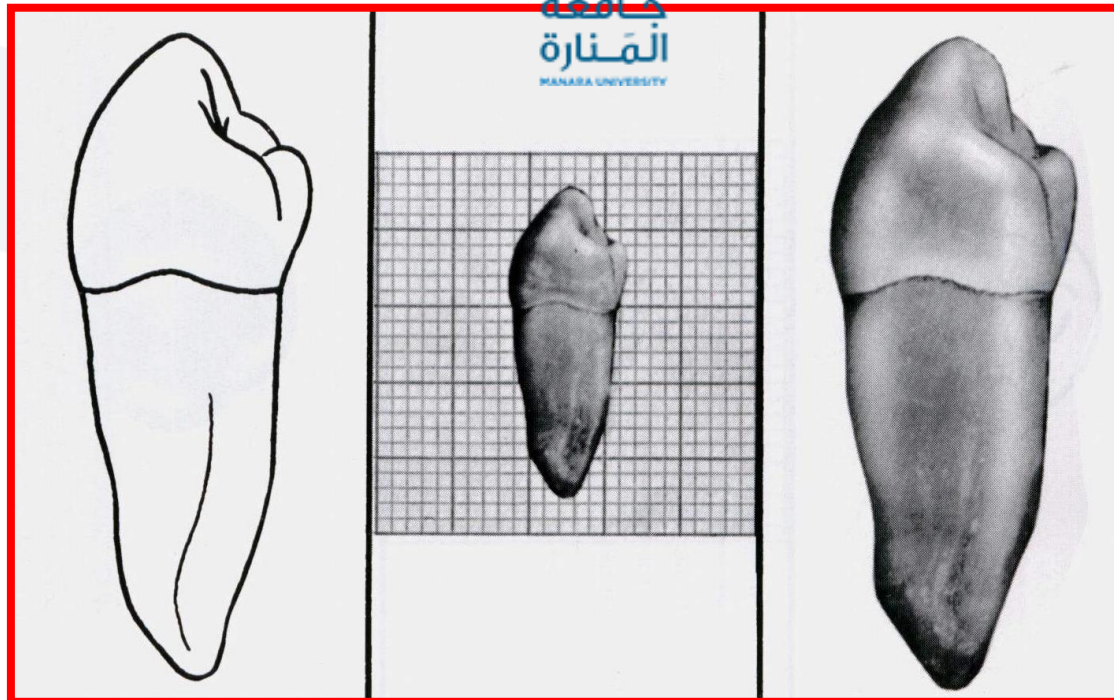
# Lingual aspect

- The entire occlusal surface is usually seen well from this view since the lingual cusp is very short.
- The **mesial marginal ridge** is much shorter buccolingually than the **distal marginal ridge** because of the presence of the mesiolingual developmental groove on the mesial .
- Two distinct pits are present on the occlusal surface .





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**Mesial Aspect:** The buccal outline of the crown is prominently curved from the cervical line to the tip of the buccal cusp, which is nearly centered over the root.

The mesial surface of the root is smooth and flat from the buccal margin to the center. From this point, it too converges sharply to the root center lingually, often displaying a deep developmental groove in this area

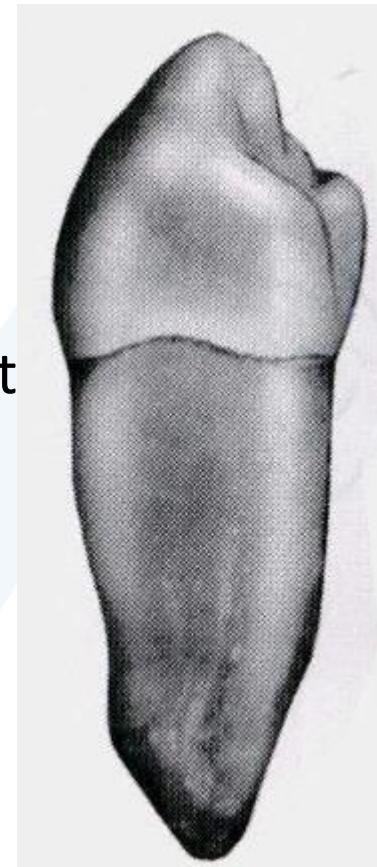
# Mesial aspect

- The cervical line is rather regular ,curving occlusally . proximal contact area is centered buccolingually on the mesial surface. It is located in the middle 1/3 and this is the only premolar in which it is so positioned .
- Lingual cusp is much shorter than the buccal cusp .



# Mesial aspect

- Buccal cusp is centered over the long axis of tooth.



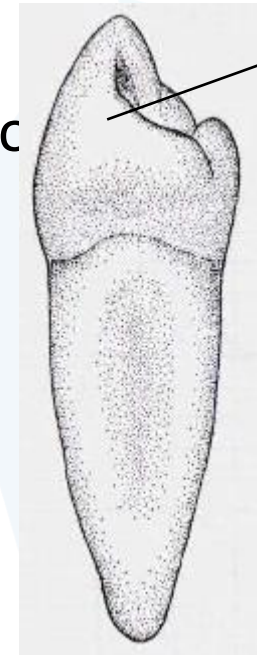
# Mesial aspect

- Entire buccal surface is convex, and the buccal cusp tip is positioned over the long axis of the tooth .
- The lingual cusp is thin and short .



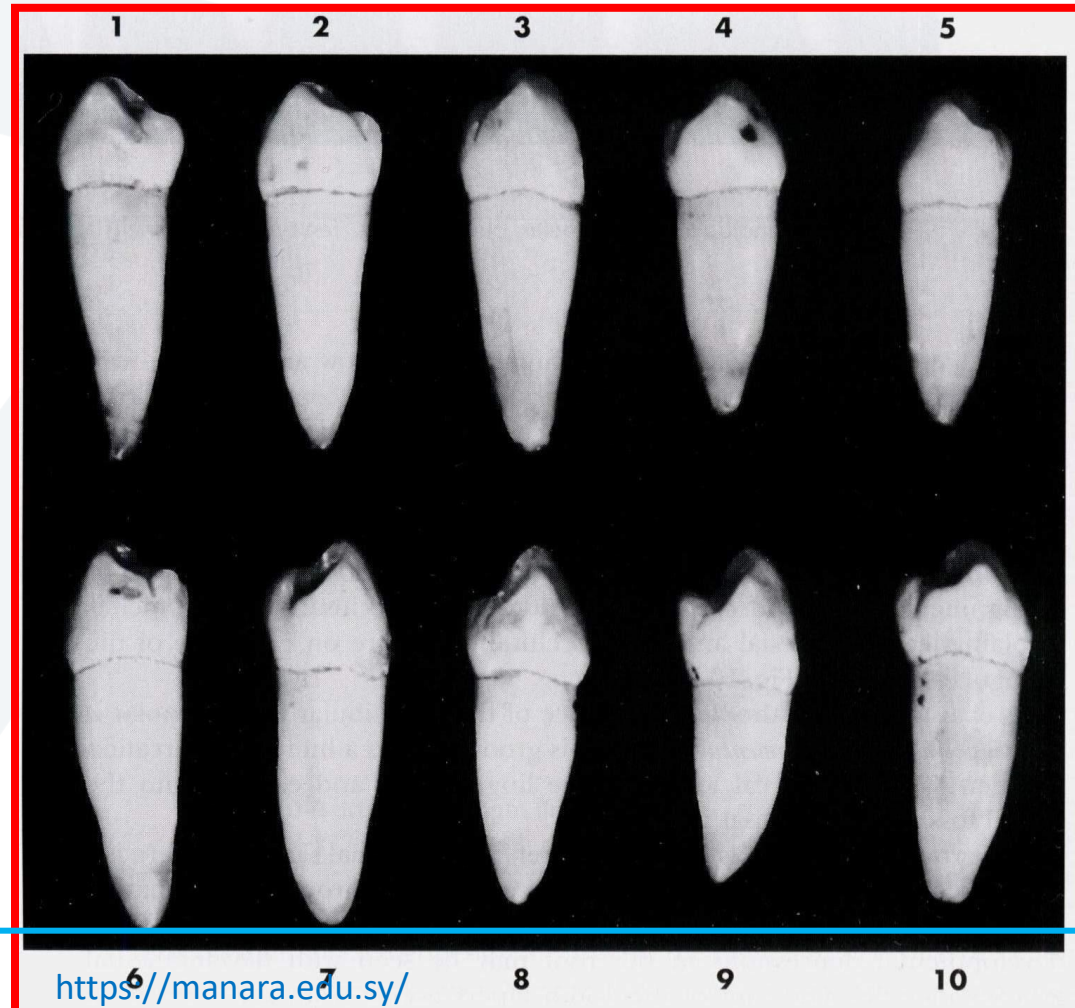
# Mesial aspect

- Mesial marginal ridge slopes rather dramatically to the gingival as it proceeds lingually .



# Ten Typical specimens

Mesial aspect





## Distal aspect

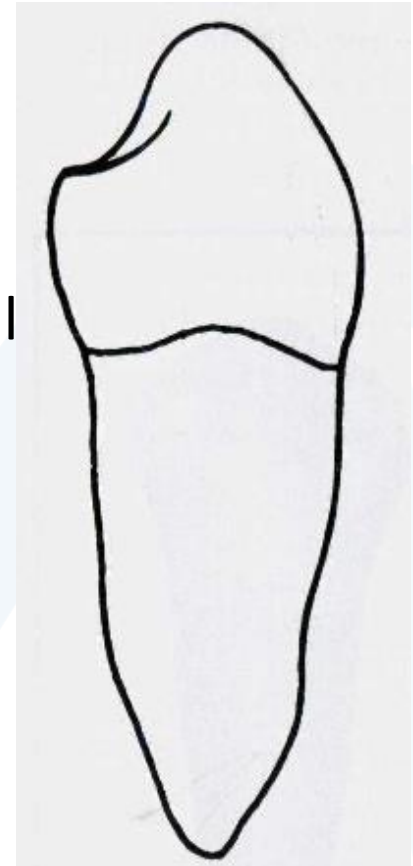
- There is no distolingual marginal groove.
- The well developed transverse ridge on the occlusal surface is usually well seen in this view.





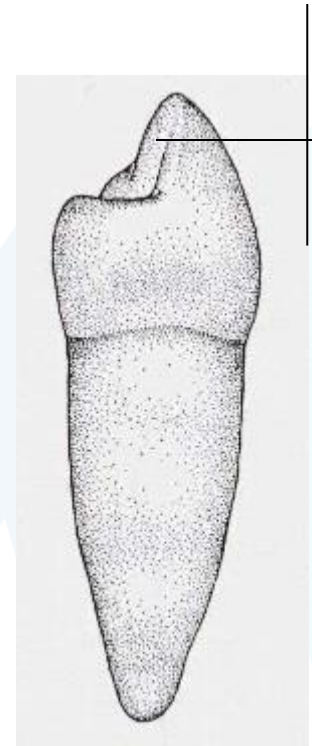
## Distal aspect

- The distal marginal ridge is higher above the cervix ,and it does not have the extreme lingual slope as the mesial marginal ridge.



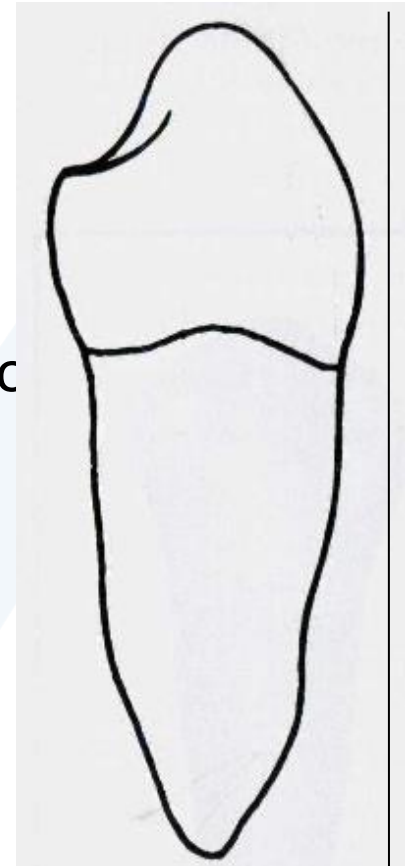
# Distal aspect

- Distal marginal ridge runs at approximately 90 degrees to the long axis of the tooth



# Distal aspect

- Buccal cusp tip is centered over the long axis of the tooth in most specimens.



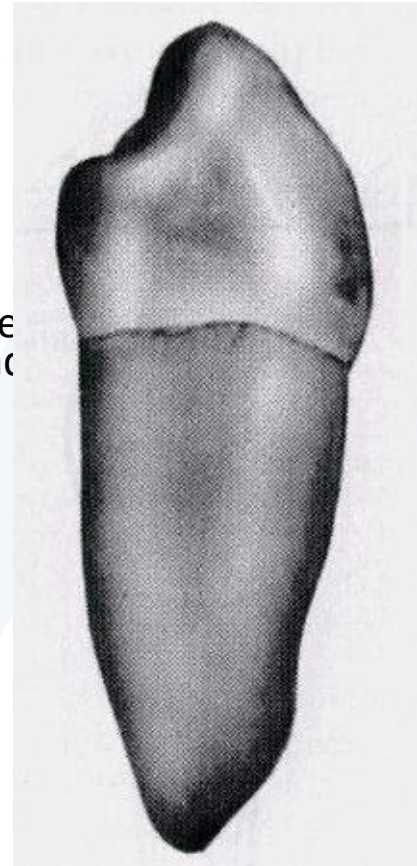
## Distal aspect

- Buccal crest of curvature is in the gingival 1/3, and the entire buccal surface is usually convex from the crest of curvature to the buccal cusp tip.
- Lingual height of contour is in the middle 1/3, near the tip of the small/short lingual cusp .



# Distal aspect

- The major portion of this aspect of the crown is smoothly convex. The curvature of cervical line distally may be the same as found mesially, although less curvature distally is the general.



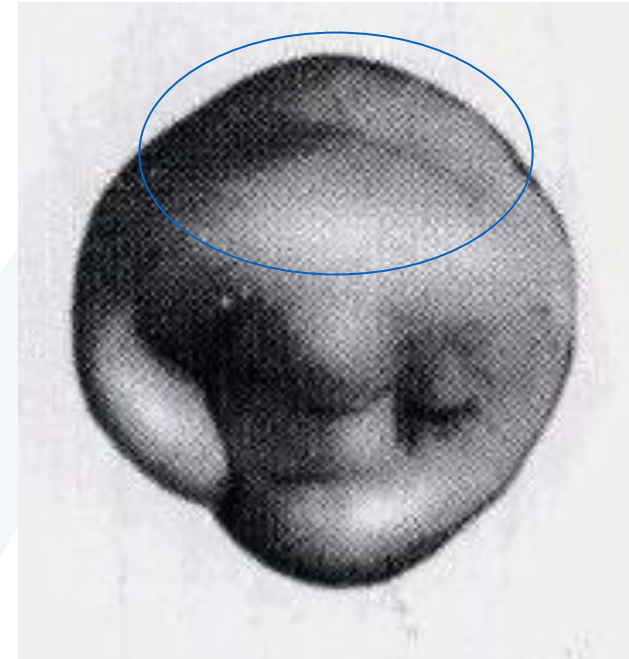
# Distal aspect

- The surface of the root exhibits more convex than was mesially.
- A shallow **developmental depression** is centered on the root.



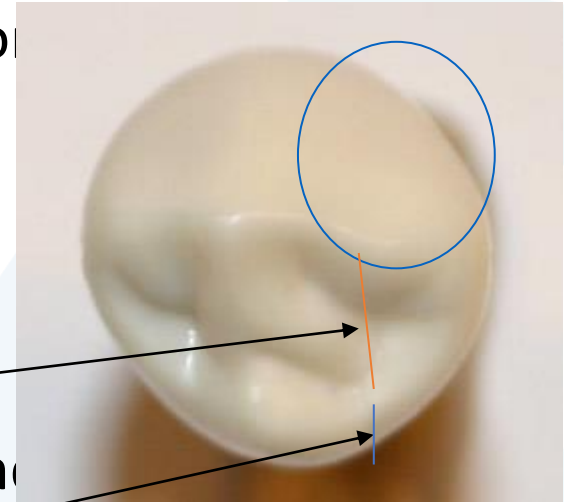
# Occlusal aspect

- Central groove is often absent due to the prominence of the transverse ridge in the center of the occlusal surface.
- Much of the **buccal surface** is visible in this view due to the lingual inclination of the buccal cusp.



# Occlusal aspect

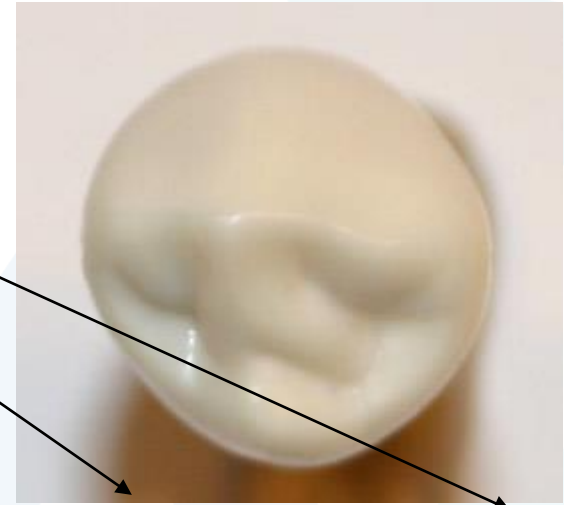
- The **middle buccal lobe** makes up the major bulk of the crown.
- The **buccal ridge** is prominent .
- There is a heavy **buccal triangular ridge** ,and small **lingual triangular ridge** .





# Occlusal aspect

- The marginal ridges are well developed .
- The lingual cusp is small.



# Occlusal aspect

- **Mesiolingual developmental groove** usually present and runs from the mesial pit diagonally on the occlusal surface crossing to the lingual surface at the mesiolingual line angle .



# Occlusal aspect



- Mesial and distal pits are well defined.
- the crown converges sharply to the lingual surface .



# Occlusal aspect

- **Mesial marginal ridge** is short buccolingually due to the presence of the mesiolingual developmental groove .
- **Distal marginal ridge** is prominent and possesses a full contour from distal surface around to the lingual cusp .



# Occlusal aspect

- Buccal and lingual triangular ridges are fused to form the prominent **transverse ridge** in the center of the tooth crown on the occlusal surface.



# Occlusal aspect

- **Triangular grooves** may be present toward the buccal arising from the mesial and distal pits .
- Little of the lingual surface may be seen due to the lingual inclination of the lingual cusp .



# Occlusal aspect

- Central groove, if present, is displaced to the lingual of center. Mesial and distal pits are displaced to the lingual of center .
- **Buccal cusp** tip lies over the center of the long axis of the tooth.



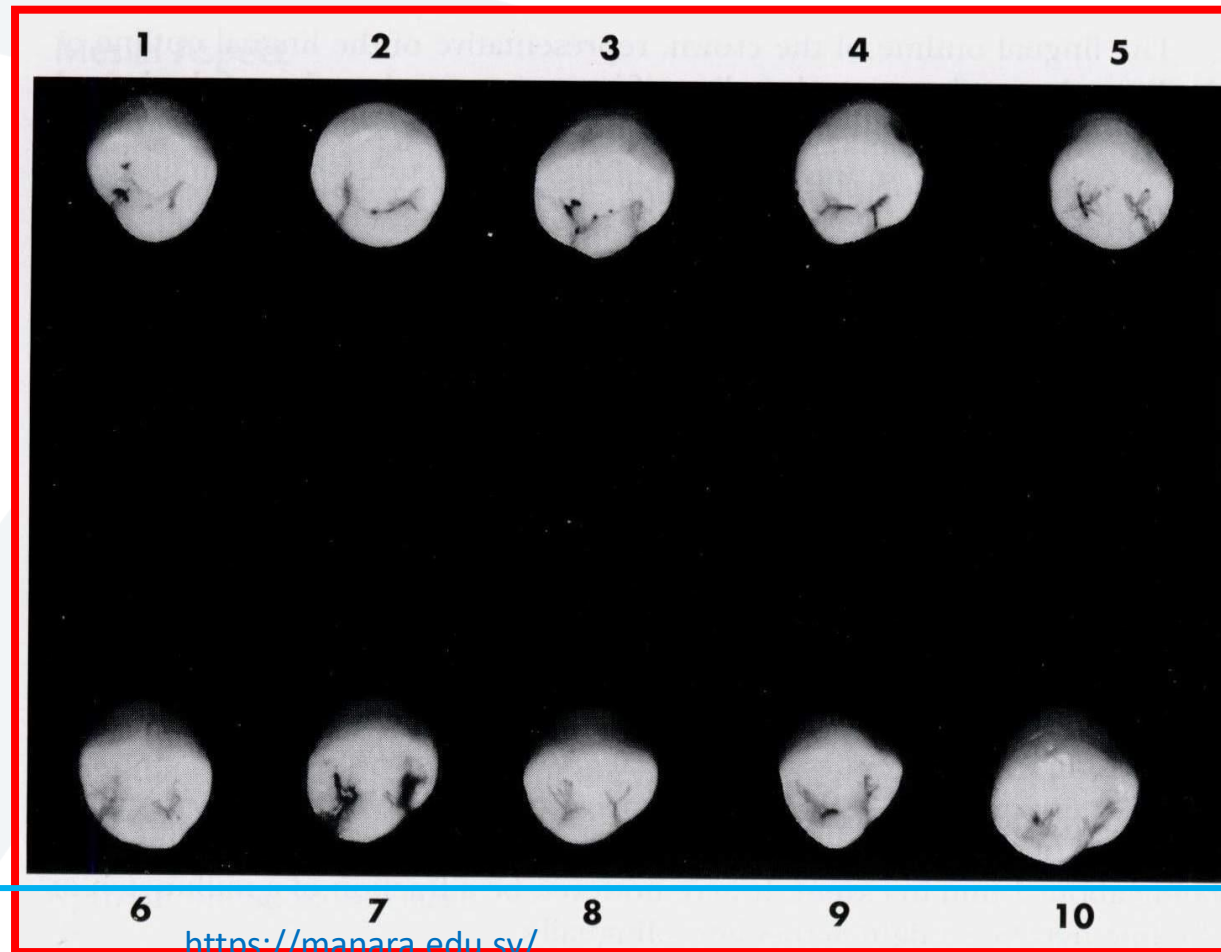
# Occlusal aspect

- Distal marginal ridge blends smoothly into the lingual cusp.





# Ten Typical specimens



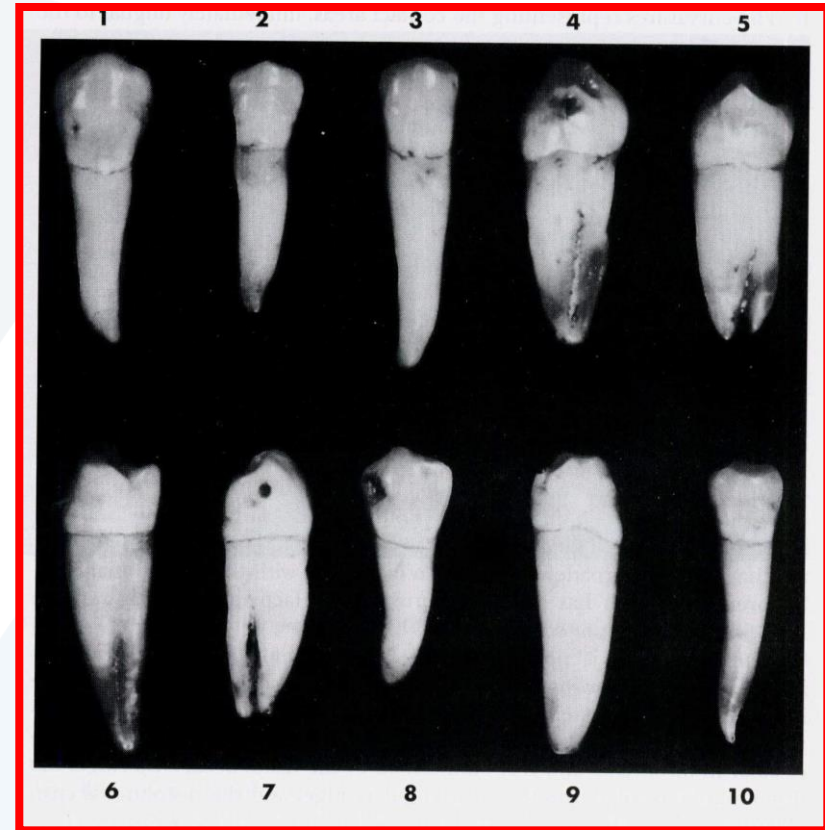
Occlusal aspect

# specimens with uncommon variations

1 - Crown oversized.

2 - Crown and root diminutive.

3 - mesial and distal sides of crown straight ,cervix wide mesiodistally, root extra long.



# specimens with uncommon variations

4 - Unusual formation of the lingual portion of crown; root with deep developmental groove mesially .

5 - Bifurcated root.

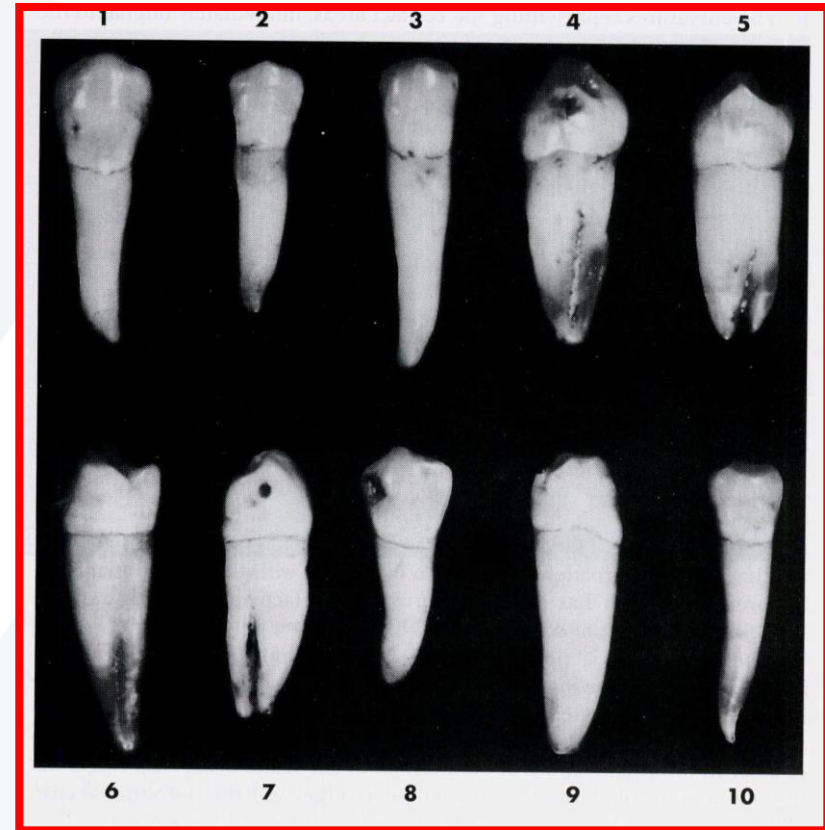


# specimens with uncommon variations

6 - lingual cusp long , little lingual curvature ,root extra long

7 - no lingual cusp, root bifurcated.

8 - dwarfed root.



# specimens with uncommon variations

9 - Crown poorly formed ;root unusually long.

10 - Very long curved root for crown so long.

