PERMANENT MAXILLARY SECOND & THIRD MOLARS

Oral Biology Dep.

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Maxillary second molar

Chronology:

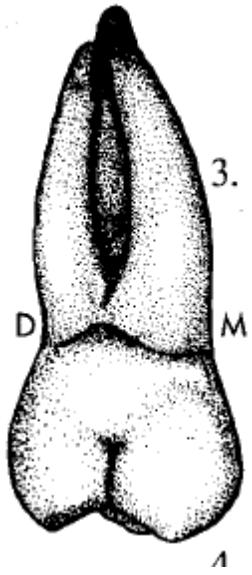
First evidence of calcification:	2.5 - 3 year.
Crown completed:	7 – 8 years.
Eruption:	12 - 13 years.
Root completed:	14 – 16 years.

The maxillary second molar supplements the first molar in function. It has roots that have the same length or slightly longer than those of the first molar. Its distobuccal cusp is not as well developed as that of the first molar and it has no tubercle of Carabelli. Its crown is slightly shorter cervico-occlusally but has the same buccolingual measurement as the first molar. From the occlusal view we can detect 2 types for the maxillary second molar as:

1. The same shape as maxillary first molar but with more rhomboidal shape.
2. Heart shaped, take the same shape of maxillary third molar. The distolingual cusp is poorly developed.

The morphological description will be as a comparison with the maxillary first molar.

Morphological Description



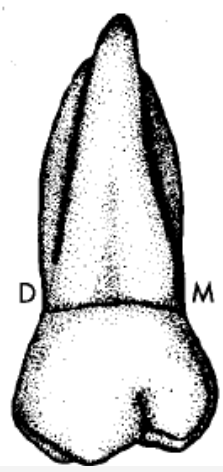
Buccal surface:

I. Crown:

The crown is smaller both cervico-occlusally and mesiodistally than the maxillary first molar. The distobuccal cusp is smaller allowing parts of the distal marginal ridge and distolingual cusp to be seen.

II. Roots:

The buccal roots are about the same length, they are more nearly parallel and more distally inclined. The apex of the mesiobuccal root is in line with the buccal groove instead of the tip of the mesiobuccal cusp as found in the first molar.



Lingual surface:

The distolingual cusp is smaller, the distobuccal cusp may be seen through the sulcus between the mesiolingual and distolingual cusps and no tubercle of Carabelli is found. The apex of the lingual root is in line with the tip of the distolingual cusp instead of the lingual groove as was found in the first molar.

Mesial surface:

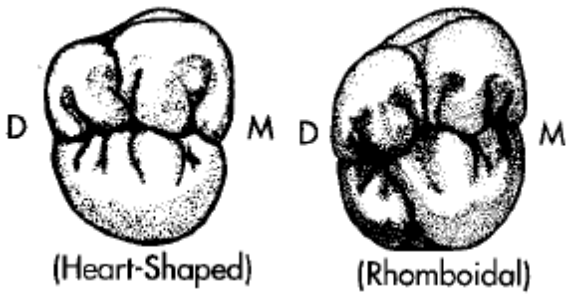
The buccolingual dimension is about the same and the root do not spread as far buccolingually as the first.

Distal surface:

Because the distobuccal cusp is smaller, more of the mesiobuccal cusp may be seen. The apex of the lingual root is in line with the distolingual cusp.

Occlusal surface:

The rhomboidal type of maxillary second molar is more frequent. However its acute angles are less acute and its obtuse angles are greater. The buccolingual diameter is equal but mesiodistal is slightly less. The mesiobuccal and mesiolingual cusps are large and well developed as those of the first molar. While the distobuccal and distolingual cusps are smaller and less developed. The crown shows more convergence distally than the first molar. More supplemental grooves are found on the occlusal surface of the second molar than are



usually found on the maxillary first molars.

Maxillary third molar

Chronology:

First evidence of calcification:	7 - 9 year.
Crown completed:	12 - 16 years.
Eruption:	17 - 21 years.
Root completed:	18 - 25 years.

All third maxillary molars show more variations in form than any of the other teeth in the mouth. Occasionally they appear as anomalies bearing little or now resemblance to the neighbouring teeth.

The maxillary third molar vary considerably in size, form and relative position to the other teeth. It is seldom as well developed as the second molar which it often resembles. Its crown is smaller, the roots are shorter with great tendency for fusion resulting in one tapered root. The predominating type when viewed from the occlusal aspect is the heart shaped type with a very small and probably absent distolingual cusp.

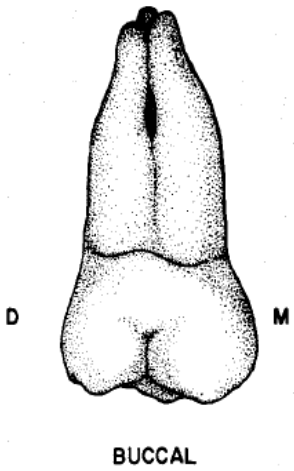
The morphological description will be as a comparison with the maxillary second molar.

Morphological Description

Buccal surface:

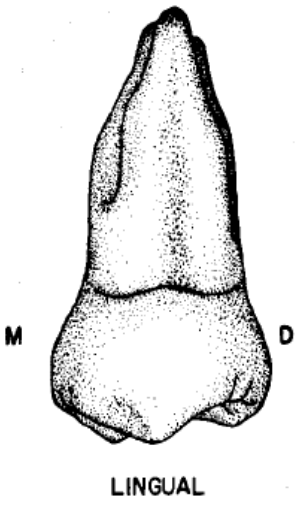
III. Crown:

The crown is smaller both cervico-occlusally and mesiodistally than the maxillary.



IV. Roots:

The roots are usually fused functioning as one large root, and they are shorter cervico-apically. The fused roots taper to the apex which shows distal inclination.



Lingual surface:

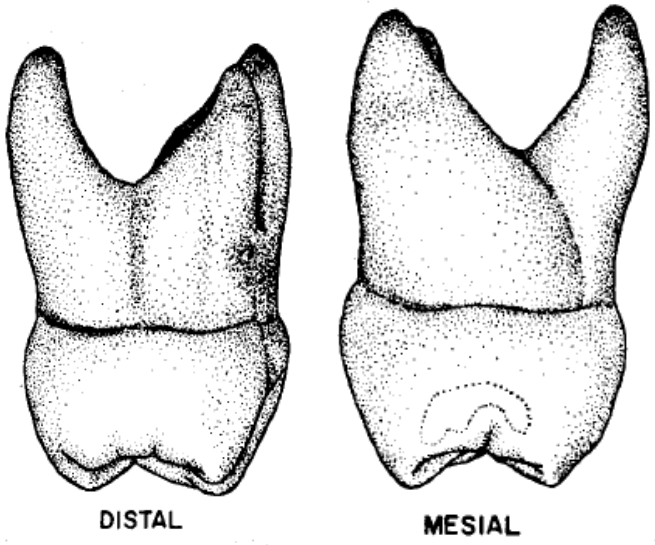
The lingual surface appears with only one large lingual cusp and no lingual groove. However in many cases the third molar may have the main essential features of poorly developed distolingual cusp and a lingual groove.

Mesial surface:

The main feature is the fusion of the roots and their tapering to the apex. However, the fused roots may show bifurcation at the apical third. The root portion is shorter in relation to the crown length.

Distal surface:

Most of the occlusal and the buccal surfaces are seen from the distal aspect. The length of the crown distally is shorter. There is no distal contact area.



Occlusal surface:

The occlusal surface of a typical maxillary third molar is heart shaped. The lingual cusp is large and there is little or no distolingual cusp. This gives a semicircular outline to the tooth lingually. A lot of supplemental grooves are a characteristic feature for the third molars giving the occlusal surface a wrinkled appearance.

However, the third molar may show four distinct cusps with an oblique ridge, similar to that of the rhomboidal type of second molar.