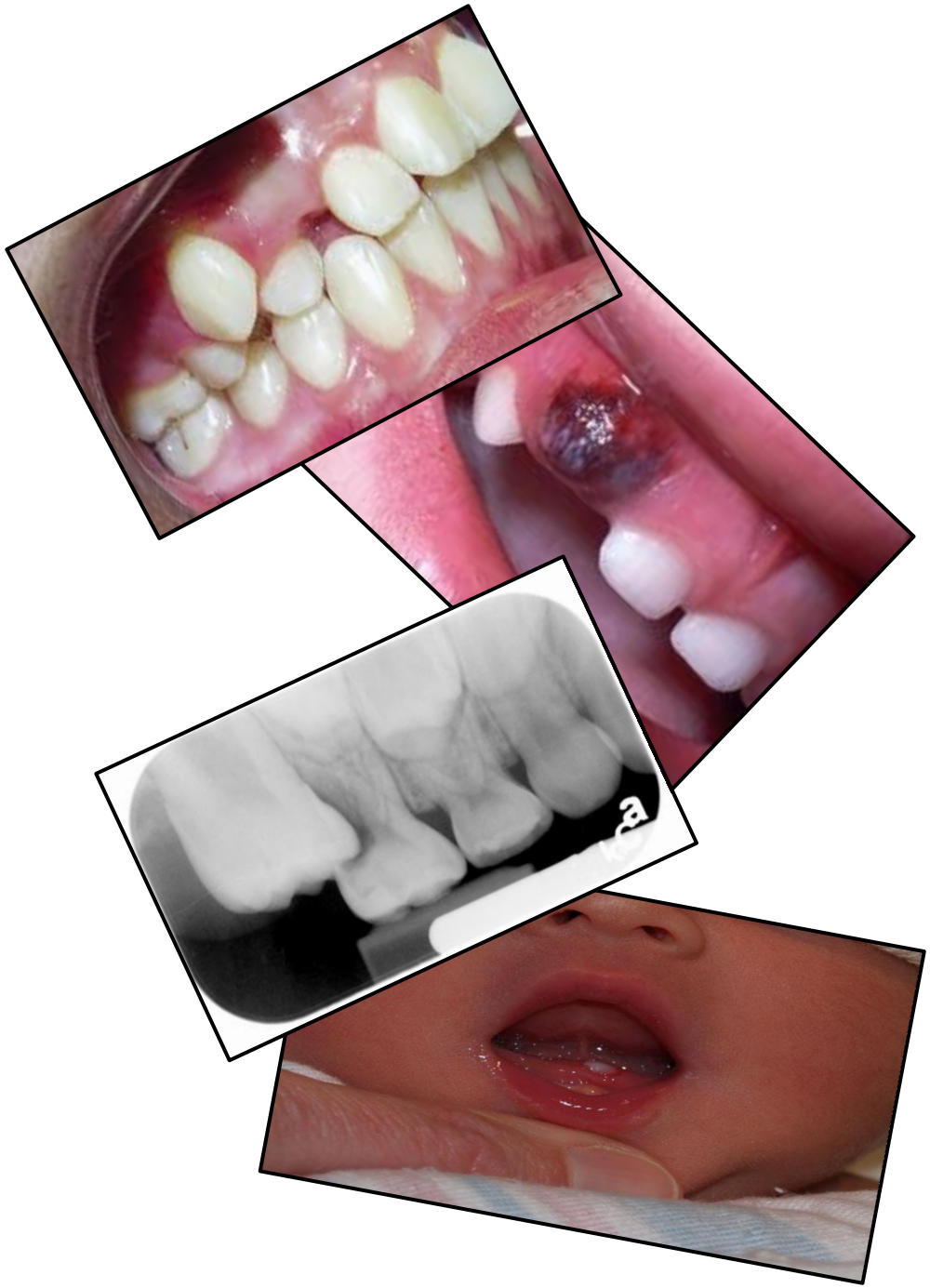
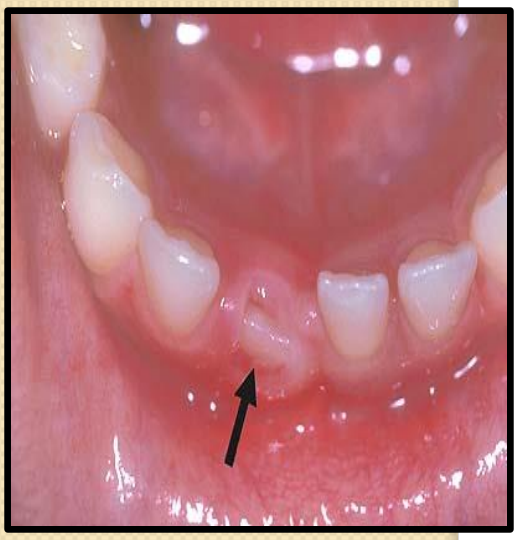
TEETHING PROBLEMS & THEIR MANAGEMENT

Contents



WHAT IS TEETHING?

Teething is the process by which an infant's teeth erupt, or break through, the gums. Teething is also referred to as **"cutting"** of the teeth.
Teething is medically termed **Odontiasis**.
In most cases, eruption of primary teeth causes no distress to the child or parents, but sometimes process causes local irritation which may interfere with child's sleep.
The small primary incisor usually erupts without difficulty, but difficult teething is commonly associated with larger teeth.



WHEN DO BABIES START TEETHING?

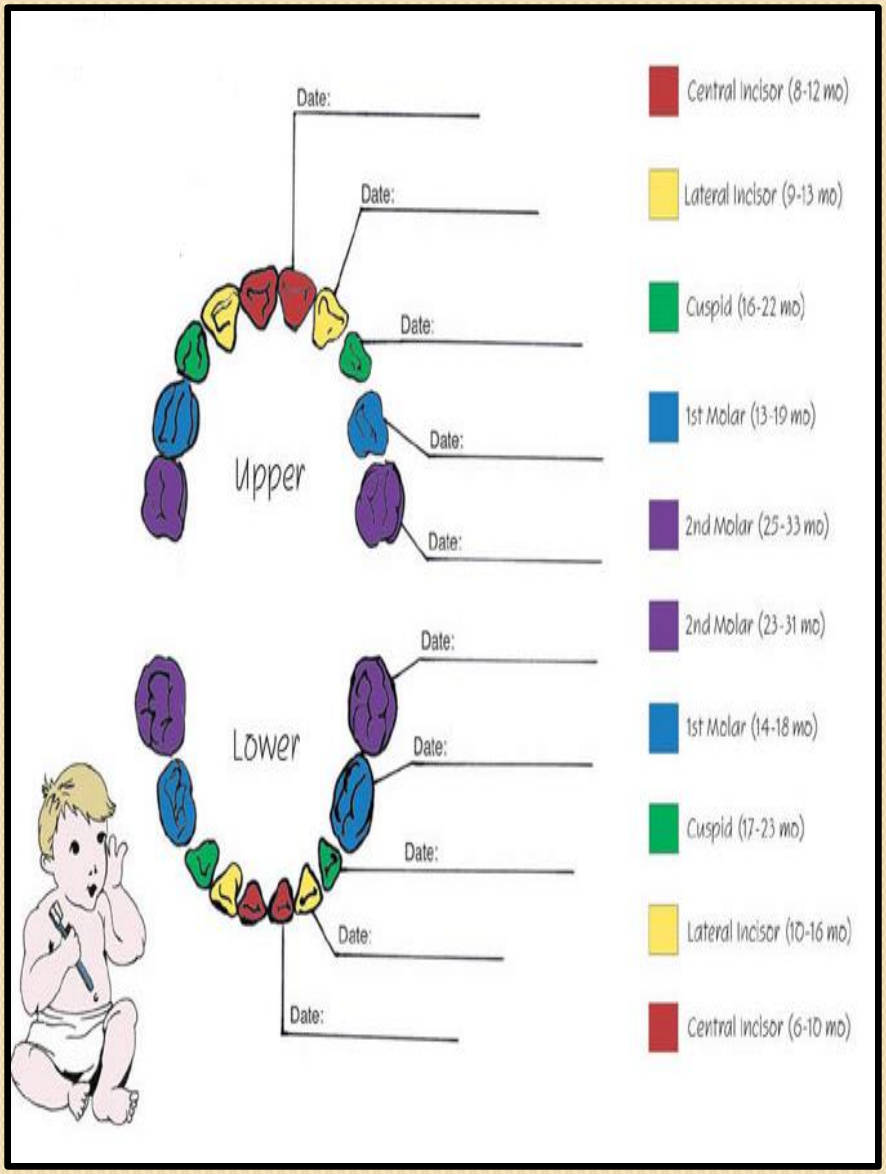
The onset of teething symptoms typically precedes the eruption of a tooth by several days. While a baby's first tooth can present between 4 and 10 months of age, the first tooth usually erupts at approximately 6 months of age. Some dentists have noted a family pattern of "early," "average," or "late" teethers.

ORDER OF ERUPTION

The following is the general order of eruption of primary teeth:

Central incisors: 6-12 months of age.
Lateral incisors: 9-16 months of age
Canine teeth: 16-23 months of age
First molars: 13-19 months of age
Second molars: 22-24 months of age

Between 6 to 12 years of age, the roots of these 20 "baby" teeth degenerate, allowing their replacement with 32 permanent "adult" teeth. The third molars ("wisdom teeth") have no preceding "baby" version and generally erupt in mid to late adolescence. Because of their tendency to promote crowding and crooked orientation, they are often removed.



SIGNS ASSOCIATED WITH TEETHING

SYSTEMIC

- General irritability and crying
- Fever (especially over 101 F)
- Diarrhea, runny nose and cough
- Prolonged fussiness
- Rash over the body
- Increased thirst
- Loss of appetite

LOCAL

- Increased drooling
- Restless or decreased sleeping due to gum discomfort
- Refusal of food due to soreness of the gum region
- Fussiness that comes and goes
- Bringing hands to the mouth
- Mild rash around the mouth due to skin irritation secondary to excessive drooling
- Rubbing the cheek or ear region as a consequence of referred pain during the eruption of the molars

SYMPTOMS ASSOCIATED WITH TEETHING

LOCAL	SYSTEMIC
• Eruption Hematoma • Eruption Sequestrum • Ectopic Eruption • Transposition • Submerged tooth (Infraocclusion) • Impaction • Natal and Neonatal Teeth • Epstein pearls • Bohn's Nodules • Ankylosis	• Fever • Diarrhea • Convulsions • Vomiting • Cholera • Infantile Paralysis


10 SIGNS your little one might be Teething
fussiness
fever
pain
drooling
coughing
rash
crying
ear pulling
sweating
runny
diarrhea
irritability
nose
biting
1. FEVER
Try cooling your baby down with a cool wet cloth. Alternatively chamomile tea sipped through a straw can also bring some relief.
2. BITING
Try dipping one end a baby face cloth into either breastmilk or formula (water will also work) and sticking it in the freezer for an hour or so. Give your baby the end that's not frozen to hold and let him bite on the frozen side.
3. Crying
For teething related fussiness you need to get your little ones mind off the pain. Something as simple as a little relaxing music and some rocking can be very affective. If all else fails theres nothing like a ride in the car to lull a baby into relaxation!
4. Drooling
Get yourself a dry wash cloth and let the mopping begin. You'll want to keep the wee ones face dry to avoide a rash.
5. Wakefulness
If your little angel just started sleeping through we can relate! Try creating a relaxing bedtime routine. The more relaxed baby is before bedtime the more likely he is to sleep through.
6. Ear Rubbing
Ear rubbing is not always a sign of an ear infection. Check to see if your little one has swollen gums and try giving her a little gum massage with your finger tips. They will often resist at first but after a little persuasthion will let you do it - especially after they realize it brings relief!
7. No Appetite
If your little one is still not on solid foods and has no interest in breast or bottle, its likely due to teething which makes feeding painful. Try dipping a clean cloth in some milk and letting them suck on it for a while.
8. Runny Nose
Many babies experience cold like symptoms wh
teething. Try to keep
as relaxed as possi
wipe their nose fr
to avoid any ras
9. Chin Rash
Definitely one of the more
10. Diarrhea
While doctors will insist diarrhea is not a teething symptom many moms
Do you have a grumpy baby?
If your baby is between 3-12 months you could be experiencing the first signs of teething.
Here are 10 signs to watch for and a few home remedies to help ease your little ones discomfort.
7 Baby Teething Remedies
Teething Gel
Teething Gel
Infants' Advil
Dye-Free
chockababy.com

SYSTEMIC MEDICAMENTS:

- **Analgesic Preperations:** Sugar free paracetamol (5 ml contains 120 mg of paracetamol)
- Upto 1 year: 5 ml at bed time
- 1-5 years: 10 ml at bed time

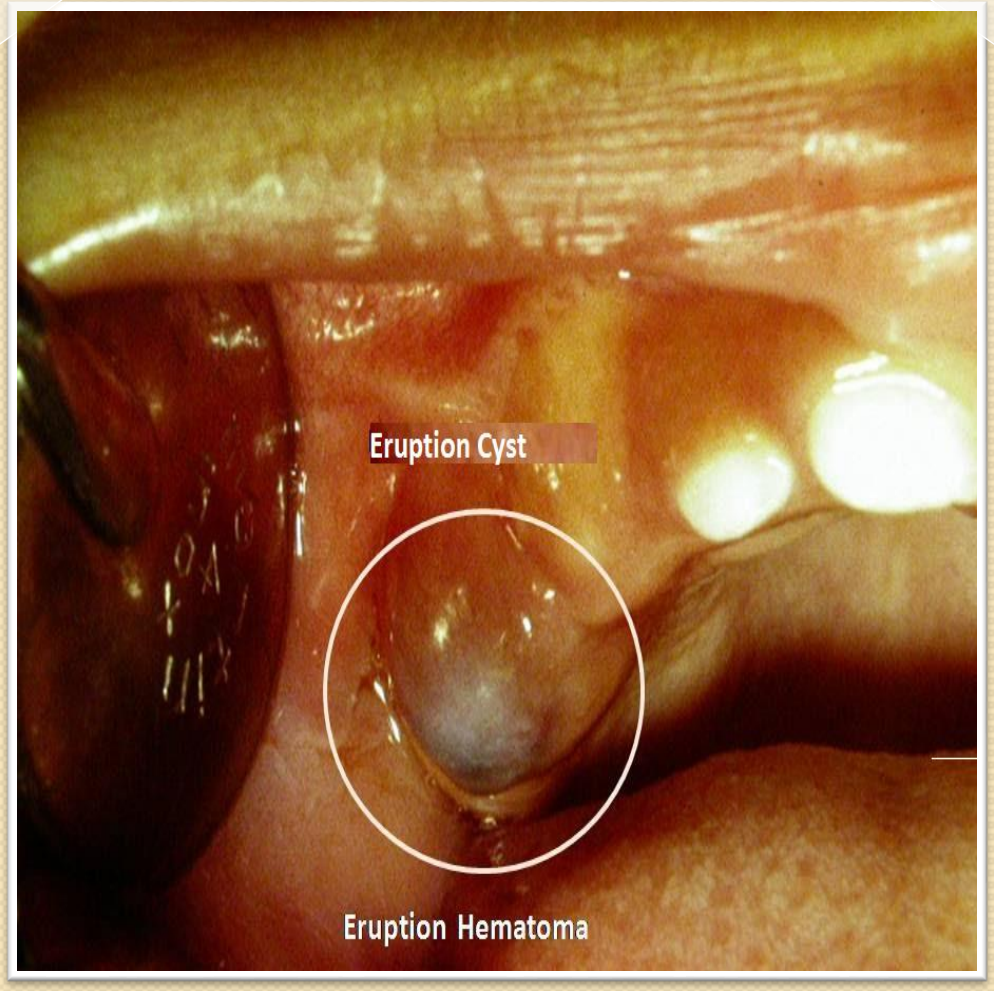
- **Hypnotics & Sedatives:** 5ml contains 200 mg of chloral hydrate
- Upto 1 year: 2.5 ml BD
- 1-5 years: 2.5-5ml TDS

ERUPTION HAEMATOMA

- Also called as Eruption Cyst.
- It is a soft tissue analogue of the dentigerous cyst, but recognized as a separate clinical entity.
- Dentigerous cyst develops around the crown of an unerupted tooth lying in the bone, the eruption cyst occurs when a tooth is impeded in its eruption within the soft tissues overlying the bone.
- It's a bluish-purple, elevated area of tissue.
- Occasionally develops few weeks before eruption of primary or permanent teeth.
- Blood filled cyst is most frequently seen in primary II molar or I permanent molar region.
- It develops due trauma to soft tissues during function and is self limiting.

CLINICAL FEATURES

- It is developmental soft tissue cyst of odontogenic origin.
- It is usually found in children
- Early caries, trauma, infection and the deficient space for eruption are possible causative factors.
- The lesion appears as a circumscribed, fluctuant, often translucent swelling of the alveolar ridge over the site of the erupting tooth. When the circumcoronal cystic cavity contains blood, the swelling appears purple or deep blue; hence, the term "Eruption Haematoma".
- **Differential diagnosis** is hemangioma, neonatal alveolar lymphangioma, pyogenic granuloma, amalgam tattoo.



An Eruption Haematoma in the posterior maxilla

On radiographic examination, it is difficult to distinguish the cystic space of eruption cyst because both the cyst and tooth are directly in the soft tissue of the alveolar crest and no bone involvement is seen.

MANAGEMENT

- Since it is self correcting, treatment is usually unnecessary.
- The cyst roof may be removed to allow the tooth to erupt although most of them burst spontaneously.
- Surgical Excision

ERUPTION SEQUESTRUM

- Eruption Sequestrum, is an anomaly associated with erupting teeth in children, was first described by Starkey and Shafer.

- They have little or no clinical significance, as they usually sequestrate spontaneously.

ETIOLOGY

As the molar teeth erupt through the bone, they will occasionally separate a small osseous fragment from the surrounding contagious bone.

In most cases, this fragment probably undergoes total resorption prior to eruption.

If the bony spicule is larger or eruption is fast, complete resorption cannot occur and the eruption sequestrum is observed.

CLINICAL FEATURES

- Eruption Sequestrum is a tiny, irregular spicule of bone overlying the crown of an **erupting** permanent molar, found just prior to or immediately following the emergence of the tips of cusps through the oral mucosa.

- The spicule directly overlies the central occlusal fossa but is contained within the soft tissue.

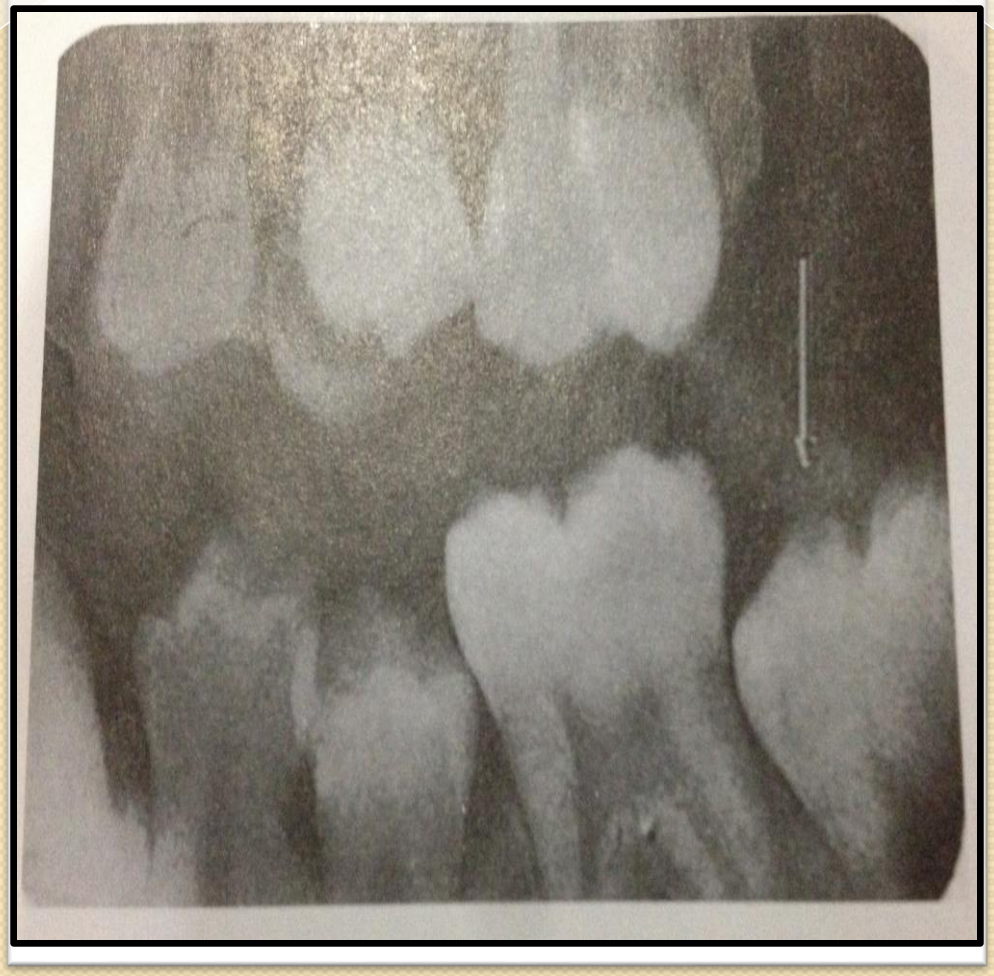
- As the tooth continues to erupt and the cusp emerge, the fragment of bone completely sequestrates through the mucosa and is lost.

- For a few days, the fragment of bone may be seen, lying on the crest of ridge in a tiny depression from which it may be easily removed.

RADIOGRAPHIC FEATURES

- It is possible to recognize eruption sequestrum radiographically even before the teeth begins to erupt into the oral cavity or before the bony spicule perforates the mucosa.

- It appears as a tiny, irregular opacity overlying the central occlusal fossa but seperated from the tooth itself.

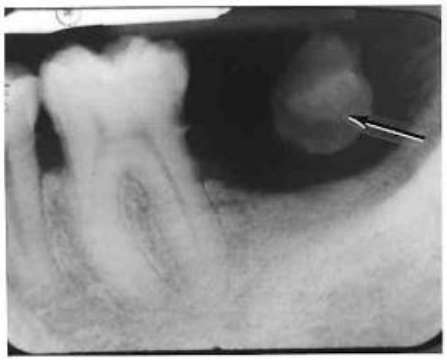


Eruption Sequestra In children

CLINICAL SIGNIFICANCE AND TREATMENT

The clinical significance associated with this condition is that, occasionally a child may complain of a slight soreness in the area, probably produced by compression of the soft tissue over the spicule during eating and just prior to its breaking through the mucosa, or by the movement of the spicule in the soft tissue cyst during mastication and following eruption through the mucosa.

No treatment is necessary as the condition resolves by itself.

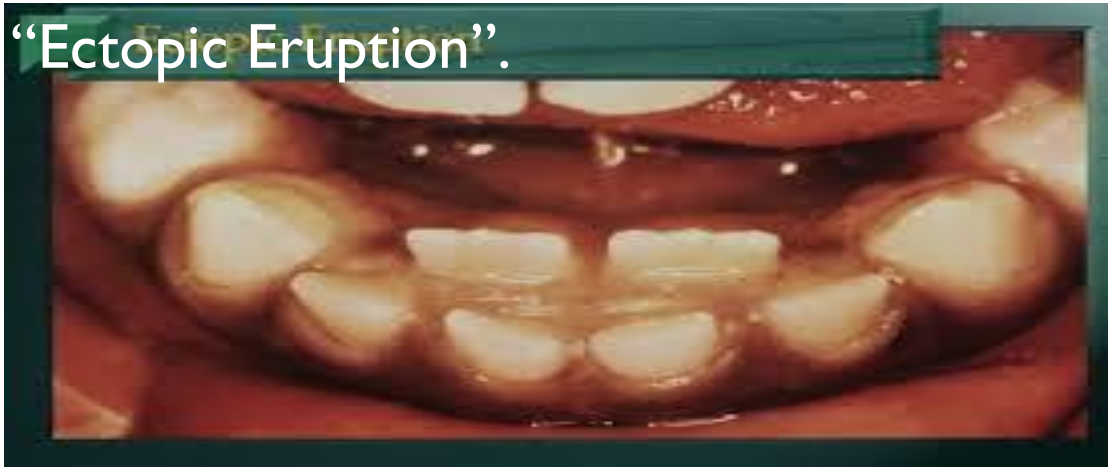


Sequestrum that has floated into the soft tissues. Patient gave a history of a problematic tooth extraction several years ago which resulted in clinical complications.

ECTOPIC ERUPTION

- Before permanent teeth erupt into the oral cavity and are visible, they move through the bone along their "path of eruption".

- When the eruption path is incorrect, the tooth will erupt in the mouth in an incorrect position or may not erupt at all. When this occurs, this undesirable eruption is called "Ectopic Eruption".



ETIOLOGY

- Ectopic eruption often occurs when there is inadequate space in the jaws for the teeth.

- The last tooth to erupt gets what space is left, which is not enough. The eruption path is deflected due to the crowding and the tooth erupts "ectopically" (in the incorrect position) or not at all.

A tooth erupting ectopically may erupt against the root of an adjacent tooth with enough pressure to cause root resorption and the ultimate loss of the adjacent tooth.

An ectopic tooth may not erupt through the gum at all and may require orthodontics, as well as surgery, to bring it into a functional position.

If an ectopic tooth does erupt, it will of course, erupt in an incorrect position because by definition, it has had an incorrect path or direction of eruption.

If the ectopic tooth erupts, it will erupt toward the palate or out against the cheek.

MANAGEMENT

Once a tooth (or teeth) is noticed to be "ectopically" erupting, interceptive orthodontics should be planned.

If the tooth has inadequate space, adequate space should be made as soon as possible, preferably without removing permanent teeth. After adequate space is achieved, the ectopic tooth's eruption should be closely observed.

Interceptive treatment benefits the ectopic teeth by the following:

1. Fewer extractions of permanent teeth are necessary.
2. Less orthodontic treatment needed once the tooth erupts.

3. Fewer side effects:
A). Resorption of the roots of adjacent permanent teeth.
B). Periodontal problems if the ectopic tooth is allowed to erupt in toward the palate or out toward the cheek.

4. Better self esteem than if the ectopic tooth erupts out of alignment and creates negative peer pressure.

Interceptive treatment will usually greatly improve the eruption of the ectopic tooth but final orthodontic alignment is normally required to obtain an ideal result.

A). FIRST PERMANENT MOLARS

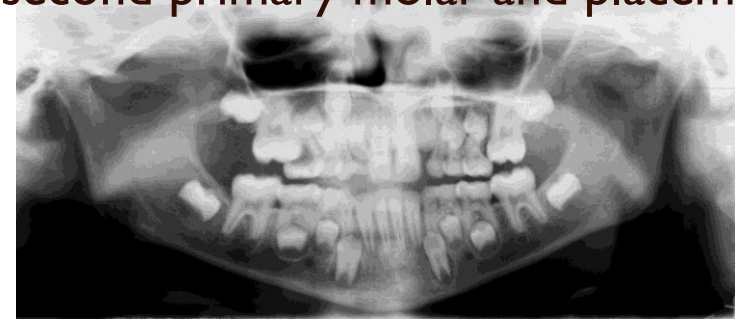
Ectopic eruption is due to mesial positioning or inclination of the tooth into the second primary molar. This can result in delay of eruption of the first permanent molar and resorption of the distal root of the second primary molar.

Treatment consist of:

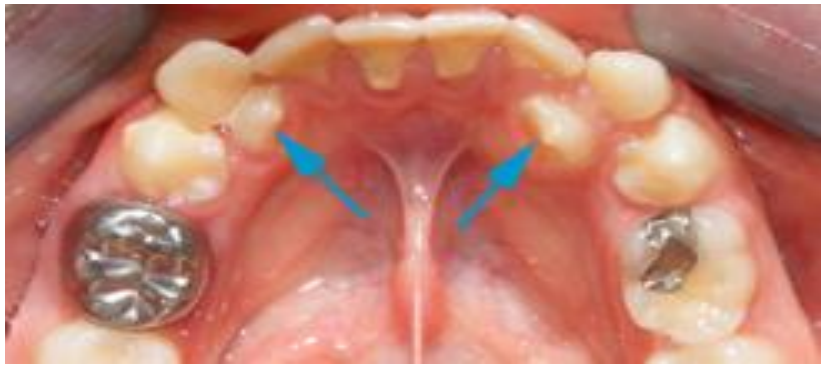
a). Placement of seperating elastics, brass ligature wire or orthodontic appliance to distalize the first molar.

b). Contour the distal of the second primary molar.

c). Extraction of the second primary molar and placement of a distalizing appliances.



B). CUSPID



- Ectopic eruption is due to the mesial inclination of the permanent cuspid becoming impacted in the palate or impacting on the root of the lateral incisor.
- A clinical indicator is distal tipping of the lateral incisor crown.
- Panoramic, periapical and occlusal radiographs are used to determine the position of the cuspid relative to the lateral incisor.

Treatment consist of:

a). Extraction of the primary cuspid

b). Orthodontic lassoning of the permanent cuspid.

TRANSPOSITION

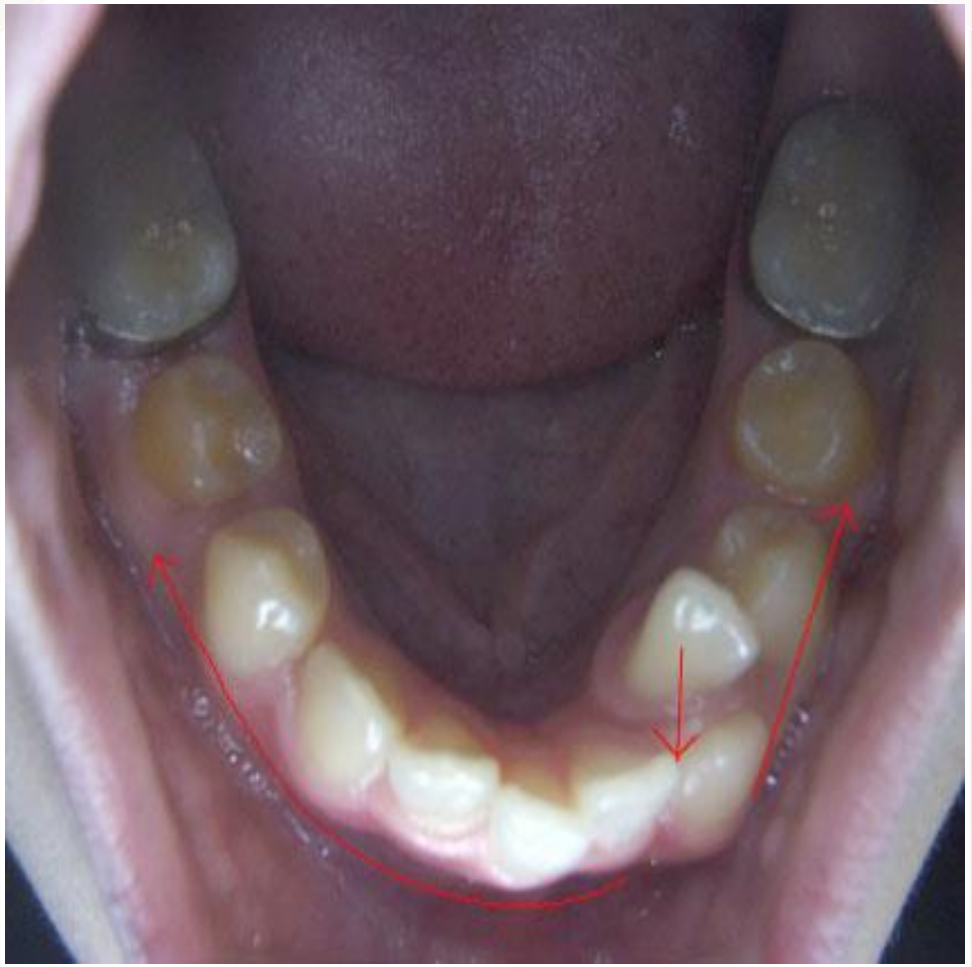
- Dental transposition is the positional interchange of two adjacent teeth, or the development or eruption of a tooth in a position normally occupied by a non-adjacent tooth.

- Transposition is said to be complete when two involved teeth have fully or almost fully exchanged places.

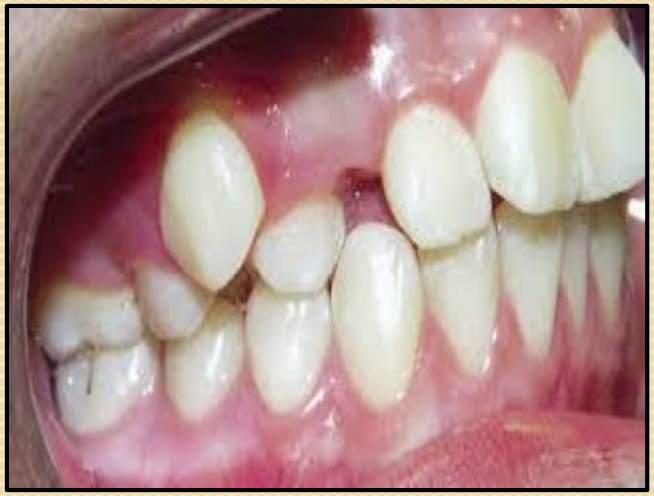
- It is incomplete when the positions of the teeth are not completely exchanged, but show a tendency towards exchange.

CLINICAL FEATURES

- Maxilla> Mandible
- The transposition of teeth usually involves the canines and also the lateral incisors and premolars.
- Canine-Lateral Incisors transpositions are found to be more common than canine-premolar transpositions.
- It has been found that most of the transpositions are bilateral, with the same pairs.
- In unilateral cases, there was a predominance of left-sided transposition.



Transposition of canine and lateral incisor



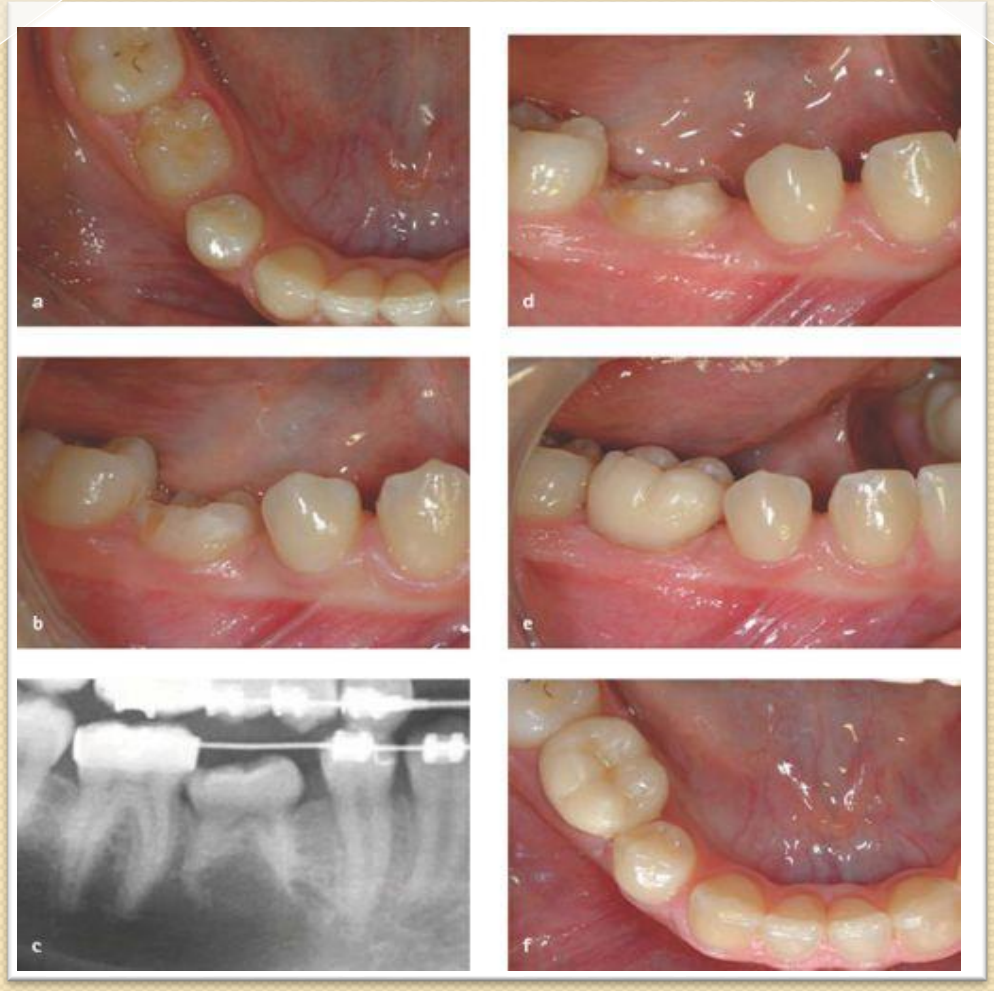
Transposition of canine and 1st premolar

MANAGEMENT

Treatment consist of interceptive orthodontic procedures.

INFRAOCCLUSION

- A submerged tooth is one that has failed to maintain it's position relative to adjacent teeth in the developing dentition and is therefore below the occlusal level.
- Submergence is commonly associated with primary molars but permanent molars may be occasionally affected.
- The prevalence of submergence in children varies from 1.3 to 8.9%.
- The most commonly affected submerged tooth are the mandibular primary first molar then mandibular second molar as compared to maxillary first and second molar.



InfraOcclusion or Submergence

MECHANISM OF SUBMERGENCE

- The mechanism of submergence appears to be related to ankylosis as a rythmic alternative phase of resorption and repair of the bone.

- It is the normal phenomena of primary teeth resorption.
- If there is excessive repair (excessive bone formation), it leads to the ankylosis of primary tooth.

- Further occlusal movement of the tooth is retarded or arrested and it falls below the occlusal level of neighboring teeth.

TREATMENT

- The type of treatment required, depends on the degree of submergence.
- **Minimal submergence:** Marginal ridge of submerged tooth occlusal to adjacent contact area:-

i). Observe and recall visit every 6-12 months

ii). Make a radiograph and study model every 6-12 months.

- **Moderate submergence:** Marginal ridge of submerged tooth just cervical to adjacent contact areas.

i). If submerged tooth does not interfere with premolar eruption, the tooth may be retained and restored to normal contact with stainless steel crown or composite.

ii). If it interferes with premolar eruption, it should be extracted and place a space maintainer.

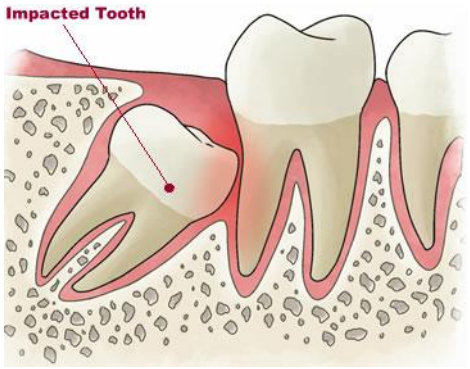
- **Severe submergence (Marginal Ridge at gingival level):** Extract the submerged molar and maintain the space by space maintainer. A submerged permanent molar must be extracted ideally before it becomes submerged below the gingiva.

IMPACTED TEETH

- An **impacted tooth** is one that fails to erupt into the dental arch within the specific time.
- Common order of impaction:

  i). Mandibular 1st molar

  ii). Permanent canines



- Maxillary canine tooth has the longest period of development and follows the most dubious course in it's eruption and occupies several developmental positions, in succession and is easily deflected from its normal course of eruption.

ETIOLOGY

- Lack of space due to crowding of the dental arches

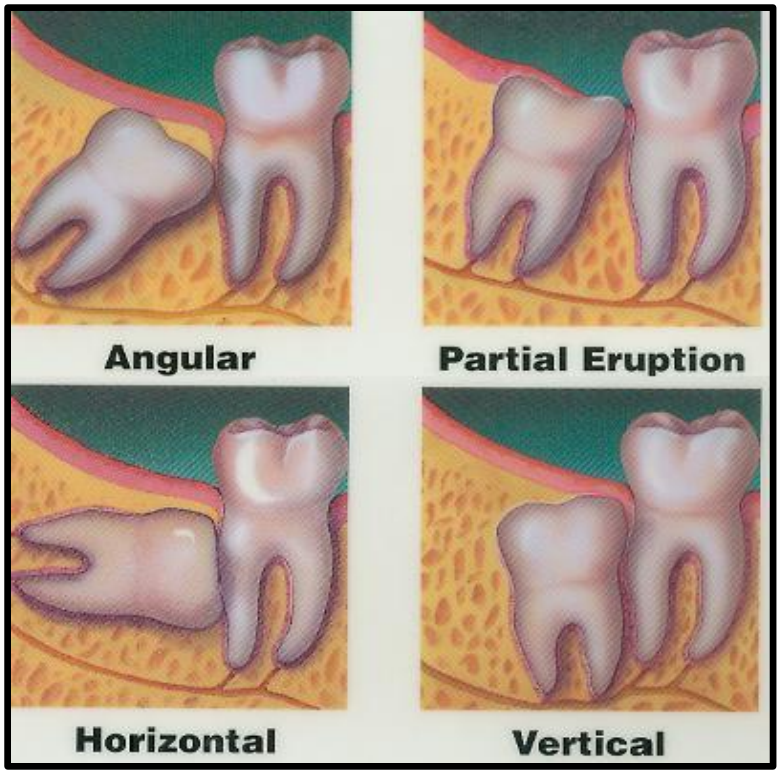
- Premature loss of deciduous teeth with subsequent partial closure of the area they occupied is a common factor in etiology of partially or completely impacted teeth.

- Rotation of tooth buds resulting in teeth which are 'aimed' in the wrong direction because their long axis is not parallel to a normal eruption path.

IMPACTION PATTERNS OF MANDIBULAR THIRD MOLARS

1). Mesioangular Impaction: The third molar lies obliquely in the bone, the crown pointing in a mesial direction, usually in contact with the distal surface of the root or crown of the second molar. **This is the most common type of impaction.**

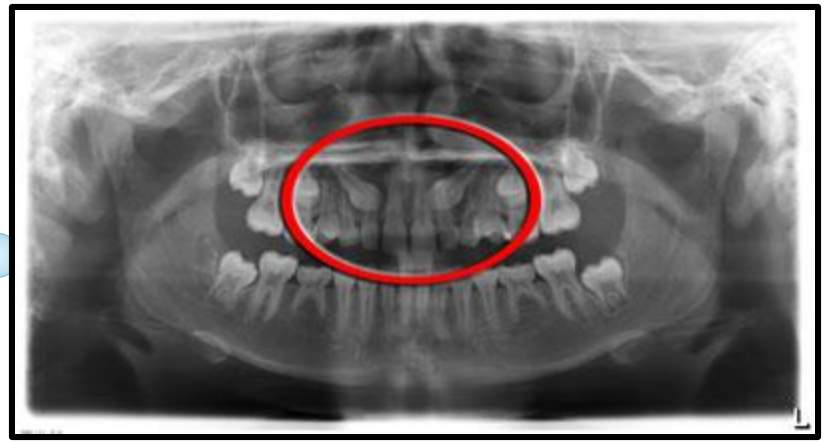
2). Distoangular Impaction: The third molar lies obliquely in the bone, the crown of the tooth pointing distally toward the ramus, the roots approximating the distal root of the second molar.



3). Vertical Impaction: The third molar is in its normal vertical position, but is prevented from erupting by impingement on the distal surface of the second molar or the anterior border of the ramus.

4). Horizontal Impaction: The third molar is in a horizontal position with respect to the body of the mandible, and the crown may or may not be in contact with the distal surface of second molar crown or roots.

IMPACTION PATTERNS OF MAXILLARY CUSPIDS



1). Horizontal Impaction: The crown usually points in an anterior direction and may impinge on the roots of any of the incisors or premolars.

2). Vertical Impaction: The vertically impacted cuspid is usually situated between the roots of the lateral incisor and first premolar and is prevented from eruption simply by lack of space.

COMPLICATIONS

- Resorption of roots of adjacent teeth
- Periodic pain
- Trismus, particularly when infection occurs around partially impacted teeth.
- Referred pain from impacted teeth.

TREATMENT

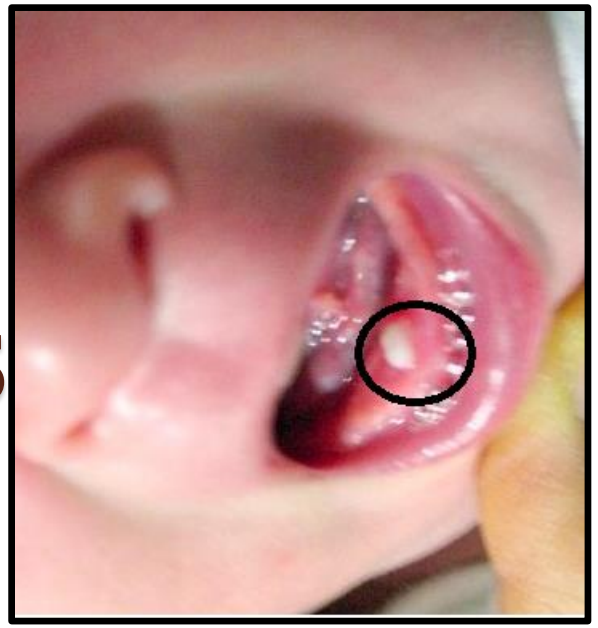
1). Extract maxillary deciduous canine: If abnormal eruption of maxillary permanent canine is detected before the age of 13 years, extraction of primary canine results in correction of path of eruption of canine.

2). Extraction of primary canine and surgical exposure of permanent canine's crown: usually after extraction of primary canine, the permanent canine erupts normally at the age of 10-13 years but may not erupt in older patient. In such case surgical exposure of crown may enhance eruption.

NATAL AND NEONATAL TEETH

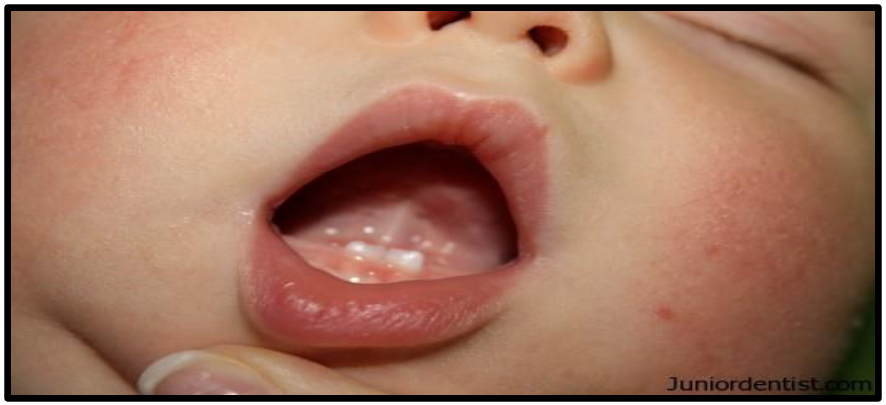
- **Natal Teeth:** They are the teeth that are present in the oral cavity at the time of birth.
- **Neonatal Teeth:** They are the teeth that appear in the oral cavity during the first 30 days of life.

CLINICAL FEATURES



- Natal teeth generally develop on the lower gum, where the central incisor teeth will appear. They have little root structure and are attached to the end of the gum by soft tissue and are often wobbly.

- Natal teeth are usually not well formed, but they are firm enough that, because of their placement, they may cause irritation and injury to the infant's tongue during nursing.



- They are poorly developed, conical, yellowish with hypoplastic enamel and dentin and with poor or total failure of the development of the roots.
- The appearance of each natal tooth can be classified in one of the following categories:

a). A shell like crown structure, loosely attached to the alveolus by a rim of mucosa

b). No root but a solid crown, loosely attached to the alveolus by oral mucosa

c). Little or no root, incisal edge of the crown just erupted through the oral mucosa

d). A mucosal swelling with the tooth unerupted but palpable

ETIOLOGY

Most of the time natal teeth are not related to a medical condition. However, sometimes they may be associated with:

a). Ellis-van creveld syndrome
b). Hallerman-Strieff syndrome
c). Pierre Robin syndrome
d). Soto syndrome

- They are attributed to superficial positioning of the developing tooth germs, which predisposes the tooth to erupt early.

- The tooth germ is not located in the alveolus but slightly below the surface of the alveolar bone, very much above the germ of the permanent successor.

MANAGEMENT

- A radiograph should be taken to determine the amount of root development and the relationship of a prematurely erupted tooth to the adjacent teeth.

- Most prematurely erupted teeth are hypermobile because of the limited development.

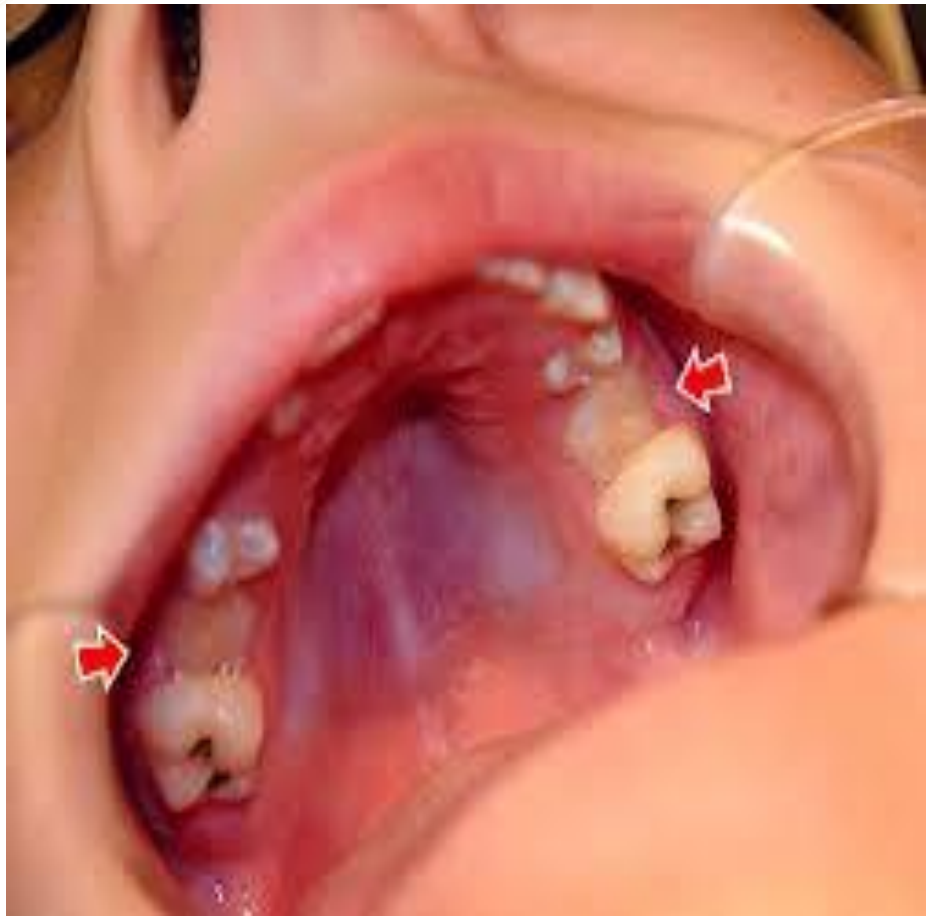
- Some teeth are mobile to the extent that there is a danger of aspiration, in which case, removal of the tooth is indicated.

- After the removal of the tooth, careful curettage of the socket is indicated in an attempt to remove any odontogenic cellular elements that may otherwise be left at the extraction site, such retained remnants may subsequently develop a typical tooth like structure that require additional treatment.

ANKYLOSIS

- It is the aberration of tooth eruption in which the continuity of the periodontal ligament has been compromised and the tooth is fused to the underlying bone.

- The tooth appears submerged and does not occlude with the opposing tooth, as the ankylosed tooth is in the state of static retention whereas in the adjacent areas, eruption and alveolar growth continues.



Ankylosis

Ankylosis due to trauma

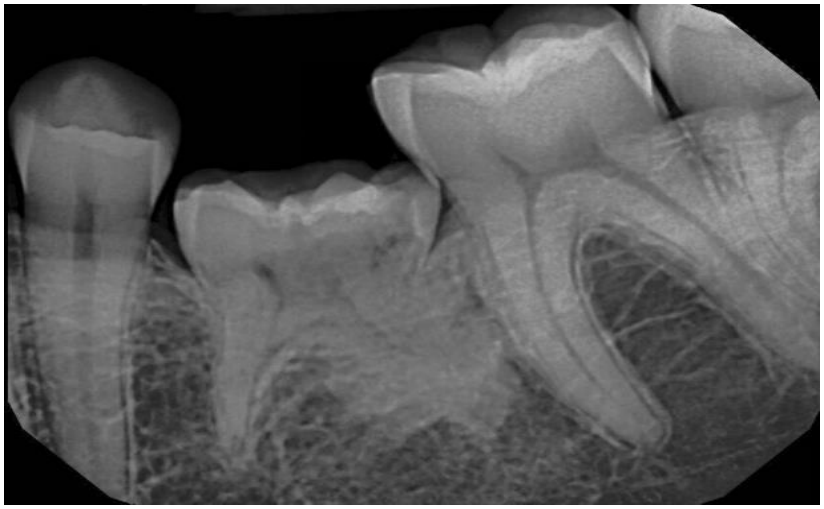
ETIOLOGY

The cause of ankylosis is not known, although in some cases, trauma, infection, disturbed local metabolism or a genetic influence has been considered an important etiologic factors.

RADIOGRAPHIC FEATURES

- Partial absence of the periodontal ligament is seen, with areas of apparent blending between the tooth root and bone.

- The process is basically one of resorption of tooth substance and bony repair with the result that the tooth is locked in bone.



DIAGNOSIS

Diagnosis of an ankylosed tooth can be made based on the following points:

a). No contact with opposing molar
b). Not mobile inspite of advanced root resorption.
c). Comparing the sound by tapping the involved and adjacent tooth. Ankylosed tooth exhibits solid sound, but a normal tooth has a cushioned sound.
d). Break in the continuity of periodontal ligament.

MANAGEMENT

a). Surgical removal, if the permanent successor is present.

b). If permanent teeth are missing, functional occlusion is established with stainless steel crowns on the affected tooth.

Epstein Pearls

- Epstein pearls are whitish-yellow cysts that form on the gums and roof of mouth in a newborn baby.
- They are remnants of epithelial tissue trapped along the raphe as the fetus grows.
- They are formed along the median palatine raphe.

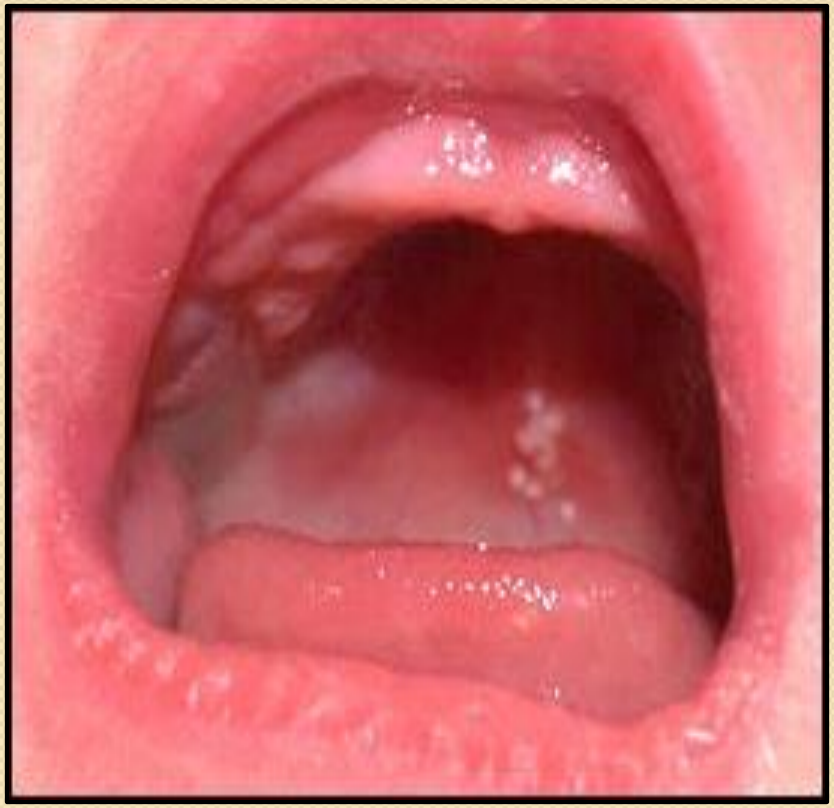
Bohn's Nodules

- Bohn's nodules are smooth whitish bumps or cysts which are sometimes found in the mouths of newborns.
- They are the remnants of the mucous glands and are histologically different from Epstein pearls.
- They are formed along the buccal and lingual aspects of the dental ridge and on the palate away from the raphe.

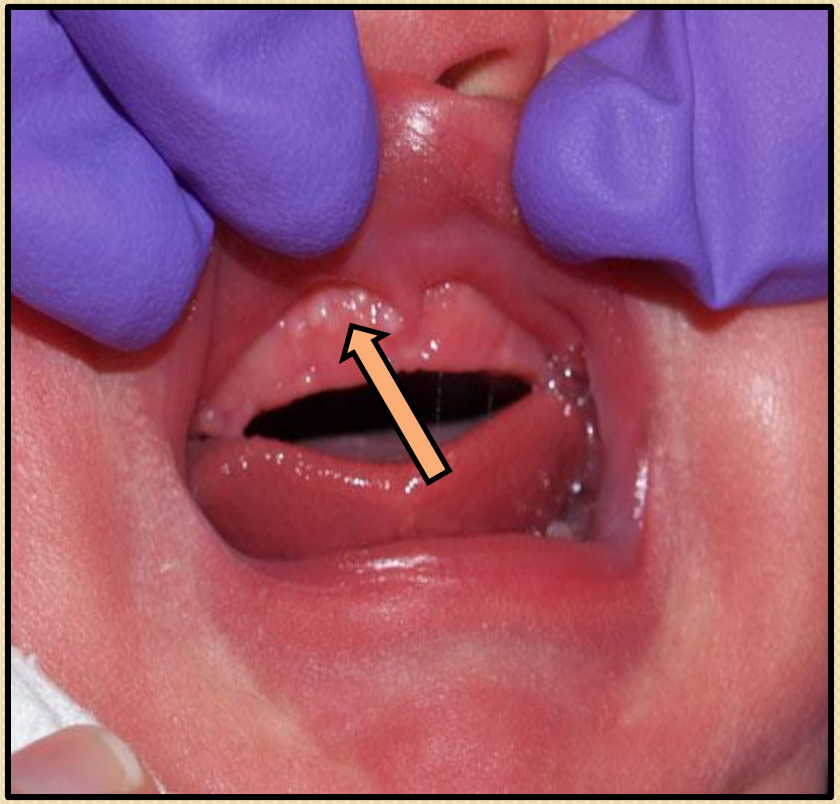
FEATURES

- Epstein Pearls occur only in the newborn and are very common.
- They disappear within 1 to 2 weeks of birth.
- No treatment is required.

- The nodes are a result of cystic degeneration of epithelial rests of the dental lamina (rests of Serres).
- They are benign, and usually disappear within the first three months of life.
- No treatment is required.



Epstein Pearls



Bohn's Nodules

REFERENCES

- Textbook of Pedodontics
- -Shobha Tandon
- Textbook of Pedodontics
- -Nikhil Marwah
- Modern Pediatric dentistry
- -Vinay K Srivastava
- Principles & Practice Of Pedodontics
- - Arathi Rao
- Saunder's manual of Paediatric practice
- Textbook of Oral Pathology
  -Shafers
- Textbook of Orthodontics
  -Bhalaji