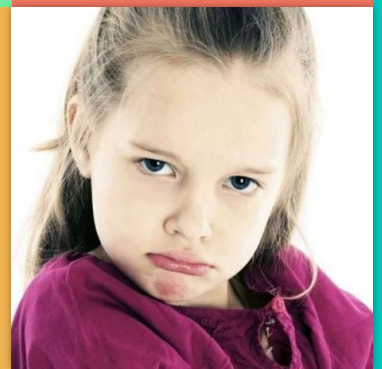

Trauma to Primary Teeth

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Introduction

- Traumatic injuries to the primary dentition present special problems and the management is often different as compared with the permanent dentition.
- Trauma to the oral region occurs frequently and comprises 5% of all injuries for which people seek treatment .

Epidemiology of Dental Trauma

At 5 years, 31-40 % boys and 16-30 % girls will have suffered some dental trauma.

- At 12 years, 12-33 % boys and 4-19 girls will have suffered some dental trauma.
- Boys affected twice as often as girls.
- Maxillary anterior are the most affected teeth.
- Concussions, subluxation and luxation are the commonest injuries in primary dentition.

Etiology of Dental Trauma

- In primary teeth: Incompletely developed coordination leading to fall in and around home.
- In permanent teeth: Falls and collisions during outdoor activities.
- Examples: Sports injuries, road traffic accidents, child abuse
- Types: Direct trauma, indirect trauma

Predisposing Factors

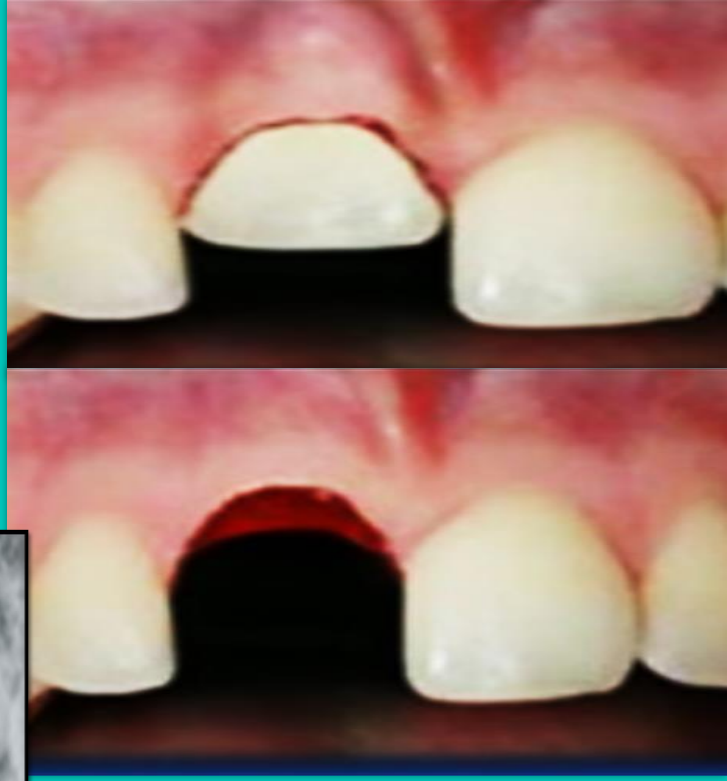
- Protruded upper incisors
- Insufficient lip closure

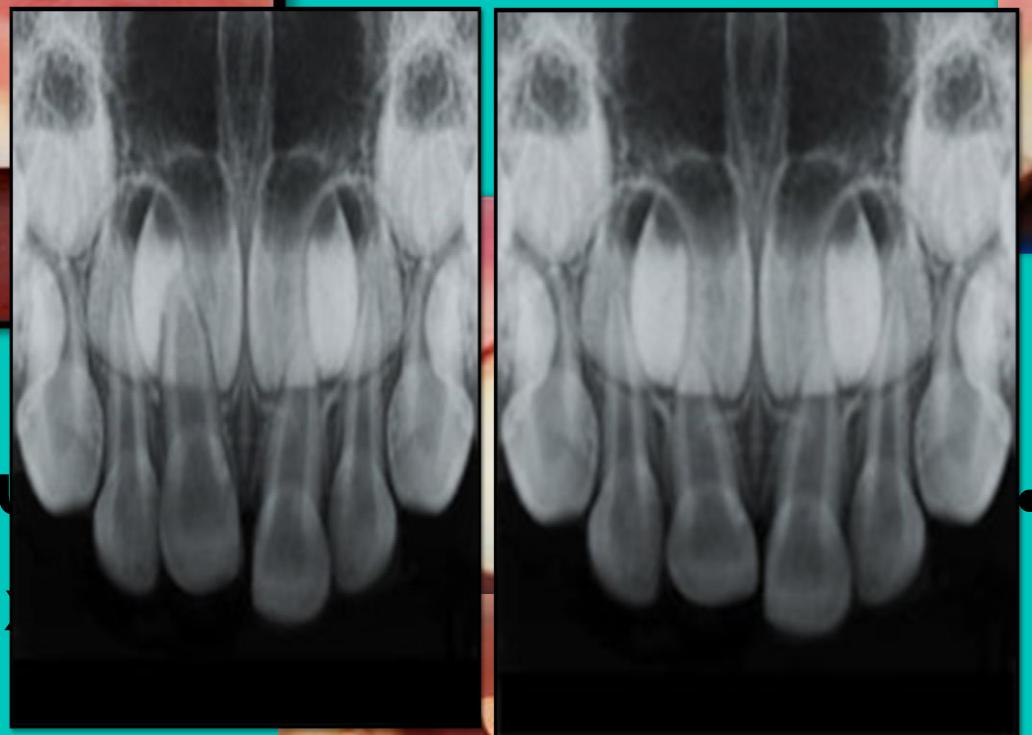
- Injuries to the Periodontal Tissues
- Injuries to the Hard Dental Tissues and the Pulp
- Injuries to the Supporting Bone
- Injuries to Gingiva or Oral Mucosa

CLASSIFICATION

1-Injuries to the Periodontal Tissues

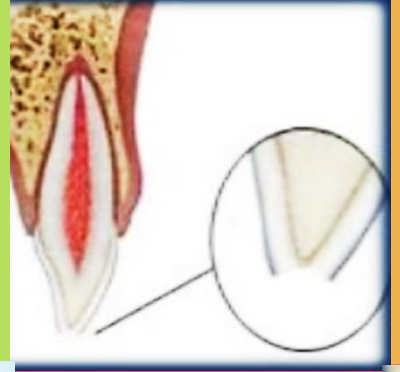
- Concussion
- Subluxation





- Extrusive lu
- Lateral lu

- Intrusive luxation
- Avulsion



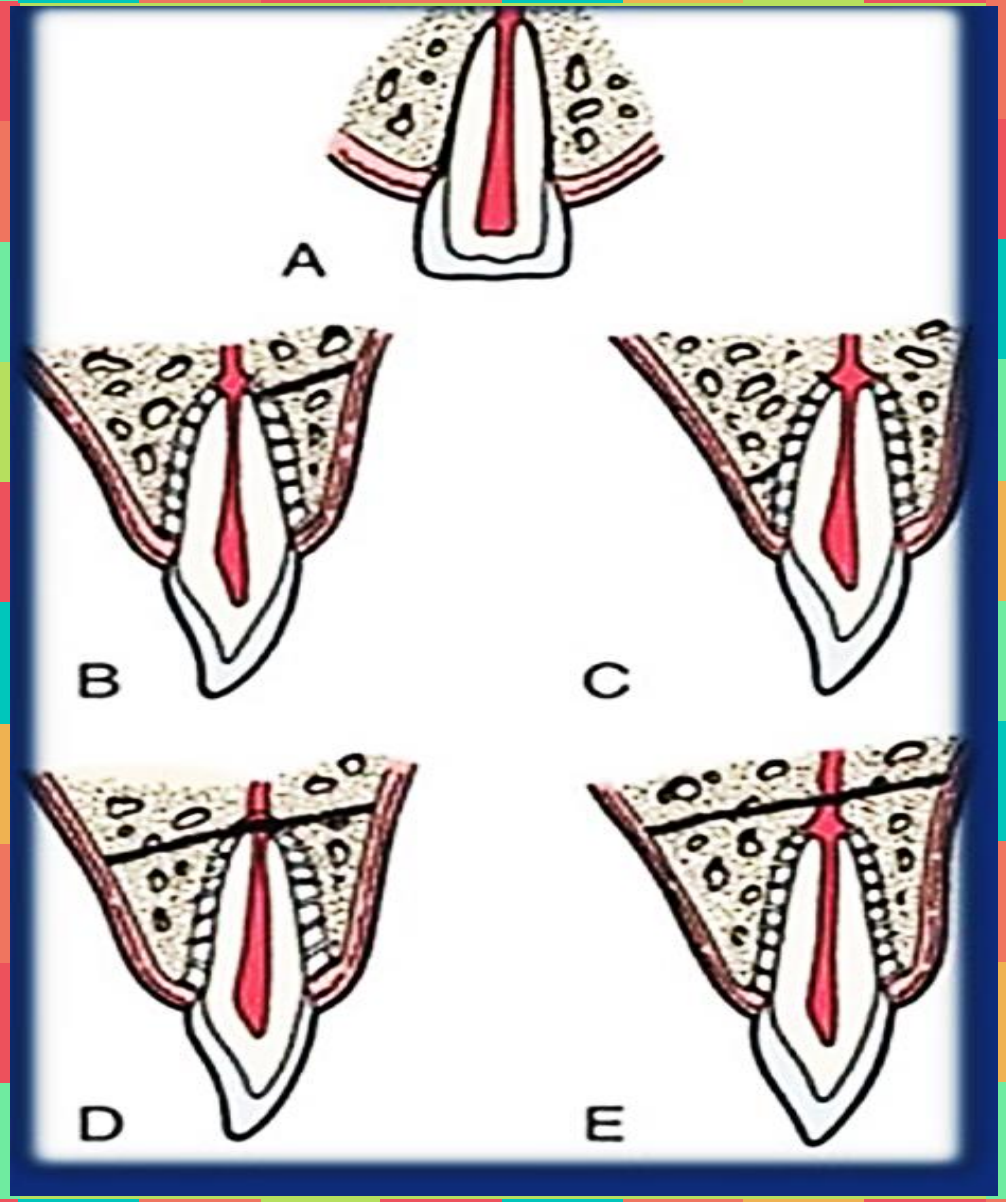

Injuries to The tooth

- Enamel infarction
- Enamel fracture
- Enamel – dentine fracture
- Complicated crown fracture
- Uncomplicated crown – root fracture
- Complicated crown root fracture
- Root fracture

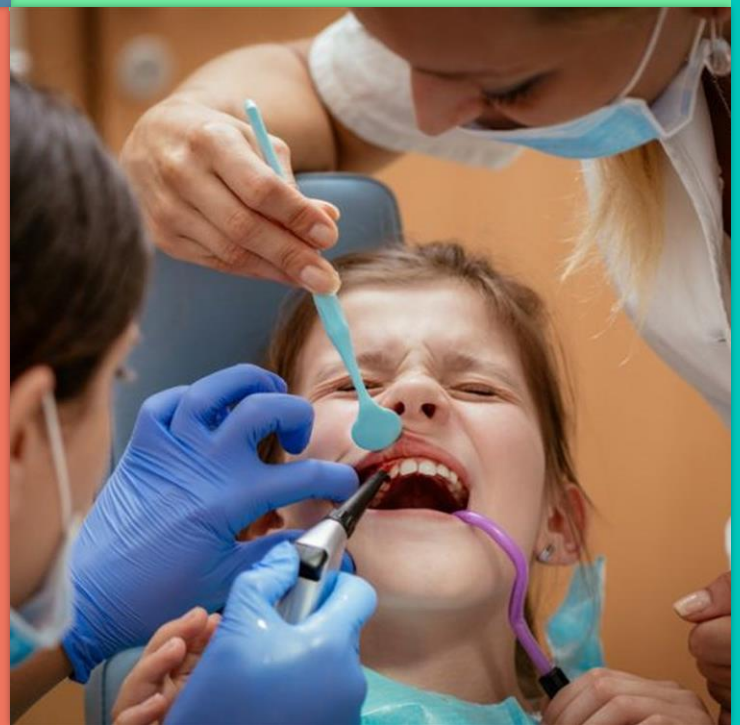
Injuries to Gingiva and Oral Mucosa

- Laceration
- Contusion
- Abrasion

Injuries to the Supporting Bone



- Comminution of socket wall
- Fracture of socket wall
- Fracture of alveolar process
- Fracture of jaw bones



Treatment principle

The primary goal is to optimize periodontal and pulpal healing in the primary dentition provided that no further injury is transmitted to the developing permanent successors.

Dental And Medical History

- When, where, how?
- Lost teeth fragments?
- Headache, vomiting, amnesia?
- Bleeding disorders?
- Drug allergies?
- Tetanus immunization status?
- Rheumatic fever?

Extraoral Examination

- General examination (look for signs of shock e.g. pallor, cold skin, irregular pulse, hypotension)
- Facial swelling, bruises, lacerations
- Limitation of mandibular movement or mandibular deviation

Intraoral Examination

- Inspection (Laceration, abrasion, lip swelling, occlusal abnormality, fractured or cracked crowns, tooth color change)
- Palpation (mobility of tooth or alveolar process)
- Percussion (dull note?)

Treatment Of Traumatized Primary Teeth

Uncomplicated crown fracture	Enameloplasty, restoration
Complicated crown fracture	Pulpectomy, obturation with ZnO/ Eugenol; extraction
Crown – root fracture	Extraction
Root fracture	Remove coronal necrotic fragment
Concussion	Occlusal relief, analgesics
Subluxation	Soft diet, follow up; extraction
Extrusive luxation	Extraction
Intrusive luxation	Palatal displacement → extraction; buccal displacement →followup for spontaneous reeruption
Avulsion	No treatment (No replantation, no space mantainer)

Sequelae of Acute Dental Trauma in The Primary Dentition.

Pulpitis

Pulpitis is the initial response of the tooth to trauma and it accompanies almost every injury. Signs include sensitivity to percussion and capillary congestion, which may be clinically apparent from the lingual surface of the tooth using transillumination. Pulpitis may be reversible in minor injuries or may progress to irreversible pulpitis and pulp necrosis

Tooth Discoloration

- Injuries to the primary incisors frequently cause tooth discoloration
- Blood vessels within the pulp chamber can rupture, depositing blood pigment in the dentinal tubules.
- This blood may desorb completely or can persist to some degree throughout the life of the tooth

Teeth that discolor are not necessarily necrotic, particularly when the color change occurs within a few days of the injury.

A yellowish discoloration of both primary and permanent teeth may occur if they undergo pulp canal obliteration

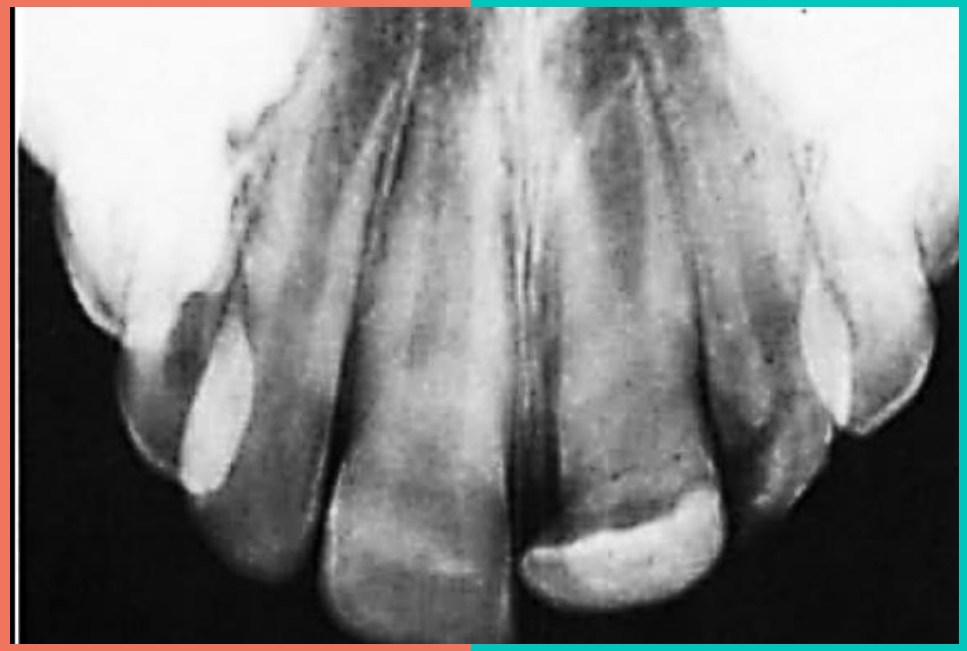
Pulp Canal Obliteration

The entire pulp chamber and canal appear radiopaque in radiographs and the crown may have a yellowish color.

Sequelae in Permanent Dentition after Trauma in Primary Dentition.

Enamel hypoplasia

- This includes discoloration of the enamel and or defects of the enamel surface.
- Discoloration usually ranges from white to yellowish-brown staining.
- The hypoplasia normally affects the labial crown surface and ranges from tiny spots to large areas.



Crown Dilaceration

- ✓ **A traumatic displacement of already formed hard tooth substance in relation to the developing soft tissues leads to a deviation of the crown in relation to the long axis of the tooth.**
- ✓ **A minor dilaceration consists of a circular enamel defect.**
- ✓ **The severe type includes a complete palatal deviation of the crown with additional enamel hypoplasia**

Odontome-like teeth

- Heavy trauma to the permanent tooth germ at an early stage of odontogenesis may lead to complete tooth deformation.
- Odontome-like disturbances of permanent teeth may develop especially after intrusive or luxation of primary teeth.
- On radiographs such malformed teeth present as a conglomeration of hard tissues resembling a complex odontome.
- As a rule such malformed teeth do not erupt and must be removed surgically.

Root Malformation

- Trauma to the epithelial root sheath of Hertwig during root development may lead to root dilaceration or to an arrest of root formation
- In the latter case a very short root may develop and tooth eruption will be delayed or completely disturbed.
- Other, but very rare, malformations include root duplication and lateral or vestibular root angulation

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Thank you