Dental trauma 4 - primary teeth

\*\*Management of injuries to the dental tissues

Infraction

* **Treatment:**
* No treatment necessary
* **Follow-up**
* No follow-up is needed

Enamel fracture

* **Treatment:**
* Smoothen sharp edges.
* In patients with lip or cheek lesions it is advisable to search for tooth fragments or foreign material.
* **Follow-up**
* No follow-up required.
* **Treatment:**
* Glass ionomer bandage as an emergency treatment to prevent microleakage.
* Remover GI bandage after a few days and restore the tooth with composite.

Clinical control at 3-4 weeks

Enamel-dentin-pulp fracture

* **Treatment:**
* Preserve pulp vitality by performing **pulpotomy** followed by composite restoration.

**This requires a cooperative patient, vital pulp, and healthy radicular pulp.**

* If performing a pulpotomy is not possible, **extraction** is the alternative option.
* **Follow-up:**
* Clinical after 1 week.
* Clinical and radiographic control after 6-8 weeks and 1 year.

Crown-root fracture

* **Treatment:**

Depending on the clinical findings, two treatment scenarios:

* If the fracture involves only a small part of the root and the stable fragment is large enough to allow coronal restoration, **remove the mobile fragment**.
* In all other instances, including when pulp is exposed, **extraction** is necessary.
* **Instruct the patient to:**
* have soft foods for 10-14 days.
* Preserve good OH by brushing with a soft toothbrush and application of 0.1% chx twice a day for a week.
* Alert parents to possible complications: swelling, increased mobility or fistula. Children may not report pain.
* **Follow-up:**
* Fragment removal only:
* Clinical control after 1 week.
* Clinical and radiographic control after 3-4 weeks.
* Clinical control after 1 year.
* Extraction:
* Clinical and radiographic control at 1 year and every year until eruption of the permanent successor.

Root fracture

* **Treatment:**
* If the coronal fragment is not displaced, **no treatment is required.**
* If the coronal fragment is mildly displaced and patient cooperation allows, consider **repositioning the tooth fragment**.
* In all other cases, **extract the coronal fragment** and leave the apical fragment to resorbed.
* **Follow-up:**
* Clinical control after 1 week. Clinical and radiographic control after 6-8 weeks and 1 year.
* In case of tooth extrcation: Clinical and radiographic control at 1 year and every year until eruption of the permanent successor.

Management of injuries to the periodontal tissues

Concussion

* **Treatment**
* **Instruct the patient to:**
* have soft foods for 10-14 days.
* Preserve good OH by brushing with a soft toothbrush and application of 0.1% chx twice a day for a week.
* Alert parents to possible complications: swelling, increased mobility or fistula. Children may not report pain.

Subluxation

* **Treatment**
* **Instruct the patient to:**
* have soft foods for 10-14 days.
* Preserve good OH by brushing with a soft toothbrush and application of 0.1% chx twice a day for a week.

Extrusion

* **Treatment:**

The treatment choice should be based on the degree of displacement, mobility, root formation and the ability of the child to cope with the emergency situation.

* For minor extrusion (< 3mm) in an immature developing tooth, either careful **repositioning** of the tooth or leave it for **spontaneous** **alignment**.
* **Extraction** is the treatment of choice for severe extrusion in a fully formed primary tooth.
* Patient instructions: soft diet, OH, monitor complications.

luxation

* **Treatment:**
* If there is no occlusal interference, the tooth should be allowed to **reposition** **spontaneously**.
* In cases with minor occlusal interference, **slight grinding** is indicated.
* When there is occlusal interference local anaesthesia should be applied where after the tooth should be **repositioned** by gentle combined labial and palatal pressure.

Intrusion

* **Treatment:**
* If the apex is **displaced toward or through the labial bone plate**, the tooth should be left for **spontaneous repositioning**. In order to evaluate re-eruption, the degree of intrusion should be assessed by measuring the distance between the incisal edge of the intruded tooth and that of adjacent unaffected teeth.
* If the apex is **displaced into the developing tooth germ** the tooth should be **extracted** to minimize the damage done to the permanent successor.

Avulsion

* If you cant account for the avulsed teeth, it is highly recommended to make a radiographic examination in order to ensure that the missing tooth is not a case of complete intrusion or root fracture with loss of the coronal fragment.
* If the avulsed tooth has not been found refer the child to the paediatrician to exclude aspiration.

Management of alveolar fracture

* Reposition the displaced segment manually or using forceps (**General anaesthesia is often indicated**).
* Stabilize the segment with flexible splinting for **4 weeks**.
* Give the patient instructions: **soft diet**, **OH**, **monitor complications**.

Sequelae of injuries to the primary dentition

Trauma to the primary teeth can result in damage to the pulp, periodontal tissues or developing permanent dentition.

Pulpal necrosis

Pulpal obliteration

Root resorption

Injuries to the developing permanent teeth

* Reported to occur in 12-69% of primary tooth trauma.
* The **type**, **location**, and **severity** of the disturbance will depend on the **age** at which the injury happened in addition to the **type** and **severity** of the trauma.
* **Intrusion** is the most likely to cause a disturbance.
* **Avulsion** can cause damage if the apex of the primary tooth moved towards the developing tooth bud before the avulsion.

\*\*Enamel hypomineralization/hypoplasia

\*\*Dilaceration

\*\***Disturbances in eruption**

\*\***Odontoma-like malformations**

\*\***Root duplication**

\*\***Partial or complete arrest of root formation**