

Avulsions (Exarticulation)

Definition: Displacement of tooth from its socket. (ICD S03.2).

Etiology: Direct trauma to anterior teeth, mostly central incisors.
F. ex. Sport injuries, and fights (in permanent) while falls against hard object is common in deciduous.

Incidence: Children between 7 and 9 years old. 7 to 13 % in primary dentition and 0, 5 to 16 % in secondary (permanent) dentition.

Clinical finding: Mostly is the maxillary incisors, while the mandibular teeth is seldom damaged. Periodontal ligament at this age provides minimal resistance to an extrusive force.

Radiographic finding: x-ray is important for examination if there is bone damage. In primary dentition, the *Intrusion* is misdiagnosed as avulsions.



Pathology: The pathology of tooth replantation divided into pulpal and Periodontal reaction.

Treatment: Replantation should be done at the site of injury after rinsing in running cold water for 10 second.

After injury, the periodontal and pulp tissue begin to suffer ischemic injury. Exposure to drying, bacteria and chemical irritants can kill the PDL and pulp cells. The treatment outcome is depend on drying time and storage media. If the extra alveolar period is less than 1h, partial or complete healing can occur. PDL death can be expected after more than 1h.

After replantation with gentle pressure, a splint should be adapted to fix the tooth to neighbour teeth. The splint should be removed after one week.

Antibiotics and tetanus prophylaxis is important in this case. When revascularization of pulp tissue is not expected, root canal treatment should be started before splint removal.

Healing: Healing is divided in to pulpal healing and periodontal healing. Periodontal healing is divided into:

1. healing with a normal periodontal ligament
2. healing with surface resorption.
3. healing with ankylosis (Replacement resorption).
4. healing with inflammatory resorption.

Pulpal healing is depend on the age, length of the dry extra- alveolar period, and the width of apical foramen.