The Injured Primary Tooth: information for dentists

Crown/Pulp Trauma

Crazing, Enamel fracture, Enamel and dentin fracture, Pulp exposure

Treatment is dependent on the extent of the fracture: observation, smoothing, glass ionomer/composite resin restoration, vital pulp treatment or extraction. Pulp exposure: extraction or pulp treatment and crown build-up if patient is over 18 months, co-operation is good and there is no radiographic evidence of root fracture or physiologic root resorption.

Root/Crown-Root Trauma

Root fracture

Treatment is observation or, if crown is dislocated or mobile, extraction. Apical root fragments of **vital** teeth **< 2-3 mm** may be left to resorb. In all other primary root fractures, an attempt should be made to remove the root tip and protect the permanent tooth. Fragments of root from non-vital teeth should be removed.

Crown-Root Fracture

Treatment is generally extraction. The decision whether or not to extract root tips is the same as for root fractures.

Periodontal tissues

Concussion

Mobility is normal but tooth may be tender to percussion or sensitive to chew with. Examine the tooth clinically and radiograph 3 months post-injury. If the pulp becomes necrotic the tooth should be extracted.

Subluxation

Tooth is mobile but not displaced. Record mobility and take 1 radiograph at the time of injury. Examine the tooth clinically and radiograph at 3, 6 and 12 months post-injury. Record crown color (normal, yellow/brown, blue/gray, pink) at each appointment. If the pulp becomes necrotic the tooth should be extracted.

Luxation Injuries

Principles that govern repositioning:

1. Above all, the tooth/teeth must meet the criteria described for retention. *No root fracture, no excessive physiological resorption, no medical contraindications, sufficient cooperation to allow safe treatment*
2. It must be possible to reposition so that the tooth is not in traumatic occlusion.
3. It must be possible to reposition to an esthetically acceptable result.
4. The accident must have been recent enough that the tooth and periodontium are still in an early enough stage of healing that repositioning is 'reasonable' (<24hours).

Extrusion

Record amount of extrusion (mm) and take a radiograph at the time of the injury. The retention/observation decision is based upon parental preferences and risk of spontaneous exfoliation. Reduce the extrusion manually and stabilize or extract. Follow-up as described.

Luxation (labial or lingual displacement of crown)

By definition the tooth is immobile. Note crown position, labial or lingual, (mm). Labial luxations are more serious due to the proximity of primary root tips to developing permanent incisors. Correct traumatic occlusion. Extraction is acceptable if luxation >3mm or if root is through labial bone. Radiograph (1 periapical) at the time of injury. Follow-up/possible extraction as described.

Intrusion

Record amount of intrusion. Radiograph as above. Uncomplicated intrusions <3mm may be observed for expected repositioning and intrusions >3mm may be extracted due to proximity of the developing permanent incisors.

Principles that govern extraction:

1. Intrusions almost always have a lateral component. We would extract the combination of intrusion >4 mm and lateral displacement >3 mm
2. Incisors with root tips palpable through the labial bone may be extracted. If observation is the choice it is not necessary to re-adapt the labial bone
3. Incisors with root tips that approximate permanent incisors are extracted on presentation.
4. This leaves a range of luxation injuries that have no outcome information. Here the decision is between parent and dentist and factors include: *root fracture, excessive physiological resorption, medical contraindications and sufficient cooperation to allow safe treatment.*

Avulsion

Radiograph to determine if the tooth has been avulsed. It may have been completely intruded (>6mm). Observe the radiograph for any remaining root fragments. ***Do not replant an avulsed primary tooth.*** If the tooth cannot be found and the parent/guardian does not know where it is, arrange a medical consultation to rule out aspiration.

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