

قالوا سبحانك لا علم
لنا إلا ما علمتنا إنك
أنت العليم الحكيم

Dental Trauma in Children

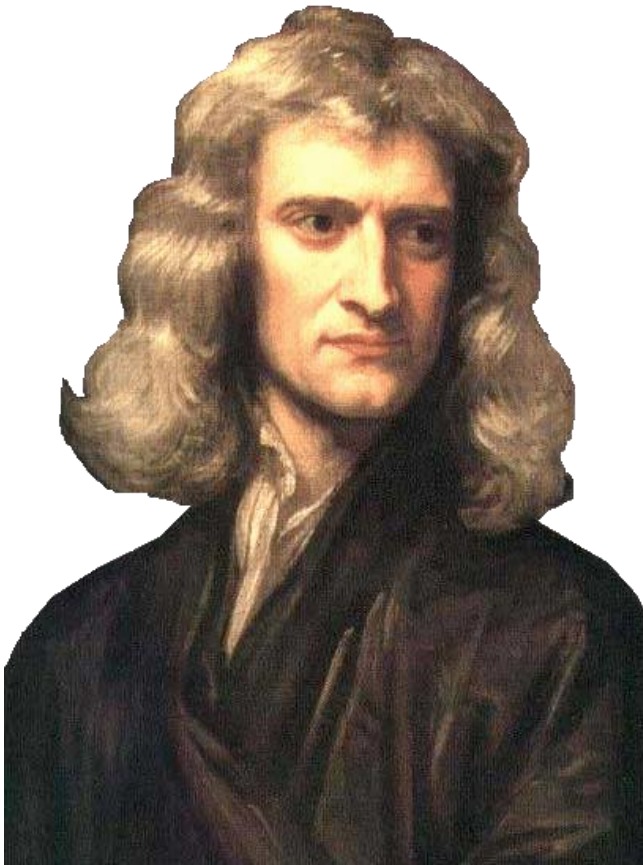
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The man on the pound



Isaac Newton



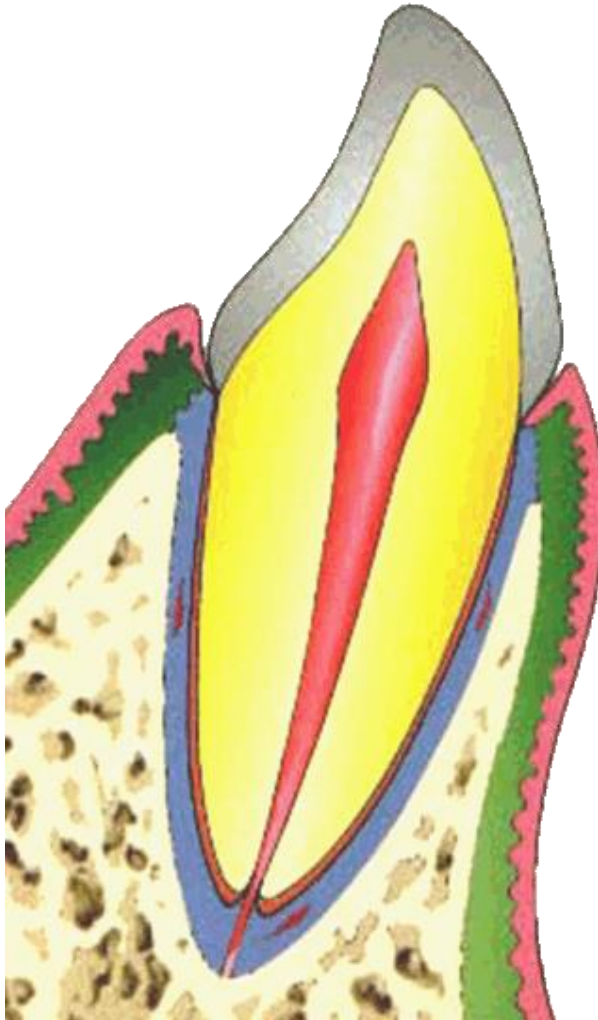
- **Every object in a state of uniform motion tends to remain in that state of motion unless an external force is applied to it.**

What if he was sitting under one of our palm trees in our campus 😊



- **Every object in a state of uniform motion tends to remain in that state of motion unless a tooth forces it to stop!!!!**

II



**Ping
Pong**

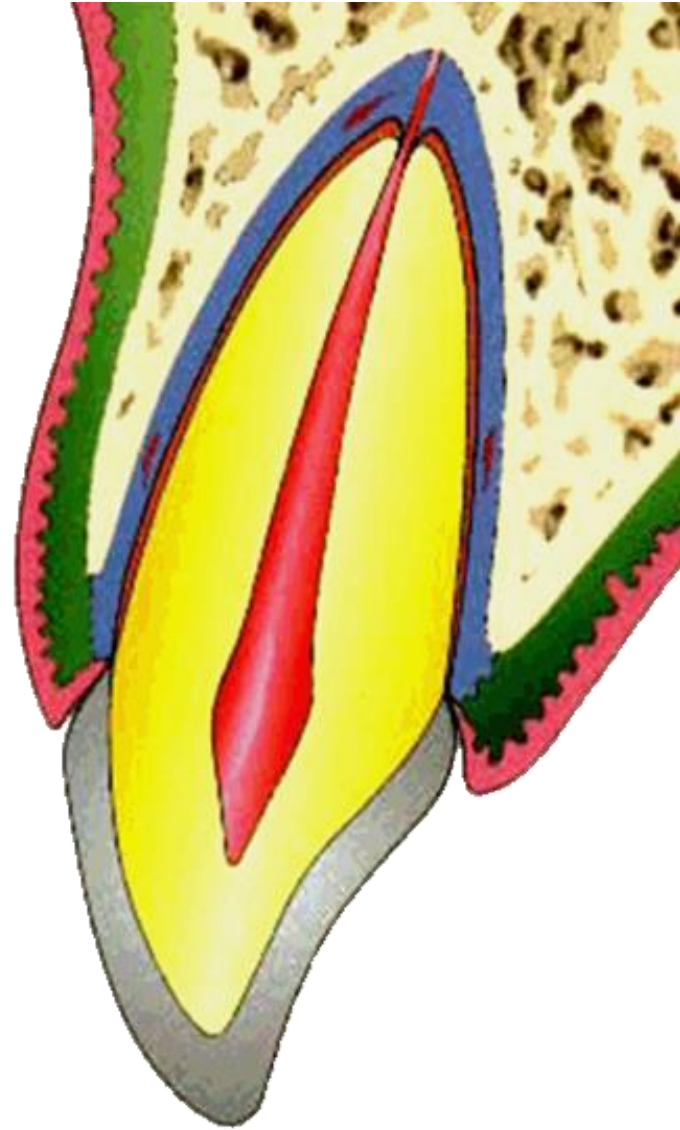
- The relationship between an object's mass m , its acceleration a , and the applied force F is:

$$F = m \times a .$$



III

- For every action there is an equal and opposite reaction .



Epidemiology of dental trauma (how big is the problem!!!)

- **Prevalence** : By 7 years of age 30% of children exhibited trauma to the deciduous dentition (J. O. **Andreasen** 1981). (Andreasen runs the website dentaltraumaguide.org)
- **Incidence**:
 1. In the primary dentition it is approximately 5% of new cases per year.
 2. There is an increase from 1 year to a peak at 2 years of age (J. O. Andreasen 1981).



Who is at risk? (Predisposing Factors)

- Class II division I
- Over jet 3–6 mm frequency of trauma is double
- Over jet > 6mm there is a threefold increase in risk
- Physical/Medical conditions
- Accident prone children



How Complicated is the Problem !!!

Surprise!!!

Psychological Concerns

Legal Concerns

~~Neurology problems???~~

Soft Tissue Involved

Jaw Fracture ?



The very beginning is a good place to start



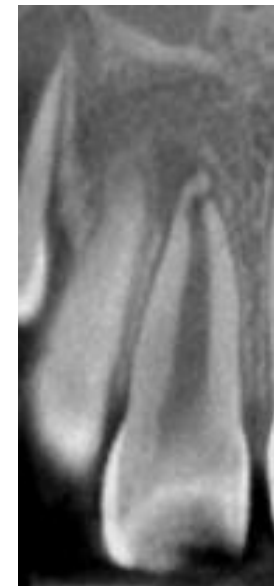
W

WASH

- Where did it happen?
- Where is the tooth/tooth fragment?
- Was there an unconscious state?
- Was there a previous trauma at the same site?



Tooth fragments
inside the lip



Repeated trauma
on same site

SCRABBLE



Decision for Tetanus

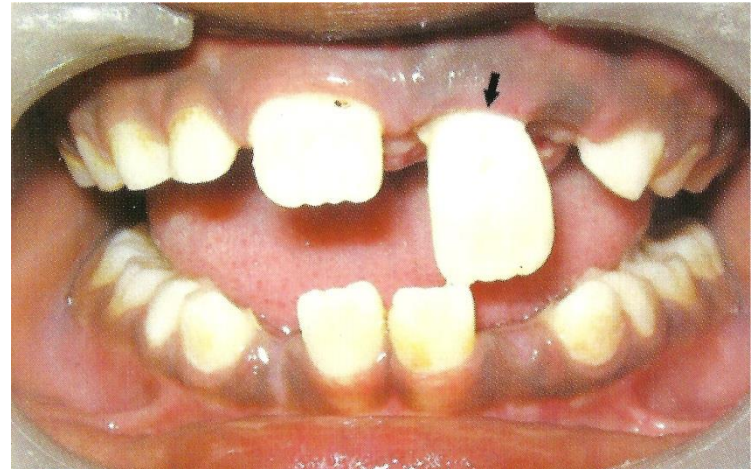


- **V**accination history
 - 3 doses or more (no need)
 - Less than 3 doses (Vaccination is advisable).
less than 5 Years ago (no need)
 - More than 5 Years ago (Vaccination is advisable).
- **W**ound
 - minor (no need) or big (Vaccination is advisable).
 - clean (no need) or soiled (Vaccination is advisable).

These are factors to help you decide

w A sh

- Articulation
“Any disturbance in
biting?”



wa S h

- Sensitivity? To hot or cold !

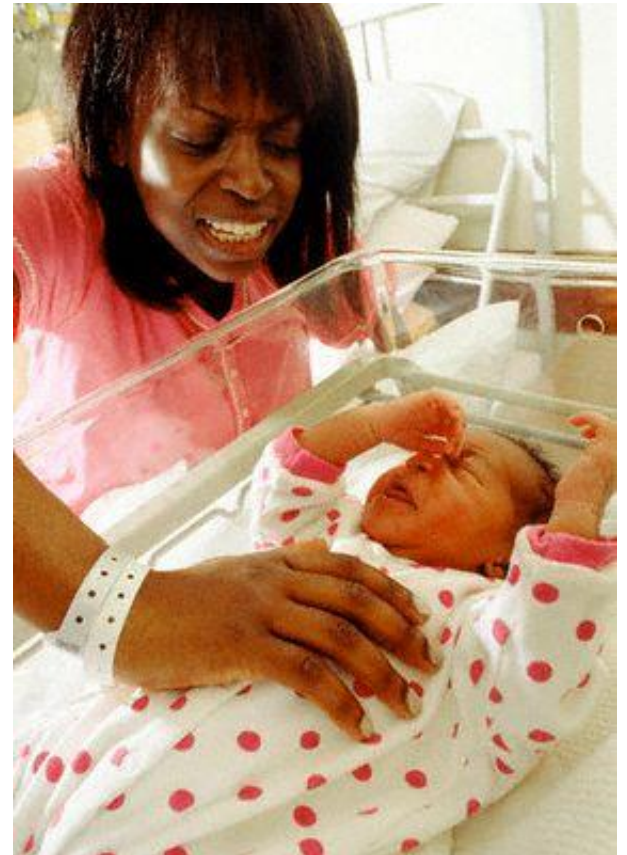


Exposed Dentin

was H

- How did it happen? OR
How Isaac Newton did it
????

**Remember the
medicolegal aspect
here!! (some parents
are not ready for
parenting)**



Clinical Examination



MP3



MP3

Clinical examination

MP3

- **M**obility test.
- **P**ercussion.
- **P**ulp testing.
- **P**eri apical/ **P**anoramic Radiography.

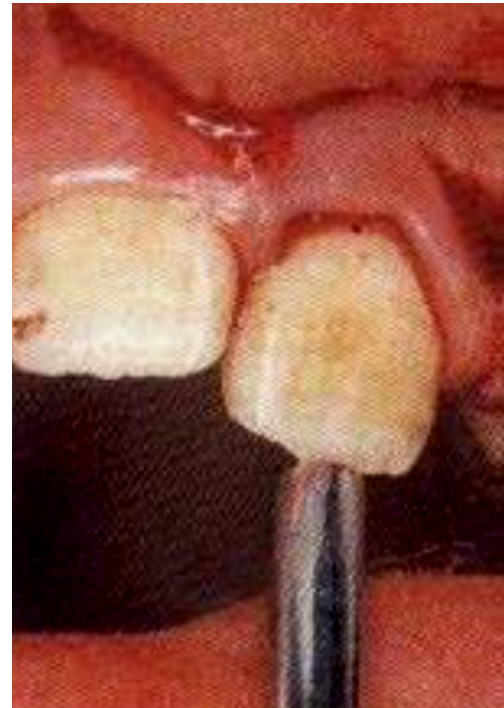
MP3 (M PPP)

- Mobility should be tested in vertical and horizontal directions.
- Use your eyes and fingers.



MP3 (M **P** PP)

- **P**ercussion should be done on an apparently normal tooth first.
- **P**ercussion should be done vertically and horizontally.
- Look for Pain reaction & sound!!!



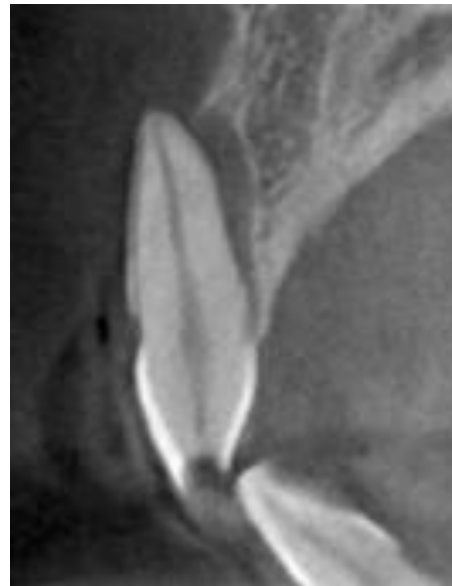
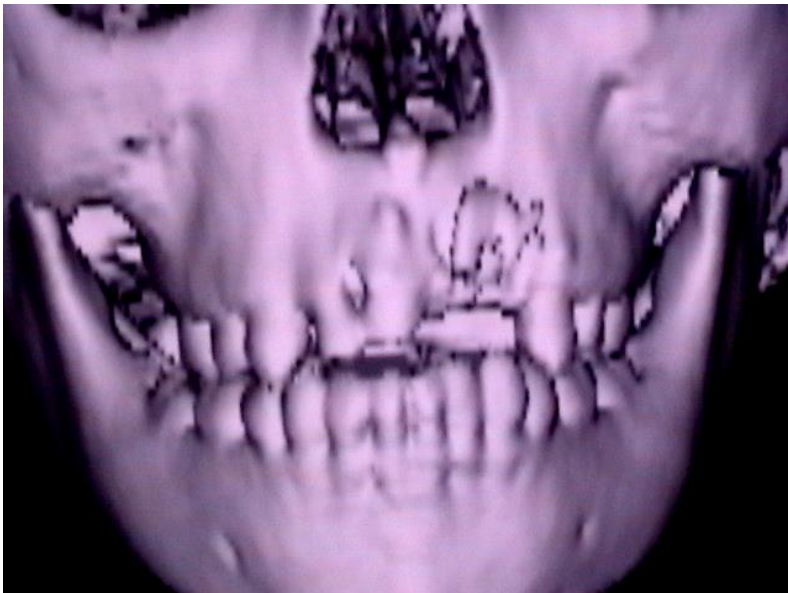
MP3 (MP **P** P)

- **P**ulp testing, should be started with an apparently normal tooth
- Limitations of pulp testing? (sometimes we get false +ve and false -ve).



MP3 (MPP **P**)

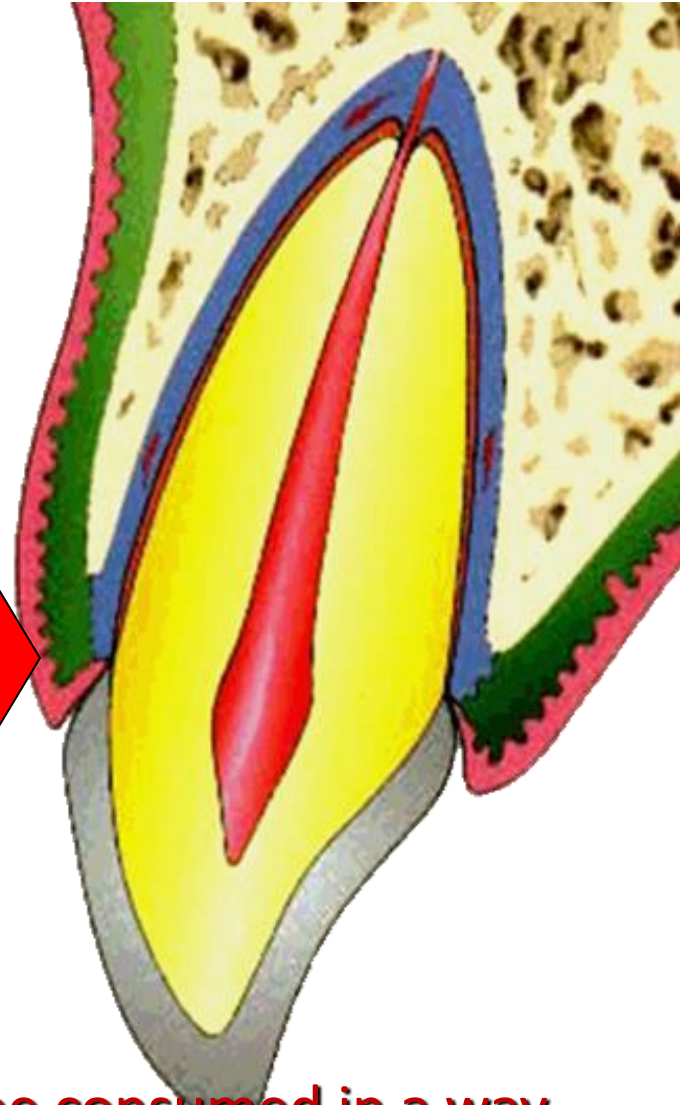
- Peri apical, Panoramic and 3D....



Diagnosis



Energy can not be created
nor destroyed.



**The energy within the impact should be consumed in a way
or another!!!**

Concussion

Management

- Careful observation and watchful follow up.
- NSAID
- Good oral hygiene.
- Inform parents about future possibilities.



Subluxation



Clinical Picture

Bleeding crevice if the child is seen early.

Slight mobility.

No displacement.



Subluxation management

Management (same as concussion)

- Careful observation and watchful follow up.
- NSAID
- Good oral hygiene.
- Inform parents about future possibilities.

Luxation

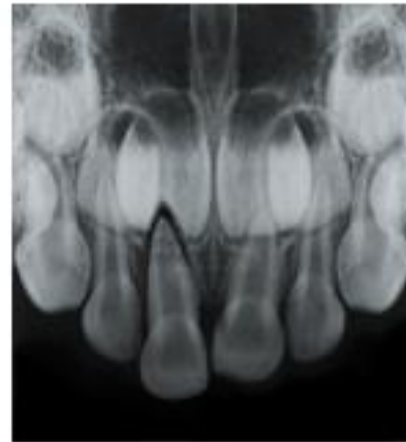


Clinical picture

Tooth appears separated out of its socket.

Bleeding crevice.

Loosenes.



Luxation management



Decided to keep it? (same like concussion)

- Careful observation and watchful follow up.
- NSAID
- Good oral hygiene.
- Inform parents about future possibilities.

Lateral luxation



No collision with permanent tooth bud



Collision with permanent tooth bud



Clinical picture

- Alveolar bone fracture.
- Tooth inclined palatal and firm. OR inclined labial and loose.
- Bleeding crevice.

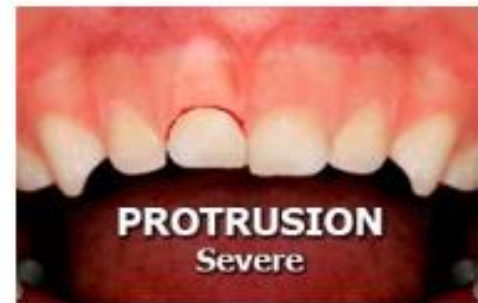
Lateral Luxation (management)



Spontaneous
repositioning



Repositioning



Extraction

Management if you decide to keep it

- Careful observation and watchful follow up.
- NSAID
- Good oral hygiene.
- Inform parents about future possibilities.

Intrusion



No collision with permanent tooth bud



Collision with permanent tooth bud



Clinical picture

- Infra occlusion firm incisor.
- Alveolar bone fracture.
- Bleeding crevice.

Intrusion (management)



Decided to keep it?

- Careful observation and watchful follow up.
- NSAID
- Good oral hygiene.
- Inform parents about future possibilities.

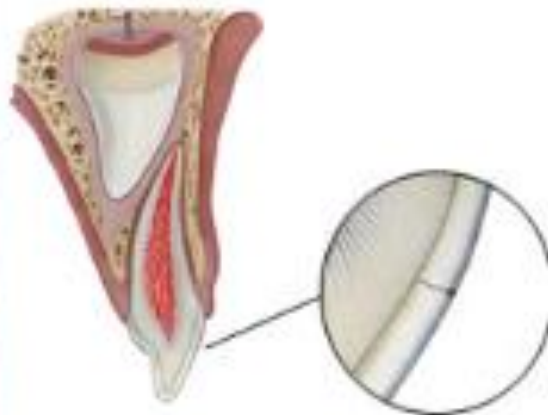
Avulsion



**Do NOT attempt to replant
Remember if the tooth is not
found in the vicinity of
the accident, do a chest X-ray
To verify it is not inhaled inside
the air way.**



Infarction



Enamel Fracture



Enamel & Dentine without pulp involvement management (Video)



CLEAN WITH WATER

DVDVideo
Free version

ENAMEL-DENTIN FRACTURE

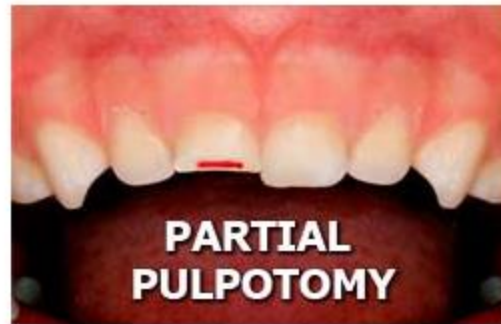
TREATMENT

- Clean the area with water spray, saline, or chlorhexidine
- Disinfect with sodium hypochlorite or Peridex
- As an emergency treatment glass ionomer cement can be applied : temporary coverage
- Restore with composite resin (if glass ionomer cement was applied remove it before restoration)

FOLLOW-UP

- Clinical and radiographic controls after 6-8 weeks and 1 year.

Enamel-Dentine with pulp involvement (management)



Management (Video)



ENAMEL-DENTIN-PULP FRACTURE

Pulp capping

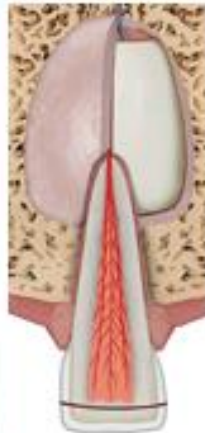
TREATMENT

- Apply local anesthesia
- If possible isolate tooth with rubber dam
- Clean the area with water spray, saline, or chlorhexidine
- Disinfect with sodium hypochlorite or Peridex®
- Apply pulp capping material (calcium hydroxide compound or white mineral trioxide aggregate (MTA))
- Seal exposed dentin with glass ionomer cement or composite resin
- Restore with composite resin

FOLLOW-UP

- Clinical and radiographic controls after 1 week, 6-8 weeks and 1 year.

Crown-root without pulp involvement



Extraction. OR

GIC and Composite. OR

Zircon pedo crowns. (the last two are personal experience!)



Crown-root with pulp involvement



Extraction. OR

Pulpotomy and GIC and Composite. OR

Pulpotomy and Zircon pedo crowns. (The last two are personal experience)

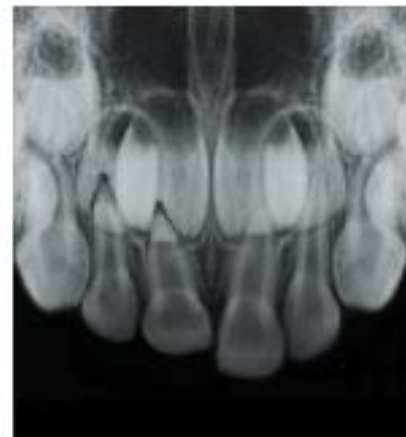


Root fracture

Extraction.



Alveolar bone fracture



Management video showing how to reposition the bone segment with your fingers



Clean the area with water spray, saline or chlorhexidine

ALVEOLAR FRACTURE

Treatment

- Clean the area with water spray, saline or chlorhexidine
- Apply local anesthesia
- Reposition segment
- Application and removal of splint

Follow-up

Clinical examination after 1 week. Clinical and radiographic control after 3-4 weeks, 6-8 weeks

DVDVideosS
Free version

The image is a screenshot from a medical video. On the left, a clinical photograph shows a patient's upper teeth with a visible fracture in the alveolar bone. A blue surgical spray is being applied to the wound site. A watermark 'DVDVideosS Free version' is overlaid on the image. On the right, a white text box contains the title 'ALVEOLAR FRACTURE' and a list of treatment steps: 'Clean the area with water spray, saline or chlorhexidine', 'Apply local anesthesia', 'Reposition segment', and 'Application and removal of splint'. Below this, a 'Follow-up' section states: 'Clinical examination after 1 week. Clinical and radiographic control after 3-4 weeks, 6-8 weeks'.

Had enough?



Please don't trust Isaac Newton with our kids