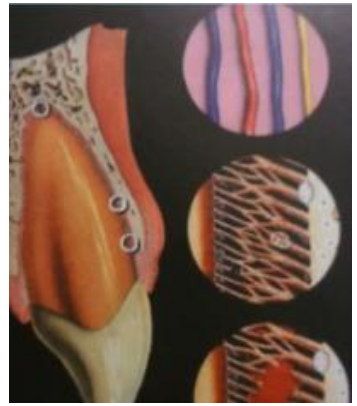

به نام یگانه بی همتا


Concussion
Subluxation
LUXATION INJURIES
Intrusive luxation
Lateral luxation
Extrusive luxation

# CONCUSSION

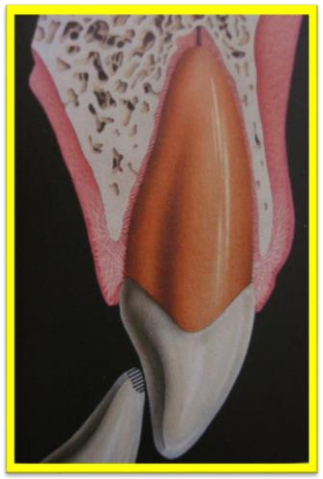
**Clinical findings**

- **implies no displacement**
- **normal mobility**
- **The tooth is tender to percussion and touch**
- **Sensibility tests are likely to give positive results**



## Radiographic findings

- No radiographic abnormalities



## Treatment

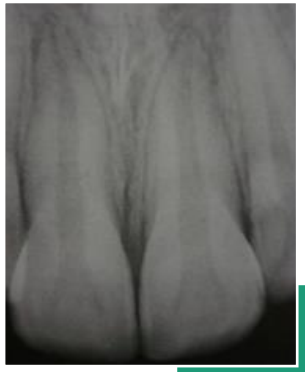
- No treatment is needed
- Monitor pulpal condition for at least one year

# Subluxation

## Clinical findings

- implies sensitivity to percussion
- Increased mobility
- no displacement
- Bleeding from gingival crevice may be noted
- Sensibility testing may be negative initially indicating transient pulpal damage

## Radiographic findings



- Radiographic abnormalities are usually not found

## Treatment

- Normally no treatment is needed
- A passive and flexible splint to stabilize the tooth for up to 2 wk may be used but only if there is excessive mobility or tenderness when biting on the tooth
- Monitor the pulp condition for at least one year, but preferably longer

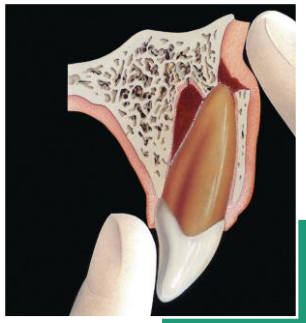
# Lateral luxation

## Clinical findings

- The tooth is displaced, usually in a palatal/lingual or labial direction
- There is usually an associated fracture of the alveolar bone
- The tooth is frequently immobile as the apex of the root is “locked” in by the bone fracture
- percussion usually gives a high, metallic (ankylotic) sound
- Sensibility tests will likely give negative results

## Radiographic findings

- A widened periodontal ligament space which is best seen on radiographs taken with horizontal angle shifts or occlusal exposures



## Treatment

- Reposition the tooth digitally or with forceps to disengage it from its bony lock and gently reposition it into its original location.
- Stabilize the tooth for 4 weeks using a flexible splint.
- Monitor the pulpal condition.
- If the pulp becomes necrotic, root canal treatment is indicated to prevent root resorption

# EXTRUSIVE LUXATION

## Clinical Findings

- The tooth appears elongated and is excessively mobile.
- Sensibility tests will likely give negative results.

## Radiographic findings

- Increased periodontal ligament space both apically and laterally
- Tooth will not be seated in its socket and will appear elongated incisally

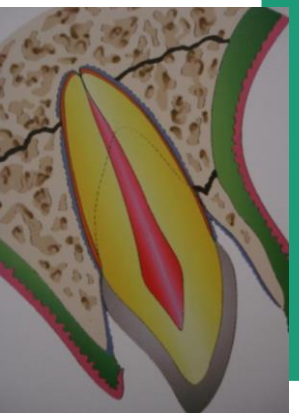
## Treatment

- Reposition the tooth by gently re-inserting It into the tooth socket under local anesthesia
- Stabilize the tooth for 2 wk using a passive and flexible splint. If breakdown/fracture of the marginal bone, splint for an additional 4 wk
- Monitor the pulp condition with pulp sensibility tests
- If the pulp becomes necrotic and infected, endodontic treatment appropriate to the tooth's stage of root development is indicated

# INTRUSIVE LUXATION

## Clinical findings

- The tooth is displaced axially into the alveolar bone.
- It is immobile and percussion may give a high, metallic (ankylotic) sound.
- Sensibility tests will likely give negative results.



## Radiographic findings

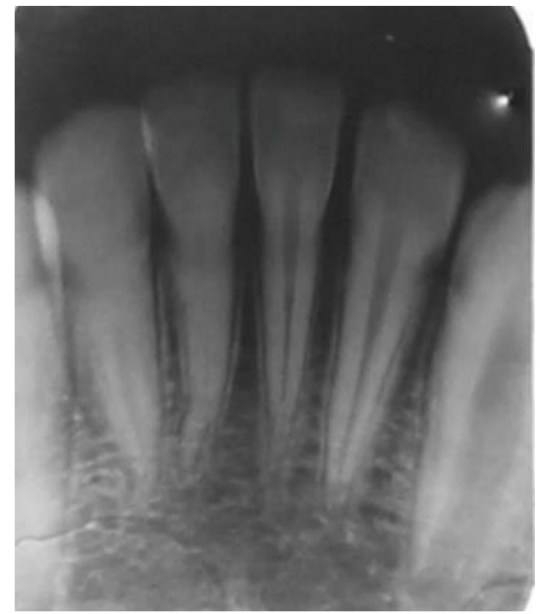
- The periodontal ligament space may be absent from all or part of the root.
- The cemento-enamel junction is located more apically in the intruded toot than in adjacent non-injured teeth, at times even apical to the marginal bone level.

# INTRUSIVE LUXATION

- Treatment
  - Teeth with incomplete root formation
    - Allow re-eruption without intervention (spontaneous repositioning) for all intruded teeth independent of the degree of intrusion
    - If no movement within 4 wk, initiate orthodontic repositioning
    - Monitor the pulp condition.
  - Teeth with complete root formation
    - Allow re-eruption without intervention if tooth intruded less than 3mm. If no movement after 2-4 weeks, reposition surgically or orthodontically before ankylosis can develop.
    - If tooth is intruded 3-7 mm, reposition surgically or orthodontically.
    - If tooth is intruded beyond 7mm, reposition surgically.
    - The pulp will likely become necrotic in teeth with complete root formation. Root canal therapy using a temporary filling with calcium hydroxide is recommended and treatment should begin 2-3 weeks after repositioning.
    - Once an intruded tooth has been repositioned surgically or orthodontically, stabilize with a flexible splint for 4 weeks.

# Lateral luxation

Flexible splint made with resin composite and 0.7mm orthodontic wire onto the labial surface of the teeth involved and the immediately adjacent teeth



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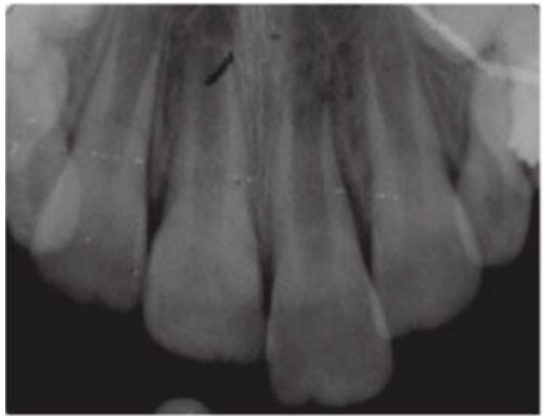
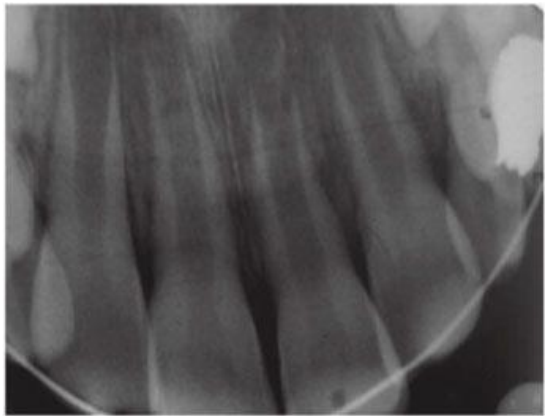




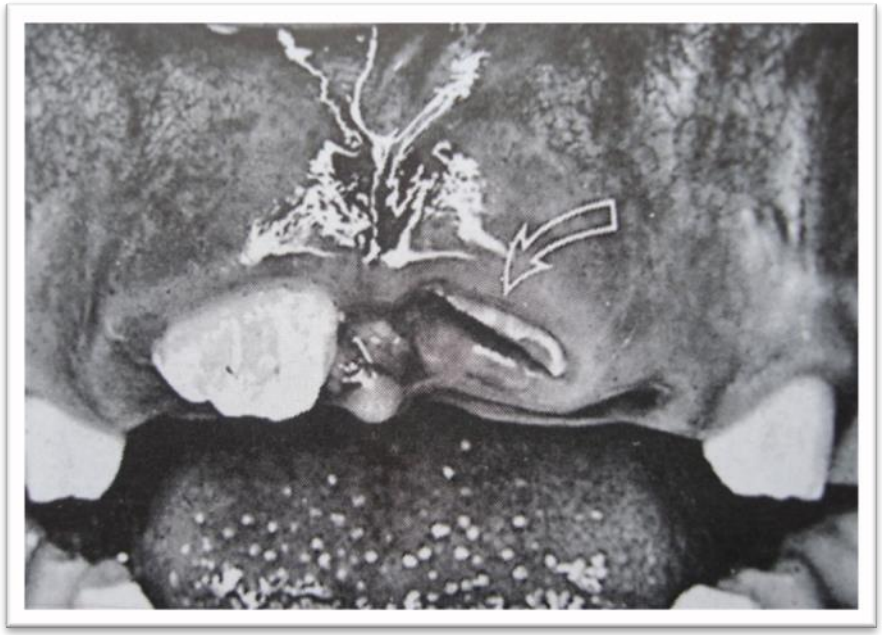
# INTRUSIVE LUXATION


6-month follow-up


12-month follow-up


24-month follow-up

# INTRUSIVE LUXATION



# Avulsion of permanent teeth

# FIRST AID FOR AVULSED TEETH AT THE PLACE OF ACCIDENT

- Immediate replantation of the avulsed tooth is the best treatment
- using different types of storage media.

# FIRST AID FOR AVULSED TEETH AT THE PLACE OF ACCIDENT

1. • Keep the patient calm
2. • Find the tooth and pick it up by the crown (the white part). Avoid touching the root
3. • Attempt to place it back immediately into the jaw.
4. • The patient should bite on gauze, a handkerchief or a napkin to hold it in place.
5. • Place the tooth, as soon as possible, in a storage or transport medium
6. • See a dentist or dental professional immediately

# TREATMENT GUIDELINES FOR AVULSED PERMANENT TEETH

The choice of treatment is related to the maturity of the root (open or closed apex)

The condition of the periodontal ligament (PDL) cells

## Assess the condition of the PDL cells by classifying the avulsed tooth into one of the following three groups before commencing treatment:

1. The PDL cells are most likely viable. The tooth has been replanted immediately or within a very short time (about 15 minutes) at the place of accident.

2. The PDL cells may be viable but compromised. The tooth has been

kept in a storage medium (eg, milk, HBSS, saliva, or saline, and the total extra-oral dry time has been <60 minutes).

3. The PDL cells are likely to be non-viable. The total extra-oral dry time has been more than 60 minutes, regardless of the tooth having been stored in a medium or not.

# Treatment guidelines for avulsed permanent teeth with closed apex

# The tooth has been replanted before the patient's arrival at the clinic

1. Clean the area with water spray, saline or chlorhexidine
2. Verify the correct position of the replanted tooth both clinically and radiographically
3. Leave the tooth/teeth in place (except where the tooth is malpositioned)
4. Apply a flexible splint for up to 2 weeks
5. Suture gingival lacerations, if present
6. Administer systemic antibiotics
7. Check tetanus protection
8. Give patient instructions
9. Initiate root canal treatment 7–10 days after replantation and before splint removal

# The tooth has been kept in a physiologic storage medium or osmolality balanced medium and/or stored dry, the extraoral dry time has been less than 60 minutes

1. If there is visible contamination, rinse the root surface with a stream of saline or osmolality-balanced media to remove gross debris.
2. leave the tooth in a storage medium while examining the patient, and preparing the patient for the replantation
3. Administer local anesthesia, preferably without a vasoconstrictor.
4. Irrigate the socket with saline and Examine the alveolar socket
5. Replant the tooth slowly with slight digital pressure. Do not use force
6. Stabilize the tooth for 2 weeks using a passive, flexible wire
7. Suture gingival lacerations, if present
8. Apply a flexible splint for up to 2 weeks, keep away from the gingiva
9. Administer systemic antibiotics
10. Check tetanus protection
11. Give patient instructions
12. Initiate root canal treatment within 2 weeks after replantation

# Extra-oral dry time longer than 60 minutes

1. Remove attached non-viable soft tissue
2. Administer local anesthesia, preferably without vasoconstrictor
3. Irrigate the socket with saline and Examine the alveolar socket
4. Replant the tooth and Verify normal position of the replanted tooth clinically and radiographically
5. Stabilize the tooth for 2 weeks using a passive flexible wire
6. Suture gingival lacerations, if present
7. Root canal treatment should be carried out within 2 weeks
8. Administration of systemic antibiotics
9. Check tetanus protection
10. Give patient instructions
11. Initiate root canal treatment within 2 weeks after replantation

# Treatment guidelines for avulsed permanent teeth with an open apex

# The tooth has been replanted before the patient's arrival at the clinic

1. Clean the area with water spray, saline or chlorhexidine
2. Verify the correct position of the replanted tooth both clinically and radiographically
3. Leave the tooth/teeth in place (except where the tooth is malpositioned)
4. Apply a flexible splint for up to 2 weeks
5. Suture gingival lacerations, if present
6. Administer systemic antibiotics
7. Check tetanus protection
8. Give patient instructions
9. Pulp revascularization is the goal when replanting immature teeth in children
10. If spontaneous revascularization does not occur, apexification, pulp revitalization or root canal treatment should be initiated as soon as pulp necrosis and infection is identified

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