

PROXIMAL TIBIAL FRACTURE IN PEDIATRIC

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1) Is incidence of proximal tibial physis fx high ?

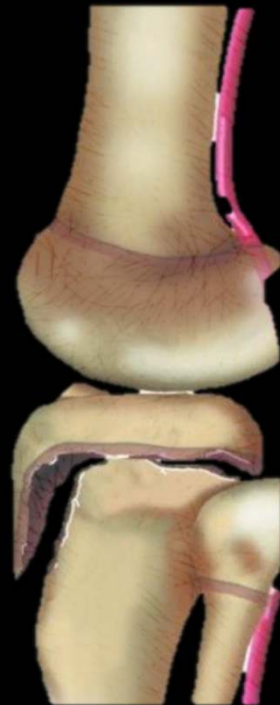
- ✓ low because of physeal stability
- ✓ high energy trauma (1% of physeal injury)

- ✓ The **superficial MCL** extends distal to the physis inserting into the medial metaphysis (***medial buttress***)
- ✓ The LCL inserts on the proximal pole of the fibula and the fibula (***lateral buttress***)
- ✓ ***Anteriorly***, patellar ligament ***attaches to the secondary ossification center of the tibial tuberosity*** & draped over the metaphysis serving as a ***constraint to posterior displacement***

2) What is common displacement ?

- displacement of physis is always Ant ,AntMed, AntLat

- ***Despite the fact that most purely physeal fractures displace anteriorly,*** hyperextension force result metaphysis portion of the tibia **displacing posteriorly** toward the popliteal artery, can result in vascular injury



3) How can minimal or nondisplaced physeal injury diagnosed in X-ray?

1. stress view
2. soft tissue obliteration
3. impossible

3) How can minimal or nondisplaced physeal injury diagnosed in X-ray?

- **Associated hemarthrosis** can be only indication of fracture and is primarily recognized by **identifying an obliteration of the fat planes**



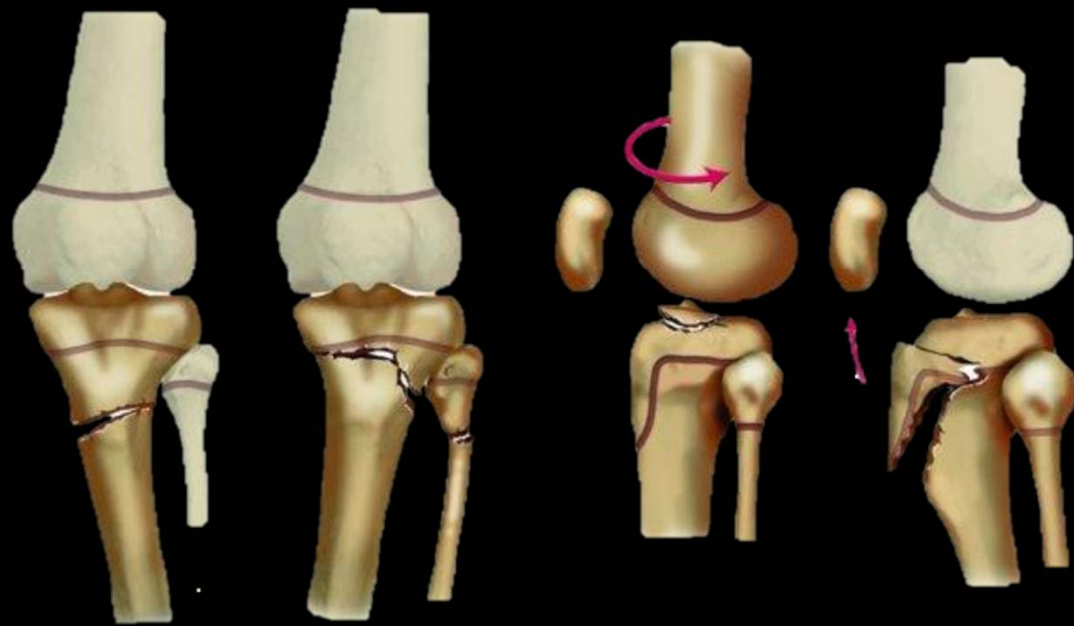
- **Stress views** can often differentiate a *proximal tibial physeal fracture* from a *ligament injury*, but there is **potential risk for physeal injury**

4) What is the best imaging for differentiating lig injury and physeal fracture ?

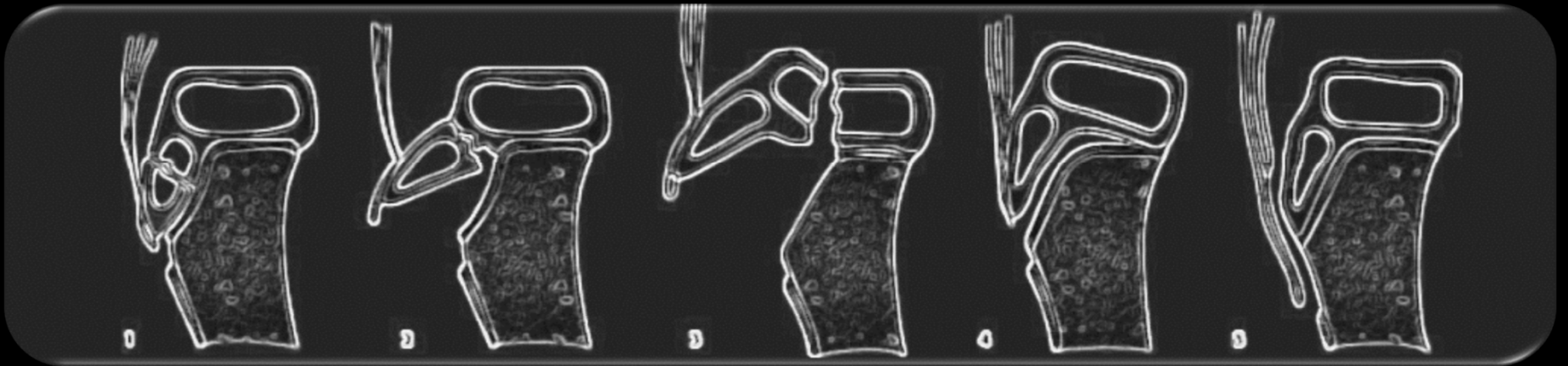
- MRI

5) What is the best classification ?

1)



2)



3)

- *Salter–Harris classification*

6) What is the indication for nonoperative treatment ?

- *minimally displaced (<2 mm)* can often be treated with CR

should have a low threshold for operative fixation

7) What is the maneuver for CR?

- Traction during the reduction maneuver **will reduce the risk of physical damage**. (90% traction, 10% leverage)

8) Do you prefer to recreate deformity?

- *re-create the deformity during reduction may injure the physis*

9) How can increase the rate of success in CR?

- Prior to CR , ***tense knee effusion*** *aspirated* followed by an *injection of 2 to 5 mL of either 0.5% bupivacaine*

- **GA** should be employed, to ensure ***adequate muscle relaxation*** and ***protection of the physis***

10) Do you prefer to discharge patients after CR?

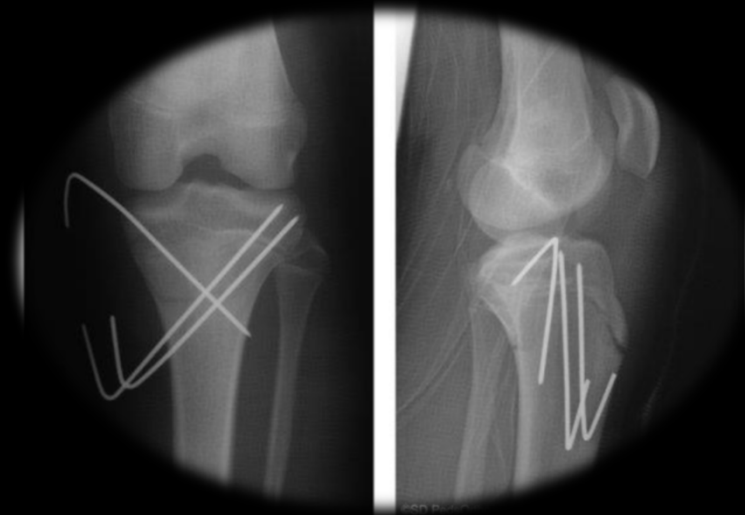
- After **cast in extension** the child is then admitted to the hospital for observation and gentle elevation to monitor for the possibility of ***vascular injury and compartment syndrome, even in seemingly minimally displaced fractures.***

11) What is indication for ORIF ?

- Fractures that cannot be anatomically reduced for removal of soft tissue interposition
- when a vascular repair is necessary.
- all *type III and IV displaced injuries with intra-articular extension*

12) What is device of choice ?

- smooth K-wires to minimize the risk of iatrogenic growth plate injury.
- *leaving the pins extra articular*, to help prevent septic joint from a pin tract



13) When CT scan is necessary ?

1. No where
2. any where

- *CT scan can help define if there is intra-articular involvement*

14) Do you change your treatment plan if CT scan shows intraarticular involvement ?

- should plan on for *either open or arthroscopic visualization of the joint surface*

15) Do you do prophylactic fasciotomy in these fracture ?

➤ Yes

➤ No

❖ In CRIF no but observe

❖ In ORIF yes

16) do you add anything?

17) Thank you for your attention

18) Ask you questions