

More than “Just a Calf Strain”



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Case Presentation

Chief Complaint: Right Calf Pain

History of Presenting Illness:

- 11 y/o male presents for lateral right calf pain while transitioning from three-point shot to defense
- Persisting pain and limited activity for 2 weeks
- Intermittent and achy
- Near lateral gastrocnemius muscle
- Repetitive jumping with weighted bands

Pertinent Physical Exam

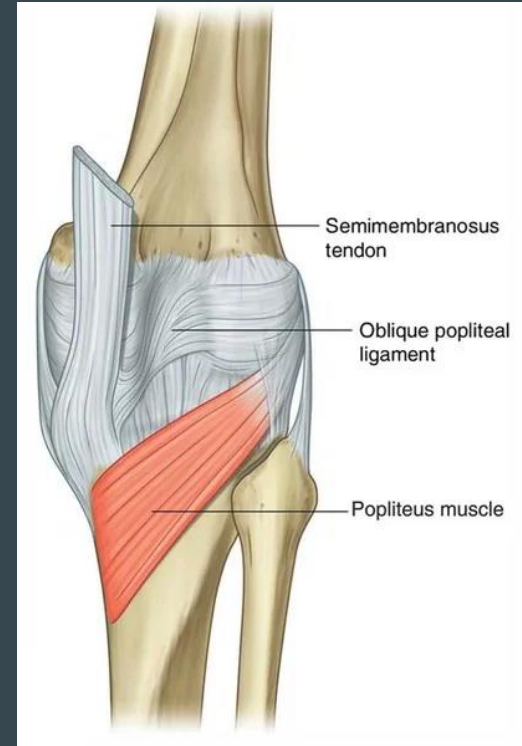
- Swelling and tenderness along lateral proximal gastrocnemius
- Abnormal muscle strength with resisted plantar flexion
- Unable to perform single-leg hop and duck walk

Right Tib-Fib 4-View XR 2 weeks s/p injury



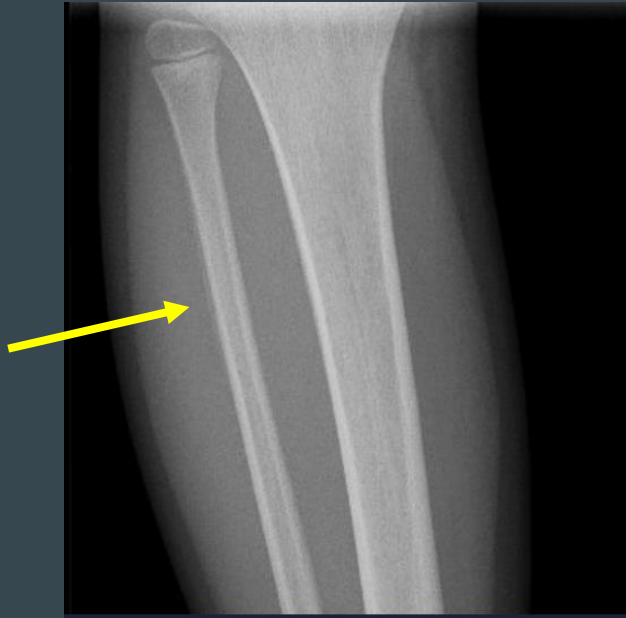
Differential Diagnoses

- Gastrocnemius lateral head strain
- Soleus strain
- Popliteus muscle tendinopathy
- Atypical fibular fracture



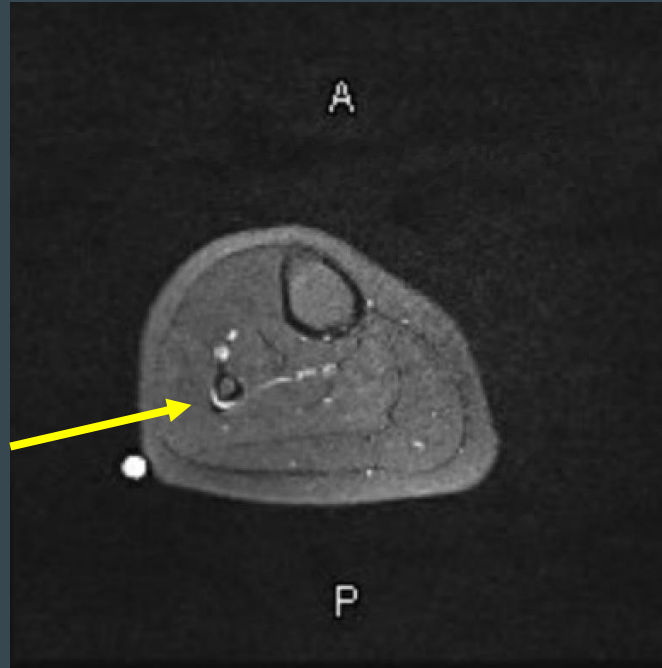
Right Tib-Fib 4-View XR 2 weeks s/p injury

- Subtle periosteal reaction of proximal fibular metaphysis, raising concern for occult fracture



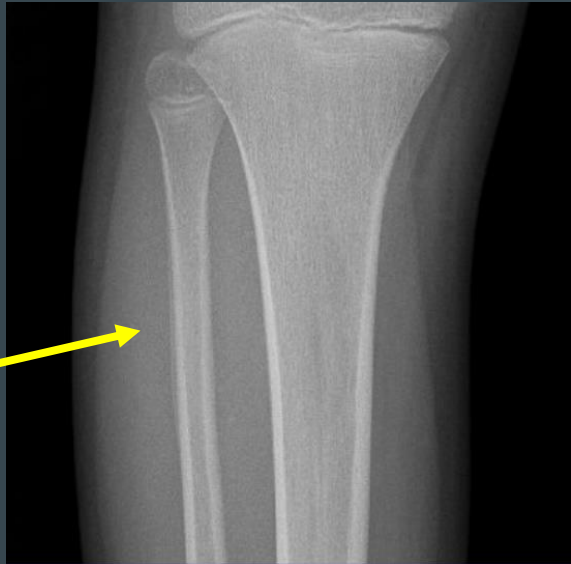
Right LE MRI w/o contrast 1 month s/p injury

- No acute fracture, dislocation, or bone marrow edema



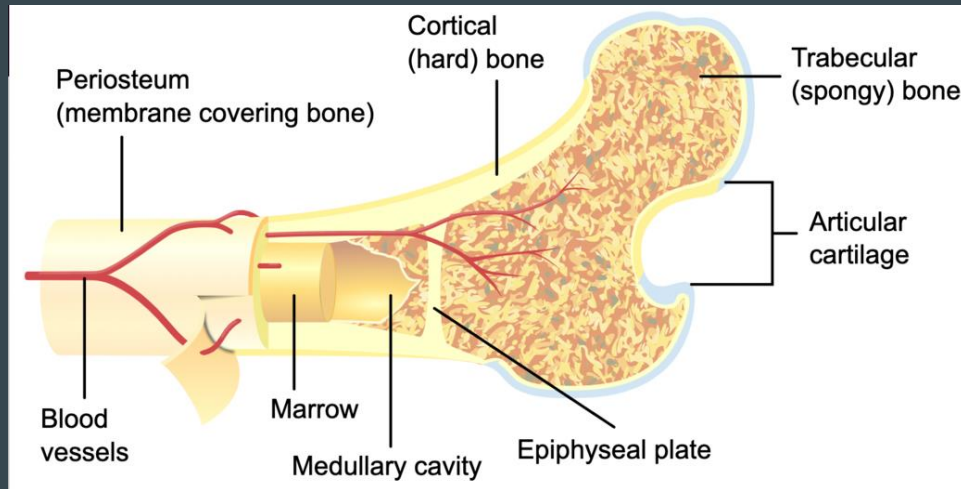
Right Tib-Fib 4-View XR 1 month s/p injury

- Stable periosteal new bone formation involving proximal fibular shaft
- No acute bony abnormality



Final Diagnosis and Discussion

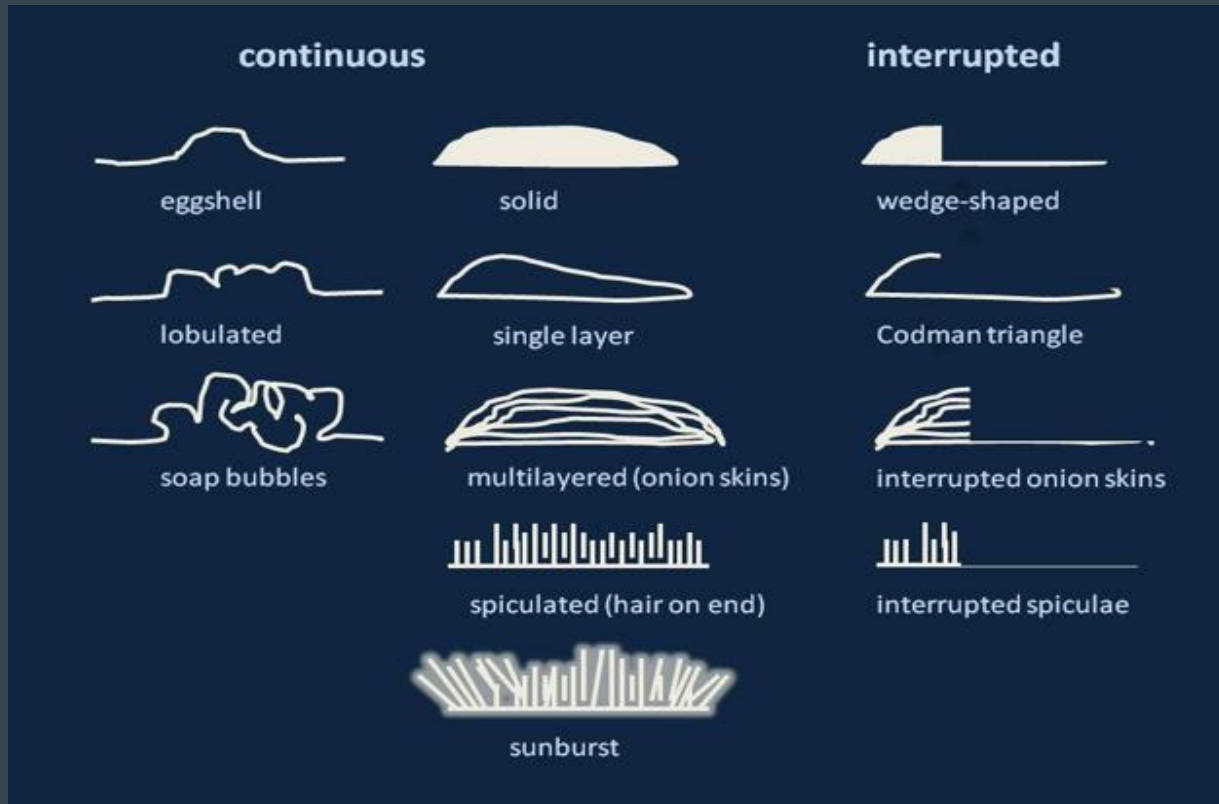
- Diagnosis: Periosteal Reaction of Right Proximal Fibular Shaft
- Definition: New bone formation in reaction to abnormal stimulants
- Etiologies: tumor, infection, trauma, arthritis conditions
- Appearance of periosteal reaction is determined by the type of insult



Final Diagnosis and Discussion

- Periosteum more active in children
- Many various subtypes of periosteal reactions
- Major goal is to recognize presence rather than identifying subtype

Periosteal Reaction: Subtypes



Treatment and Outcomes

1. Immobilization with right lower extremity splint with transition to tall walking boot over 6 weeks
2. Started PT 3 weeks into immobilization
3. Gradual progression from range of motion to strengthening
4. After 6 weeks, layup drills 2-3 times per week totaling 10-15 minutes
5. After 8 weeks, running 5-10 minutes twice a week
6. Gradual return to play with initial limitation on jump shots
7. Advance as tolerated

References

- Periosteal reaction. UW Radiology. (2017, April 18). <https://rad.washington.edu/about-us/academic-sections/musculoskeletal-radiology/teaching-materials/online-musculoskeletal-radiology-book/periosteal-reaction/>
- Periosteal Reaction : American Journal of roentgenology - AJR. (n.d.). <https://www.ajronline.org/doi/full/10.2214/AJR.09.3300>
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