Knee Swelling in a 10-year-old, Traumatic or Atraumatic?

C.J. Rolison, IV, DO
Mary Lloyd Ireland, MD FACSM
University of Kentucky Orthopedics and Sports Medicine
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Disclosures

- None

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HPI

- 10-year-old Hispanic female presented with a right knee effusion. She had fallen onto her anterior knee 2 weeks ago while playing basketball, swelling began the next day. At her visit, pain had improved but swelling persisted. No prior knee injuries.
- Also had several swollen joints when she was much younger which resolved without treatment.

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Past History

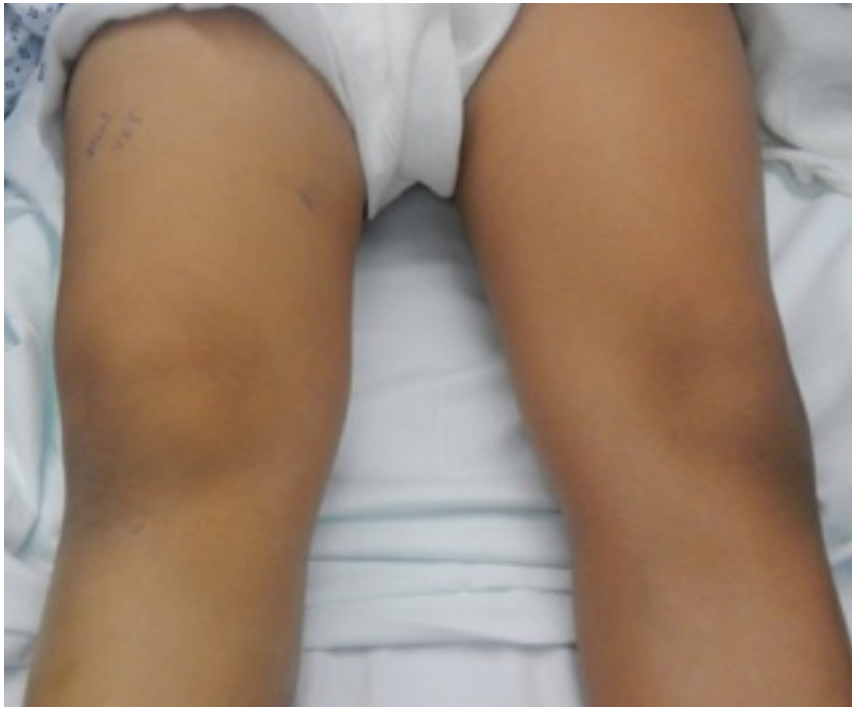
- No pertinent PMHx, FHx, SurgHx, SocHx
- ROS: WNL

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Exam

- GEN: Afebrile, NAD
- MSK:
  - Severe effusion to right knee
  - ROM: 20-90
  - Ligamentously stable
  - 4/5 Quad strength



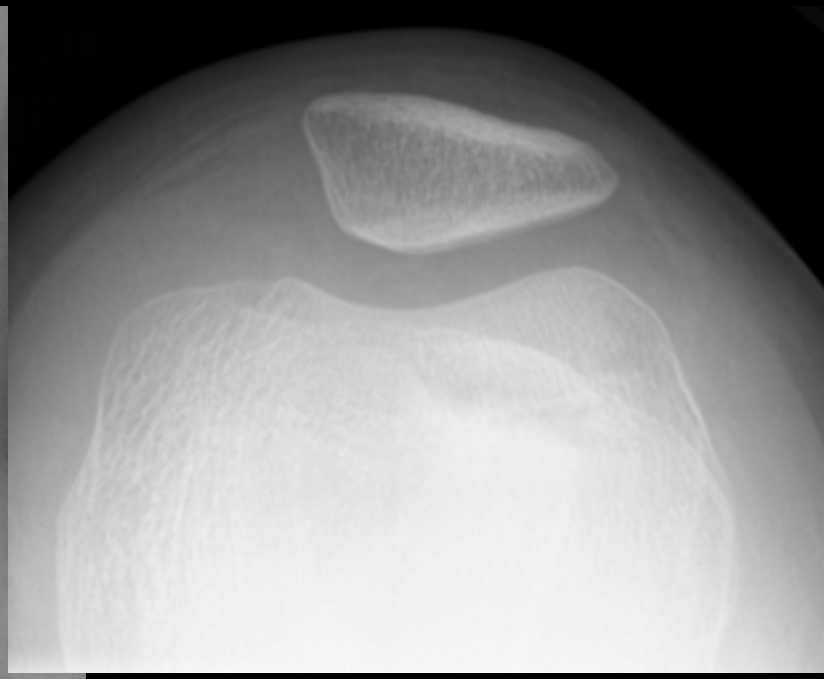
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Radiographs

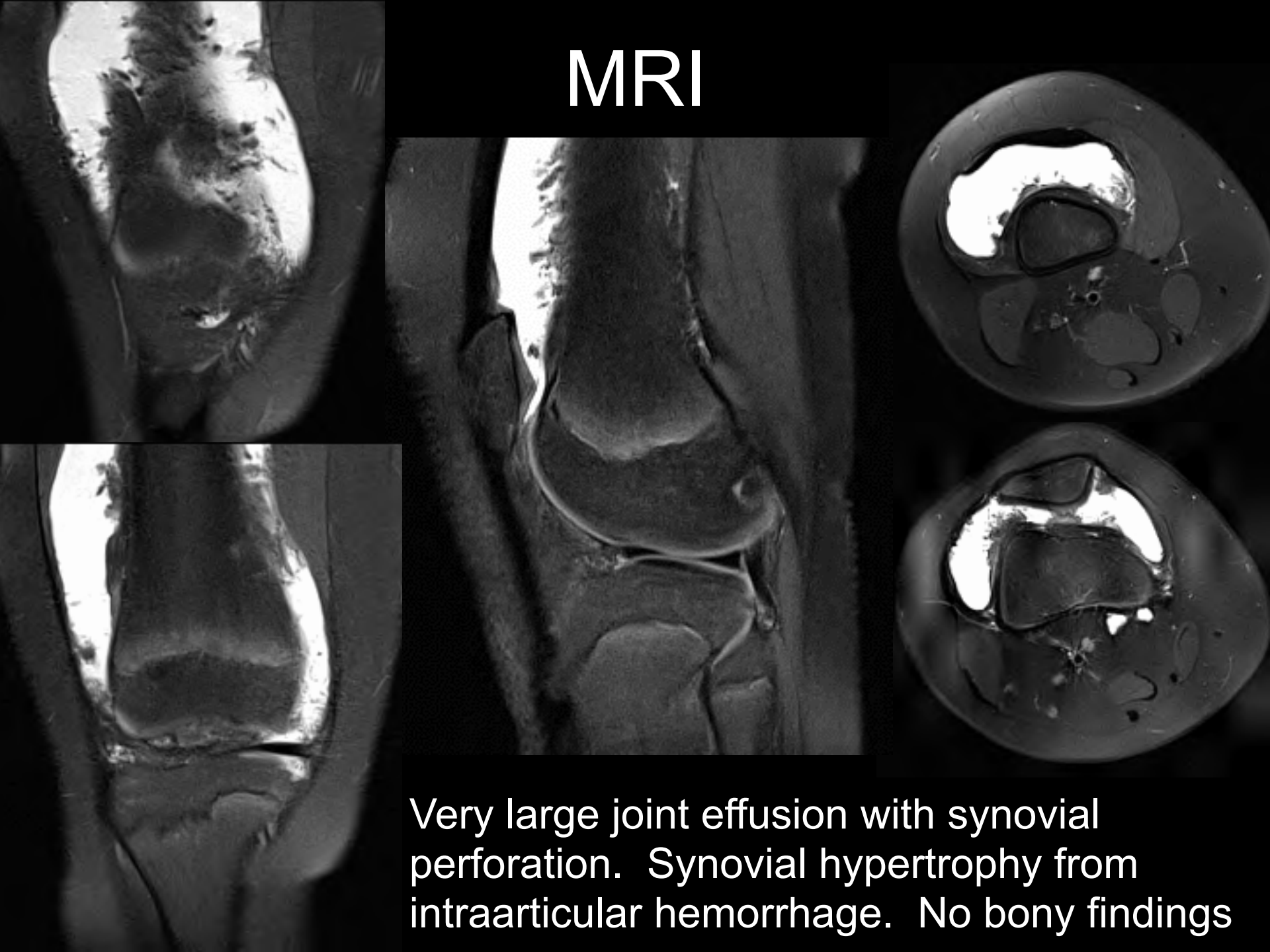






No fracture,
open growth plates,
suprapatellar effusion.

MRI



Very large joint effusion with synovial perforation. Synovial hypertrophy from intraarticular hemorrhage. No bony findings

Lab Results

- ANA: <1:80
- ESR: 22
- CBC, CMP, TSH, CRP, RF, anti-CCP: WNL

Questions?

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DDx

- Juvenile Idiopathic Arthritis (JIA)
- Pigmented Villonodular Synovitis (PVNS)
- Septic Arthritis
- Osteochondral fracture
- OCD lesion
- Bleeding Diathesis (Hemophilia)
- Lipoma Arborescens

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Referral

- Saw Pediatric Rheumatology and Orthopedic Oncology
- Arthrocentesis grossly bloody

- ?Leave slide in or delete it

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Treatment

- Given 5+ months of effusion, MRI, bloody aspiration, planned for surgical evaluation

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Operative Findings



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Operative Findings

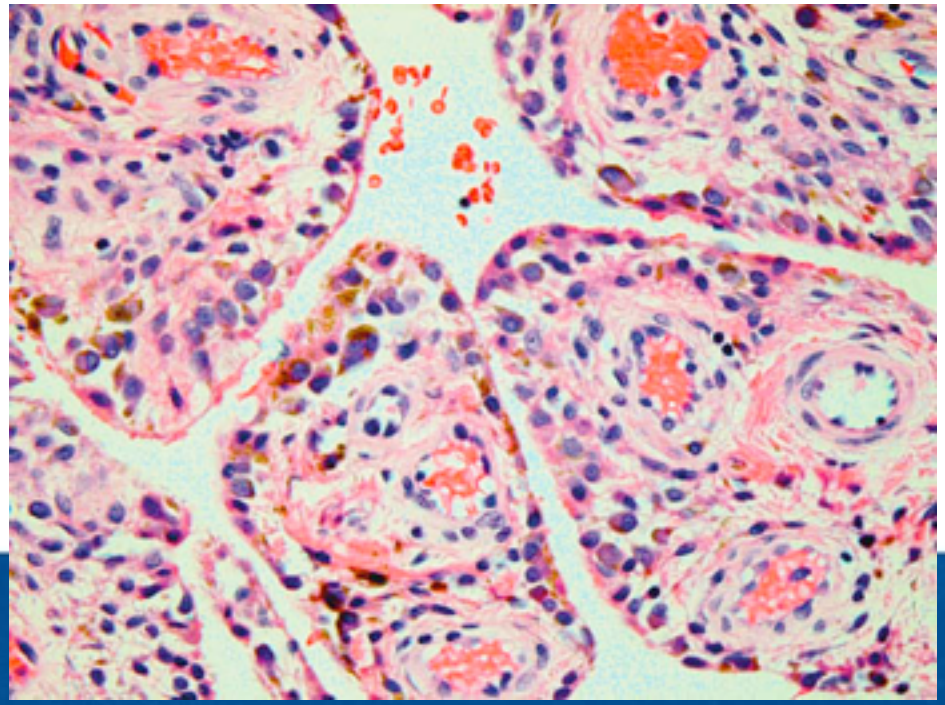
- Marked amount of synovitis in suprapatellar pouch, medial and lateral gutters, and intercondylar notch, brownish-red in appearance
- Biopsies taken and extensive synovectomy performed

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Biopsy Results

- Papillary architecture, giant cells and foam cells consistent with pigmented villonodular synovitis



http://img.orthobullets.com/Qbank/SA%20Exams/2006%20-%20SA%20-%20Basic%20Science/Figures/q4-1d[1].jpg

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Final Diagnosis

- Juvenile Idiopathic Arthritis (JIA)
- **Pigmented Villonodular Synovitis (PVNS)**
- Septic Arthritis
- Osteochondral fracture
- OCD lesion
- Bleeding Diathesis (Hemophilia)
- Lipoma Arborescens

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PostOp

- Compression and cryotherapy utilized
- Swelling resolved 7 weeks post-op
- Full ROM and quadriceps strength at 4 months

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Follow-up

- At most recent yearly follow-up (2 years PostOp)
- No return in swelling
- Participating fully in all activities
- Normal radiographs
- No recurrence of PVNS on her exam



Questions?

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References

- Brenner, JS. Pigmented Villonodular Synovitis Causing Painless Chronic Knee Swelling in an Adolescent. *Clin Pediatrics*. 2007;46:268-271.
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