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

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Disclosures

• None
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.
Past History

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

- GEN: Afebrile, NAD
- MSK:
  - Severe effusion to right knee
  - ROM: 20-90
  - Ligamentously stable
  - 4/5 Quad strength
No fracture, open growth plates, suprapatellar effusion.
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?
DDx

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

- Saw Pediatric Rheumatology and Orthopedic Oncology
- Arthrocentesis grossly bloody

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Treatment

• Given 5+ months of effusion, MRI, bloody aspiration, planned for surgical evaluation
Operative Findings
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
Biopsy Results

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

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

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

- Pigmented Villonodular Synovitis. www.orthobullets.com
- UpToDate.com