



Pigmented Villonodular Synovitis: Arthroscopic Management of an Underappreciated Cause of Joint Pain in Children and Adolescents

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Disclosures

- I (and/or my co-authors) have something to disclose. Disclosures are available on the POSNA annual meeting app.

Disclosures



- Benign proliferative synovial disorder
- Hemosiderin-laden villous and nodular lesions
- 1.8 cases per million people
- Presents in 20s and 30s
- Swelling, pain in affected joint, decreased motion
- MRI: hyperplastic synovium, “blooming” artifact (hemosiderin)
- Open or arthroscopic synovectomy

Literature Review

- Adult disease
- Lack of pediatric studies
 - 2 case series (15 total patients)
 - 9 single-patient case reports
 - Knee (3)
 - Hip (2)
 - Sacrum
 - Calcaneocuboid
 - Elbow
 - Multifocal

Baroni et al. *J Child Orthop* 2010

Neubauer et al. *Iowa Orthop J* 2007

Purpose

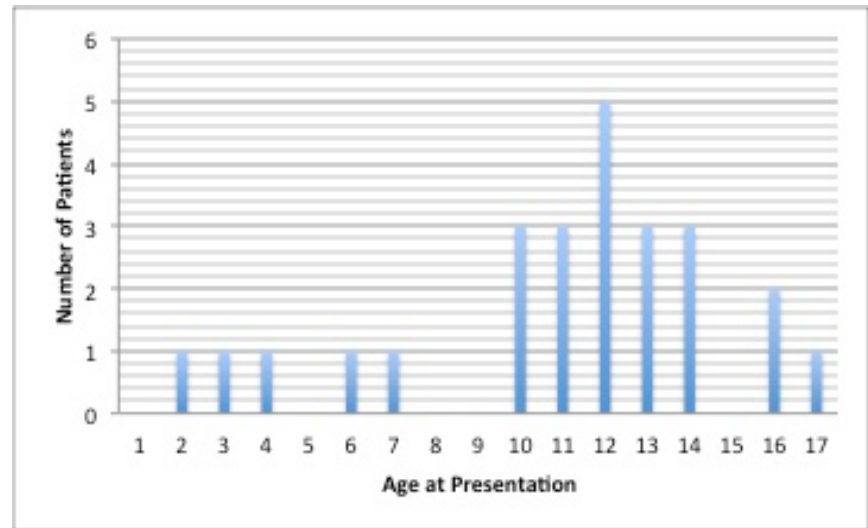
- To describe the presentation, management, and outcomes of a single-center series of pediatric patients with PVNS

Methods

- IRB approved retrospective review
- January 2001 – December 2016
- Patients identified by ICD and CPT codes and keyword search of radiology and pathology reports.
- Inclusion criteria: <20 years of age, histologic diagnosis of PVNS

Results

- 25 patients
- Average age 11y (2-17y)
- F>M 1.3 : 1
- Joint Location
 - Knee (17)
 - Hip (5)
 - Ankle (1)
 - Shoulder (1)
 - Elbow (1)

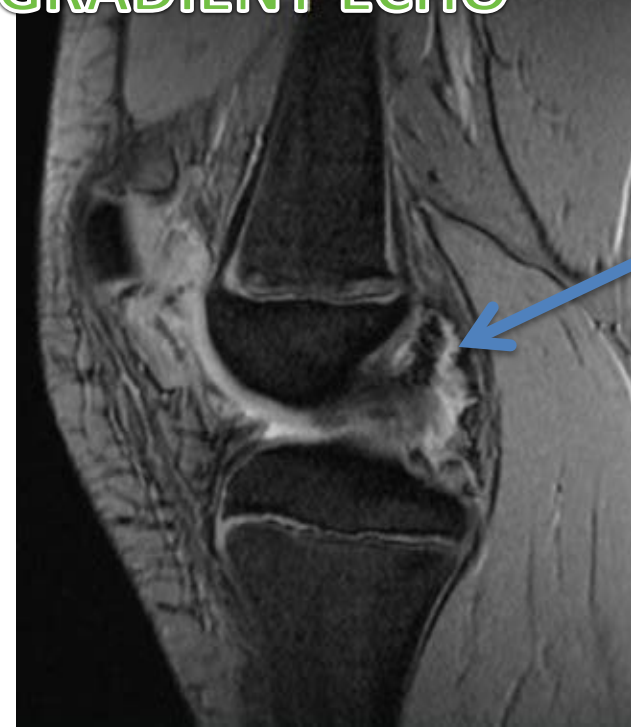


- Exam Findings
 - Effusion, tenderness, painful/decreased ROM
- Duration of symptoms prior to evaluation = 11.6 months (0 – 99 mo)
 - Pain 72%
 - Swelling 60%
 - Specific injury 60%

Results

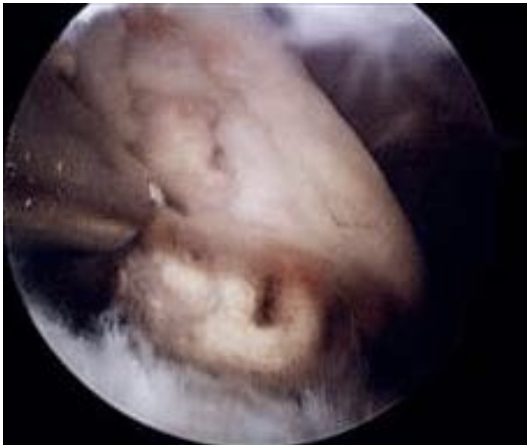
- Misdiagnoses 68%
 - Inflammatory arthritis
 - Infection
 - Trauma
 - Meniscus tear
 - Bleeding disorder
- Radiographs normal 88%
- MRI diagnostic 72%



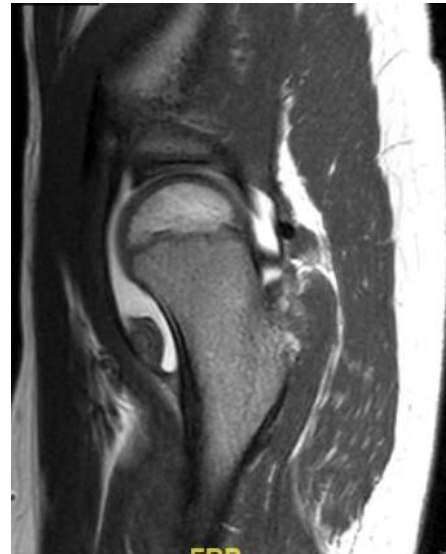
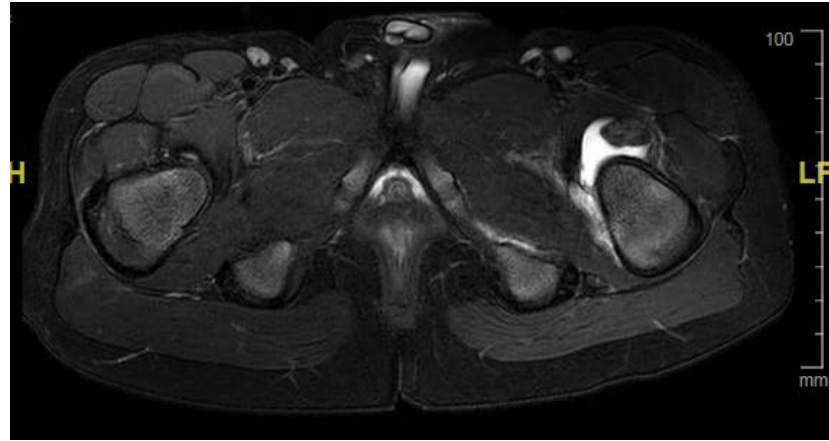


Results

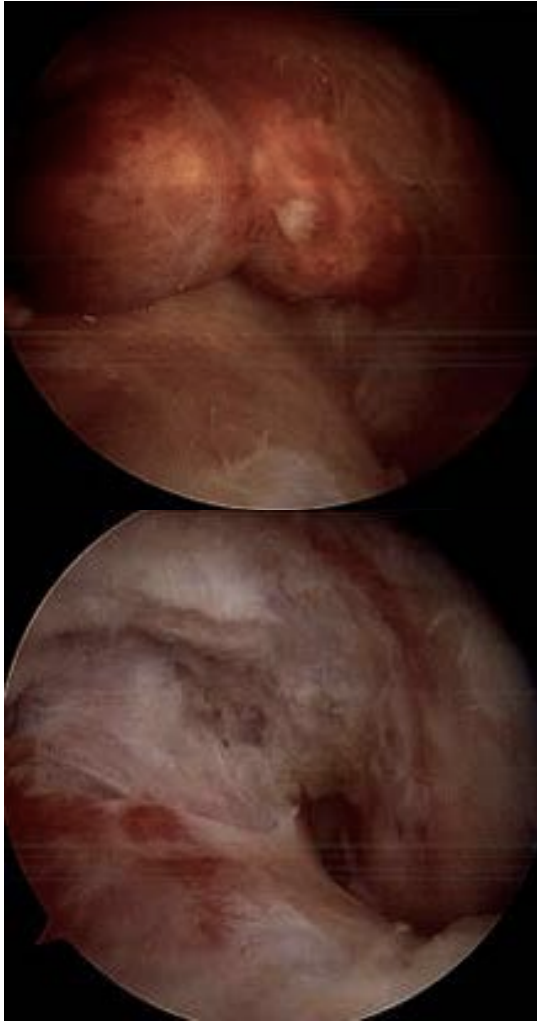
- 37 surgeries
 - 17 patients single surgery
 - 8 patients two surgeries
 - 1 patient biopsy + synovectomy x3
- Majority arthroscopic synovectomy (89%)
- 88% disease-free at mean 15 month follow-up
- 3 patients with MRI persistence
 - All knees
 - 2 asymptomatic
 - 1 serial MRI progression referred for cryoablation



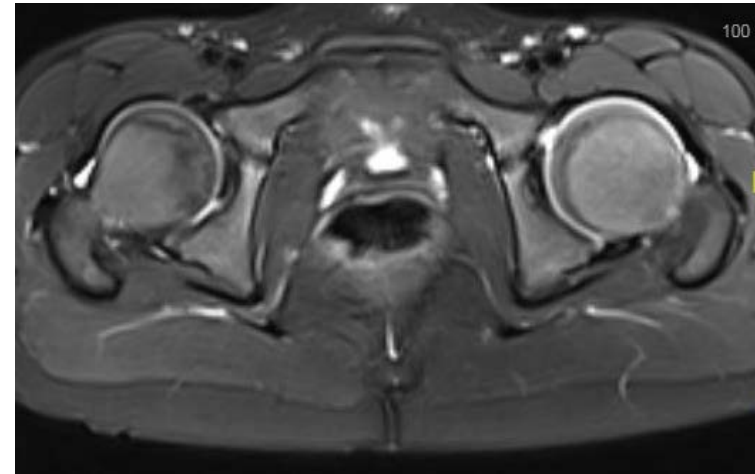
4yo M with 1 month left thigh pain and progressive inability to bear weight



4yo M with 1 month left thigh pain and progressive inability to bear weight



6 months post-op



Discussion

- PVNS should be considered in pediatric patients with an insidious onset of joint swelling +/- pain whose lab studies and imaging do not support infectious or rheumatologic etiology
- 70% of affected children 10-14 years of age
- Knee is the most common joint
- Symptoms are present for months to years prior to diagnosis
- MRI is diagnostic imaging study of choice
- Arthroscopic synovectomy produces good outcomes with low rates of persistence

Thank you!

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