





Male Sports Injuries

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Disclosures

- I have no financial disclosures or industry relationships.





Agenda

- Little Leaguer's Shoulder 
- Osteochondritis Dissecans 





Little Leaguer's Shoulder





Little Leaguer's Shoulder

- Stress fracture through proximal humeral physis
- Skeletally immature
 - Relates to internal impingement seen in older populations
- Overhead athletes
- Overuse injury
 - Repetitive rotational/compressive forces at shoulder
 - Can be related to poor form



Little Leaguer's Shoulder

- Classically described in male baseball pitchers
- Becoming more common in female athletes
- Average age 11-14 years old
- Increased exposure to year round sports has led to increased number of injuries.
- Associated injuries:
 - Little Leaguer's Elbow:
 - Medial epicondyle apophysitis/fracture, medial epicondylitis, OCD capitellum, hypertrophy of ulna, osteochondral injury of radial head, olecranon apophysitis



Presentation

- Gradual onset of shoulder pain
- Sometimes an inciting injury
- Most pain with throwing at high velocity



Physical Exam

- Tenderness over proximal humeral physis
- Pain with ER and ABD
- Can have pain with resisted rotator cuff testing
- GIRD extremely common!!!
 - Check ROM at 90 degrees of abduction

*For shoulders, always check the elbow!
For elbows, always check the shoulder!*



Imaging

- Xrays
 - AP/Internal/External rotation views, Axillary
 - Widening of proximal humeral physis
 - Findings can be subtle
- Contralateral xrays
 - Helpful to compare appearance of physis
- Advanced imaging usually unnecessary



Imaging

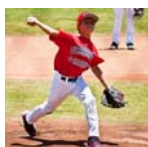


- Diagnosis: Epiphysiolysis Right Proximal Humerus
Salter Harris 1 Fracture
"Little Leaguer's Shoulder"



Little Leaguer's Shoulder (Epiphysiolysis)

- Proximal Humerus Physis
 - Repetitive stress injury: young pitchers initiate trunk rotation earlier, more stress/torque on shoulder and elbow
 - Physis closes in girls 14-17, boys 16-18
 - Accounts for 80% growth of the humerus
 - Remodels in response to stress (retroversion)
 - **Complication:** growth disturbance



Treatment

- Nonoperative
- Throwing cessation 6 weeks – 3 months
- Xrays show restoration of normal physeal anatomy
- Physical therapy for strengthening, capsular stretching, pitching mechanics



Treatment

- Gradual return to throwing program
 – velocity added last!
- Encourage other positions and sport diversification
- Pitch counts: 10 pitches x age per week!



Pitch Counts & Rest Days

Age	Pitches/Game	Ages 7-16	Ages 17-18	Required # of Rest days
7-8	50	61+	76+	3 calendar days
9-10	75	41-60	51-75	2 calendar days
11-12	85	21-40	26-50	1 calendar day
13-16	95			
17-18	105			




Little Leaguer's Shoulder

- Overuse shoulder injuries are common in children/adolescents, particularly overhead athletes
- Injuries of shoulder & elbow are often interrelated
 – Physis is often the weak point
- Contralateral Xrays can be extremely helpful





Osteochondritis Dessicans (OCD)





Osteochondritis Dessicans

- “Focal, idiopathic alteration of subchondral bone with risk for instability and disruption of adjacent articular cartilage which may lead to osteoarthritis.”
- Etiology unknown:
 - Acute trauma
 - Microtrauma/overuse
 - Vascular insult
- Optimal treatment unknown. Few good studies.



OCD Most Common

- Locations:
 - Knee*
 - Ankle
 - Elbow
- Males 3.8x more likely than females
- Age: 12-19
- Bilateral OCD in up to 30% patients



OCD Presentation

- Activity related knee pain
- Effusions
- Mechanical symptoms
- Limping
- Often described as “anterior knee pain”



Imaging

- AP/Lat
- Notch*
- Sunrise
- Alignment Films
- Consider contralateral xrays
- MRI



Classification

- Multiple
- Important to distinguish...
 - Stable
 - Unstable
- Unstable Characteristics:
 - Violation of cartilage
 - Fluid tracking behind lesion
 - Cystic changes
 - Loose body



Treatment

- Nonsurgical
 - Stable lesions, skeletally immature
 - Weightbearing restriction
 - Activity restriction (4-6mo sometimes)
 - Immobilization: unloader brace, cast
 - Success 50-60%



Treatment

- Surgical
 - Unstable lesions
 - Failed conservative management of stable lesions
 - Skeletally mature patients
 - Trochlear/patellar lesions



Surgical Options – Stable Lesions

- Drilling of stable lesions
 - Transarticular
 - Violates cartilage
 - Retrograde
 - Can be more technically challenging/more radiation
- Retrograde drilling & bone grafting (BMAC)
 - More advanced stable lesions



Surgical Options – Unstable Lesions

- Internal fixation
 - Metal implants
 - Bioabsorbable implants
 - With drilling/bone grafting
- Fragment excision
- Primary osteochondral allograft/autograft
- Staged ACL or OATS



Conclusions

- Youth injuries are becoming more common as sports participation rates increase.
- Familiarity with common conditions in young patients can help optimize timely diagnosis and expedite treatment.
- Little Leaguer's Shoulder and OCD are common in young athletes and should be in the differential diagnosis of patients presenting with pain.



Thank you!



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