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Detection and Prevention of Glenohumeral Epiphysiolysis

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Proximal humeral epiphysiolysis (a.k.a. Little League shoulder) is most commonly seen in adolescent throwing athletes from ages 11 to 16 years (1,4). The pathology is a widening of the physis, resulting in a Salter-Harris I fracture (see Figure) (8). Biomechanically, due to weaker developing epiphyseal plates, torque during maximum external shoulder rotation and excessive laxity may predispose the young thrower to this type of injury (9,10).

Important information to elicit includes whether the athlete is a pitcher or catcher, the number and type of pitches thrown per game and season, the frequency of pitching, and the number of leagues in which the athlete competes. The quality, severity, and specific location of pain experienced as well as when the pain occurs during pitching motion are important information to obtain (4). Patients typically present with pain occurring in the shoulder that has progressively worsened over several months while throwing hard (1). The most consistent physical examination finding is tenderness over the proximal humeral physis (1).

While anterior-posterior radiographs in internal and external rotation with widening of the proximal humeral physis is the hallmark of Little League shoulder, there also may be fragmentation of the lateral metaphysis, sclerosis, cystic changes, and demineralization of the proximal humeral metaphysis (2). Additionally, widening of the physis does not necessarily correlate to symptoms. An important pearl is to always obtain comparison radiographs of the nonthrowing shoulder. Magnetic resonance imaging (MRI) studies also have been used for further imaging detail with success (2). However, MRI is typically not indicated unless there is suspicion of additional injury and/or no improvement with rest for at least 3 wk (3).

Nonoperative treatment typically begins with 6 wk of complete rest. If the patient is asymptomatic at rest, non-throwing physical therapy may begin at week 7. At 3 months, if asymptomatic, a progressive throwing program with subsequent return to play is standard.

Overuse throwing injury can be minimized by following national recommendation guidelines, which major league baseball has now endorsed, on pitch counts, rest days, pitch type based on age, use of radar guns, and yearly arm rest recommendations (4–7,11).

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RIGHT SHOULDER A/P

LEFT SHOULDER A/P

Figure.

Notice the widening of the right proximal humeral physis (on the left) compared with that in the left in this 13-year-old pitcher.