Premature cystic lesions in shoulders of elite junior javelin and volleyball athletes: a comparative evaluation using 3.0 Tesla MRI.

The purpose of this study was to evaluate clinical and magnetic resonance imaging (MRI) findings in the shoulders of high performance competitive junior javelin athletes and volleyball players. The hypothesis was that structural lesions already exist in young and asymptomatic overhead athletes. Thirty-one healthy high performance junior elite athletes were included. Group 1 consisted of 15 male javelin throwers (mean age, 17.7 ± 0.8 years) and group 2 of 16 male volleyball players (16.9 ± 1.0 years). Questionnaire-based interviews, comprehensive clinical examination, and shoulder scoring systems (visual analog scale [VAS] and Constant-Murley Score) were completed. Bilateral shoulder imaging was performed using a 3.0 Tesla MRI. The Constant-Murley Score of group 1 was 95.5 ± 3.6 and 94.7 ± 4.6 points for group 2. Group 1 demonstrated a mean VAS of 0.9 ± 1.6 and group 2 a mean of 0.6 ± 0.8 points. Postero-superior intraosseous cysts of the humeral head were detected in 73.3% of all javelin throwers in the dominant shoulder, but only in 13.3% in the nondominant shoulder (P = .008). In the volleyball group, such cyst formation was rarely seen in 12.5% in the dominant versus 6.3% in the nondominant shoulder (P = .66). A high percentage of junior elite athletes already demonstrate osseous signs of overloading especially in the group of javelin athletes, although
none had a history of prior shoulder pathology. Therefore, junior overhead athletes might be at risk for the early development of structural lesions at the insertion of the posterior rotator cuff similar to lesions already known for adult athletes, even though they do not present clinical signs of overuse at that age.