

The different causes for pain in swimmer's shoulder

Swimmers, as well as volleyball, baseball and water polo players, are included in the group of athletes involved in repetitive physical activities with the hands above the level of the head. This type of movement results in particular alterations in the biomechanics of the glenohumeral joint, including dyskinesia and muscular force imbalance, leading to hypertrophy of adductor and internal rotator groups, with fatigue of the external and abductor rotators musculature which acts as antagonists. Studies also have shown that elite swimmers are more prone to multidirectional ligamentous laxity, partially acquired because of repetitive activities, and partially facilitated by the athlete's biotype⁽¹⁾. These biomechanical alterations, in association with chronic repetitive movements, contribute for both subacromial and postero-superior impact injuries, besides alterations in the glenoid labrum. Following this rationale, a study has reported the results of arthroscopy in the shoulders of 18 high performance swimmers⁽²⁾, with most of lesions (11 patients; 61%) found during the surgery related to the glenoid labrum, in association with signs of postero-superior impact, in five cases, and subacromial in two cases. In other five cases (28%), signs of subacromial impact were found, two of them concomitantly with signs of postero-superior impact.

In a recent study published in **Radiologia Brasileira**, Cunha et al.⁽³⁾ report the findings of rotator cuff lesions in 11 elite swimmers, independently from symptoms, concluding that the incidence of tendinous lesions is not higher in these athletes as compared with the general population, and that, most of times, the prevalence of pain in these athletes is a result of an inflammatory process occurring in the subacromiodeltoid bursa. One should be careful

about the second part of the conclusion, considering that the evaluation was performed by ultrasonography that allows a detailed analysis of more superficial articular structures, such as bursa and tendons, but it does not so well in deeper structures such as the glenoid labrum. In symptomatic cases, where ultrasonography cannot satisfactorily demonstrate lesions that could explain the pain of the patient, the utilization of other resources, such as magnetic resonance imaging, may be indicated for evaluating deeper structures such as the labrum-ligamentous complex.

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References

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Reply

Dear reader,

Firstly, we would like to thank you for your interest in this theme, as well as for your relevant comments and arguments. We agree that the causes for shoulder pain, especially in "throwing" athletes (swimmers, volleyball, water polo players, etc.), are not limited just to tendinous alterations or inflammatory processes involving the bursa. Both the literature and our experience with other imaging methods (magnetic resonance imaging, magnetic resonance

arthrography) testify that these athletes develop joint hyperlaxity, as well as fatigue of the dynamic shoulder stabilizers; and therefore the incidence of postero-superior impact in these individuals is high. This mechanism is closely related to labral lesions that represent frequent causes for pain in these individuals.

However, our study was aimed at evaluating the incidence of rotator cuff injuries in athletes involved in long training routines as compared with the general population. Ultrasonography is highly specific and sensitive for this purpose as compared with other diagnostic methods. Our conclusion was that the incidence of rotator cuff injuries in these athletes is not different from the incidence reported by other authors for the general population. The second part of the conclusion that is questioned in your letter refers to the observation that, in our casuistic, the patients with pain presented a higher incidence of bursitis as compared with the asymptomatic individuals.

Our objective and conclusion were aimed at just evaluating the incidence of tendinous lesions in swimming athletes as compared with the general population, and not investigating the causes for shoulder pain in these individuals. It is known that ultrasonography is limited as a method for evaluating intra-articular structures, particularly the labrum. Our experience with the other imaging methods suggests that all the mechanisms involving shoulder impact as well as associated lesions may be related to painful symptoms in the shoulder; but this aspect is not included in the already mentioned objectives.

Sincerely,

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