The Role of Magnetic Resonance Imaging in Evaluation of Sport Injuries of the Elbow Joint

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The Abstract

MRI is a valuable tool for evaluation of the athlete with elbow pain, particularly in those with non localizable pain. MRI is also helpful in sorting out the cause of pain in athletes who may have acute trauma superimposed on tendinopathy or other chronic injuries from repetitive micro-trauma. Even in athletes in whom the cause of pain confidently can be diagnosed clinically, MRI can document the injury severity, which can be helpful for estimating recovery time or in preoperative planning.By contributing to an accurate early diagnosis, MRI can help minimize the time that athletes are away from their sports. There are some sports injuries in which the only imaging of the elbow that is necessary is a radiograph or CT. For many elbow injuries, however, MRI is preferred because of the superior soft tissue details allowing interpretation of the elbow related sports injuries involving osteochondral, ligaments, muscles and tendons or nerve structures.

Key Words :

Magnetic Resonance Imaging - Elbow Joint - Fat suppression .

Introduction

The incidence of elbow injuries in recent decades is sharply rising as the number of participants in overhead sports as Tennis, Golf, Baseball Football, and Volleyball is rapidly increasing ***(Safran R, 2006).***

Most of these injuries in the throwing athlete are the result of the biomechanical forces imparted on the elbow during the throwing motion producing over use syndromes and elbow instability ***(Cain et al, 2003)***.

That's why an early diagnosis which allows early initiation of treatment is essential to enable athletes to return safely to competition as quickly as possible (***Frostick et al, 2003)***.

The elbow sport injuries can be roughly grouped into enthesopathies (lateral and medial epicondylitis), valgus stress injuries as the result of altered function of the primary constraint to valgus stress, MCL damage, posterior impingement, and nerve compression syndromes. Osteochondral lesions can also be found in younger athletes ***(Frostick et al, 2003***).

Conventional radiography is the initial screening technique for evaluation of possible osseous injury or arthritis but often it offers little information concerning soft tissue derangement, which is a common source of dysfunction ***(Thornton et al, 2003).***

Magnetic Resonance imaging has proven absolutely valuable for diagnosing most of these soft tissue injuries (***Saliman et al, 2006).***

As the high soft-tissue contrast is the one of the most important advantage of MR imaging over conventional radiography and computed tomography, and this includes the ability to image and to discriminate, by differences in their signal intensities, bone marrow, cartilage, tendons, nerves, and vessels ***(Thornton et al, 2003).***

Magnetic resonance imaging can detect accurately sport injuries of the elbow related structures, including medial and lateral collateral ligament with high sensitivity and specificity. MR can also determine the extent of tendon pathology in patients with medial and lateral epicondylitis. It is helpful in evaluating patients with nerve disorders at the elbow ***(Kijowski et al, 2004)***.

Aim of the work

The aim of the study is to evaluate the role of Magnetic resonance imaging in the assessment of sport injuries of the elbow joint as MRI has become an invaluable tool in the diagnostic workup of the common traumatic and overuse syndromes of the elbow.

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