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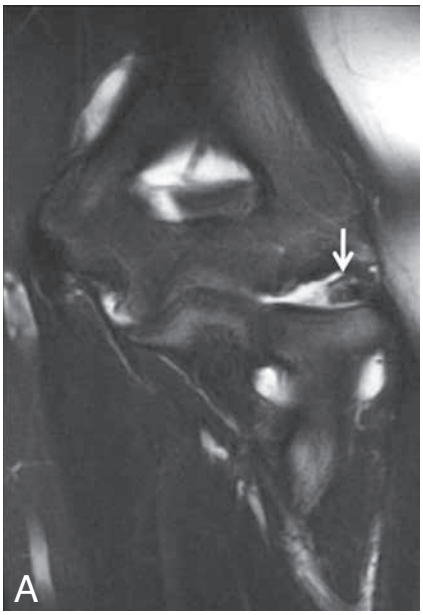
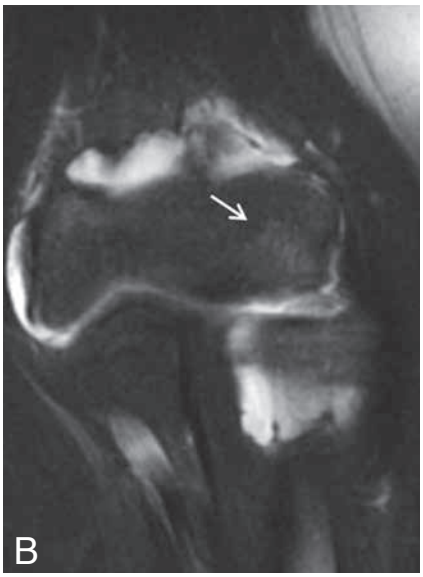
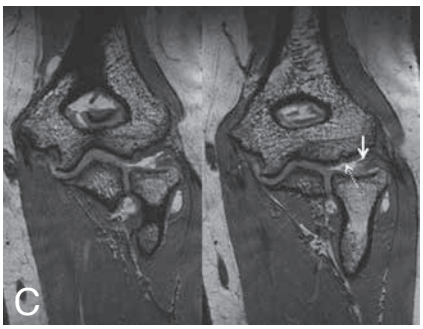
IMAGES IN CLINICAL RADIOLOGY







A rare cause of posterolateral elbow pain: radiohumeral plica syndrome with typical MRI findings

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A 17-year-old female swimmer was presented to the department of orthopedics with a history of periodically increasing pain for 3 months on the left elbow. On examination, pain was located on the posterolateral site of the elbow. There was snapping during elbow flexion and extension. There was no history of trauma.

Coronal fat-suppressed T2-weighted fast spin-echo MR image showed a thickened radiohumeral plica (arrow) with heterogeneous signal intensity and a blunted tip (Fig. A). The high signal intensity within the plica represented inflammation. Plica covered greater than one third of the radial head articular surface. There was a small area of signal abnormality in the subcortical bone of the adjacent capitellum (arrow) (Fig. B). The accompanying effusion could also clearly be seen on T2-weighted images. Consecutive coronal T2* gradient echo images (Fig. C) showed thinning of the cartilage of the capitellum (dotted arrow). The surface of the cartilage was irregular. The thickened radiohumeral plica was also seen (arrow).

He was diagnosed with radiohumeral plica syndrome (radiohumeral synovial fringe syndrome, synovial fold syndrome) and underwent arthroscopic debridement of the radiohumeral plica.

Comment

Synovial plicae are normal anatomic structures of the joints which extend toward or between the two articular surfaces. They are remnants of the fetal stage of development where the elbow is divided into three cavities; radiohumeral, ulnohumeral and radioulnar. These three cavities subsequently merge (1). Plicae may be symptomatic when they become hypertrophied, thickened or inflamed due to repetitive microtraumas, aging or other pathologic conditions (1).

Radiohumeral plica is a synovial fold which is located between head of radius and capitellum can cause "radiohumeral plica syndrome" when it is thickened or inflamed. As the fold thickens, it can be compressed between radius and humerus during repetitive flexion-extension movements and this condition initiates inflammatory reaction (1). Radiohumeral plica syndrome is more common in athletic young patients who are interested in sports such as tennis, badminton or golf that requires repetitive flexion-extension movements (1). Patients usually suffer from pain on the posterolateral site of the elbow, limitation of extension, snapping or locking during flexion and extension.

MRI is the imaging method of choice in the evaluation of radiohumeral plica syndrome and accompanying abnormalities such as articular cartilage defects, focal posterolateral

synovitis or bone marrow edema. While normal synovial folds have low signal intensity on all sequences, pathologic plica is recognized by thickening and high signal intensity (1).

The thickness of the synovial plica greater than 2.6 mm is significant to differentiate symptomatic from asymptomatic patients.

The differential diagnosis for radiohumeral plica syndrome include lateral epicondylitis, osteochondritis dissecans, osteochondral loose body and compression of the posterior interosseous nerve. To be aware of MR imaging features of radiohumeral plica syndrome is essential to make the diagnosis and treatment earlier and to avoid articular cartilage defects.

Reference

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