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TITLE: Bicipitoradial bursitis in a patient with rheumatoid arthritis

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Short running title: Bicipitoradial bursitis in rheumatoid arthritis
CASE REPORT

A 63 years old Chinese woman with seropositive rheumatoid arthritis (RA) presented with three days history of painful left forearm swelling and fever after switching to anti-tumour necrosis factor therapy for two months. There was no recent history of injury reported. Physical examination showed a swelling at the antecubital area which was tender on palpitation. X-ray of elbow and forearm were normal. Blood test showed elevated C-reactive protein 108ng/L (<5ng/L) and ESR 119mm/hour (3-28mm/hour). Initial diagnosis were cellulitis, inflammatory lesion or soft tissue mass. Ultrasonography demonstrated a poorly compressible, well-circumscribed hypoechoic lesion with both solid and fluid component surrounding the distal biceps tendon (Figure 1), over the anterior aspect of cubital fossa (Figure 2) with power Doppler signals. The elbow joint was normal without synovitis or effusion. Sonographic features suggestive of bicipitoradial bursitis need to rule out septic bursitis. Ultrasound-guided aspiration and decompression of the lesion was performed, yielded slight blood-stained fluid, both bacterial and mycobacterium culture was negative. Her fever responded to course of antibiotics and anti-inflammatory drugs. The swelling completely resolved after one week.

DISCUSSION

Bicipitoradial bursitis is an uncommon condition, mostly due to repetitive mechanical trauma or overuse, partial or complete tears of the distal biceps tendon, inflammatory diseases like RA or psoriatic arthritis, infection like tuberculosis, chronic renal failure or very rarely villonodular synovitis, osteochondromatosis and amyloidosis [1-4]. Anatomically distal biceps tendon is covered by a paratenon instead of a synovial sheath. It is inserted to the radial tuberosity. In order to reduce friction during pronation of the forearm, a bursa, named bicipitoradial bursa, which contains synovial lining, is presented between the distal biceps tendon and the radial tuberosity. It is not connected to elbow joint directly and exhibits a horseshoe-shaped appearance as it warps around the distal biceps tendon. As in this case, the bursa was so distended with fluid that almost surrounded the adjacent distal biceps tendon,
mimicking a tenosynovitis process [5]. The mass effect of the distended bursa can also compress on the deep radial nerve causing entrapment [6]. Sonographically may not be easy to differentiate from the adjacent distal biceps tendon that might exhibit anisotropy. Pronation of the forearm is recommended to delineate bursa space from the tendon itself [7].

CONCLUSION

Although bursitis is common in patient with inflammatory arthritis, antecubital fossa lesion is still a challenging condition for clinician in daily practice. Nowadays, ultrasound allows rapid diagnosis of various musculoskeletal problems in rheumatic patients. The awareness of the anatomy is curial in identify the cause of swelling over proximal forearm. In this case, the development of bicipitoradial bursitis is probably related to active rheumatoid arthritis with fluid accumulation and thickening of bursal wall. Nevertheless, infective cause especially tuberculosis should always be the differential diagnosis for patients receiving biologics.

Keywords: bicipitoradial bursitis, rheumatoid arthritis, distal biceps tendon, musculoskeletal ultrasound

CONFLICTS OF INTEREST

None

AUTHOR’S CONTRIBUTIONS

CHAN, Pui Shan Julia

Group 1 - Conception and design, Acquisition of data
Group 2 - Drafting the article, Critical revision of the article
Group 3 - Final approval of the version to be published

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FIGURE LEGENDS

Figure 1: Bicipitoradial bursitis in a patient with rheumatoid arthritis. A, transverse sonography showed a hypoechoic lesion surrounding the distal biceps tendon (*).

Figure 2: Longitudinal view showing a distended bursa (b) at antecubital fossa.
FIGURES

Figure 1: Bicipitoradial bursitis in a patient with rheumatoid arthritis. A, transverse sonography showed a hypoechoic lesion surrounding the distal biceps tendon (*).

Figure 2: Longitudinal view showing a distended bursa (b) at antecubital fossa.