



## Bicipitoradial bursitis A case report

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**Mass lesions in the antecubital fossa are uncommon and therefore unknown. We report a case of bicipitoradial bursitis, which initially was mistaken for a malignant lesion.**

**Keywords :** radiobicipital bursitis.

### INTRODUCTION

Inflammation of the bicipitoradial bursa is a rare condition and only few reports can be found in literature. Several causes for a cubital bursitis have been suggested in the past. The need to include a malignant lesion in the differential diagnosis has only been mentioned in one of these reports (2). Our main objective in reporting this case is to make this pathological entity better known.

### CASE REPORT

A 64-year-old, otherwise healthy woman was referred to our clinic with a 2-month history of anterior elbow pain, progressively becoming worse over the last few weeks. She complained of a painful swelling in the right antecubital fossa. Pronation caused the pain to increase. The patient could not recall any real traumatic event nor significant disease.

On examination a rather hard, soft tissue mass was slightly visible and tender on palpation in the antecubital fossa of her right forearm. The patient

had lost 10° of both active elbow flexion and extension. Supination was not limited. Pronation was painful and reduced by 15°. Compared to the left side, the power of active resisted finger extension was somewhat reduced (grade 4/5). There were no signs of vascular compression or sensory impairment.

Plain radiographs showed calcifications in front of the radial tuberosity of an otherwise normal elbow (fig 1). On ultrasound a hypoechoic soft tissue mass was seen, lying anteriorly to the proximal radius. The mass was irregularly outlined, and contained calcifications and fluid. Bone scintigraphy showed a slight hotspot at the same location.

MRI revealed the close proximity of the mass to the biceps tendon. The size of the lesion was about 3 × 3 × 2 cm. There was no clear-cut margin

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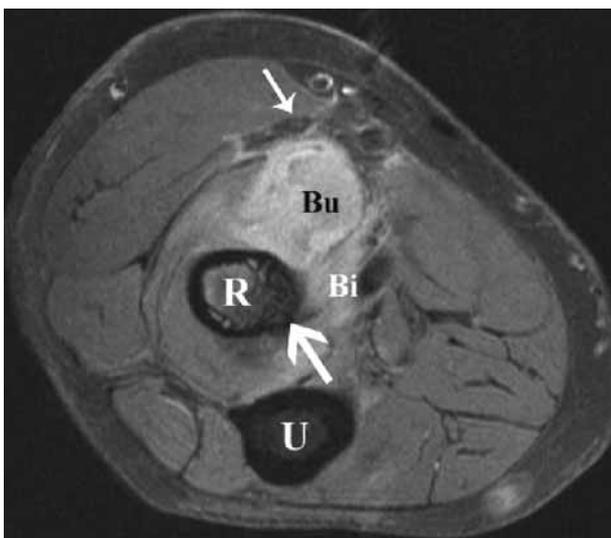
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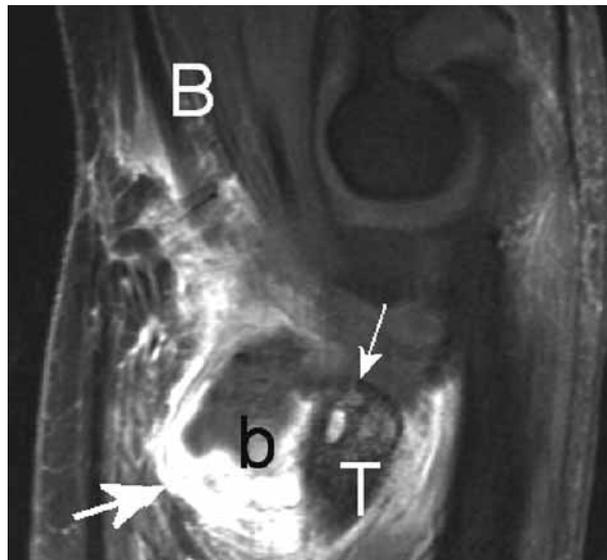


**Fig. 1.** — Lateral radiograph of the right elbow shows microcalcifications anterior to the radial tuberosity.



**Fig. 2.** — Axial gadolinium-enhanced fat suppressed T1-image of the elbow. Radial nerve (thin arrow). Bicipitoradial bursa (Bu). Radius (R) and ulna (U). Biceps tendon (Bi) inserting at the radial tuberosity (fat arrow).

between the mass and the surrounding soft tissues. On T2-weighted imaging the mass was of diffuse heterogeneous high intensity. On T1-weighted imaging the mass was found to be of low intensity and multiple calcifications could be seen inside. There was a significant Gadolinium uptake, especially in the outer areas of the lesion (fig 2 and 3).

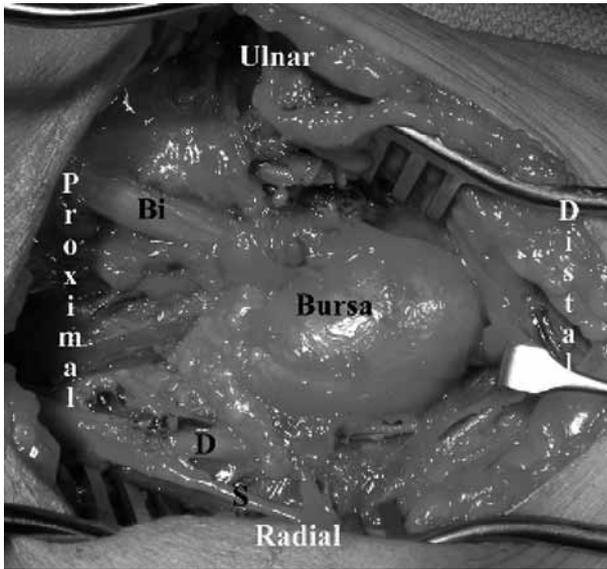


**Fig. 3.** — Sagittal gadolinium-enhanced T1-image of the elbow. Notice the peripheral rim enhancement at the margins of the radiobicipital bursa (fat arrow). Heterogeneous intermediate signal intensity (b) is suggestive for calcifications. Biceps tendon (B). Radial tuberosity (T) with reactive bone oedema (thin arrow).

Initially a sarcomatous malignant lesion was suspected ; however, after careful study of the MRI and a literature search, it was concluded that the MRI findings were most suggestive of a bicipitoradial bursitis.

Surgical exploration, removal of the lesion and histological investigation provided definite diagnosis and treatment. A curvilinear incision was made starting at the anterior elbow crease and continued on the radial side of the biceps tendon for about 8cm distally. The bursa was exposed through sharp and blunt dissection. Both the superficial and deep branch of the radial nerve were visualised before removal of the bursa. The bursa was wrapped around the distal biceps tendon with no clear margins between both structures and was densely adherent to the radial tuberosity (fig 4).

Histological investigations confirmed the diagnosis of a chronically inflamed bicipitoradial bursa with calcifications. In the early postoperative period, 10° of elbow extension and 15° of pronation were lost, but motion had returned to normal after one



**Fig. 4.** — Peroperative photograph of the right arm. The bursa envelops the distal biceps tendon (Bi). Compression of the deep radial nerve (D) by the bursa is obvious. There is no direct contact of the bicipitoradial bursa with the superficial radial nerve (S).

month. It took three months before the power of finger extension was equal on both sides. Thus far no recurrence of the bursa has been noted on clinical examination.

## DISCUSSION

Bursae are frequently interposed between tendons and bone. They allow the tendons to glide smoothly over the bony surface. The elbow's cubital fossa has two bursae: the bicipitoradial bursa and the interosseous bursa. The bicipitoradial bursa is located between the distal biceps tendon and the tuberosity of the radius. It partially or completely wraps around the biceps tendon. It ensures frictionless motion between the biceps tendon and the proximal radius during pronation and supination of the forearm (7).

Inflammation of the bicipitoradial bursa is a rather rare condition, of which only few reports can be found in orthopaedic literature (1, 2, 4, 6). Several causes for bursitis at this location are suggested, such as repetitive mechanical trauma or overuse (4,

7, 10), chemical or infectious synovitis (2, 5, 7), rheumatic disease (3, 7), partial tear of biceps tendon (1, 7), synovial cyst at the sacciform recess of the anterior elbow capsule (2) and synovial chondromatosis (6).

Clinically cubital bursitis almost always presents as a painful mass in the proximal forearm, somewhat restricting elbow motion. With pronation, the tuberosity of the radius rotates posteriorly, causing compression of the bursa between the biceps tendon and the radial tuberosity (3, 7). In severe cases the mass may compress the radial nerve. Compression of the deep radial nerve can result in weakness of the extensor muscles of the forearm, as in this case. Compression of the superficial ramus of the radial nerve may result in sensory loss at the dorsum of the hand and fingers. The median nerve is unlikely to be compressed because of its medial position relative to the bursa (5, 7, 8).

Accurate diagnosis of bicipitoradial bursitis requires imaging studies. In contrast to our findings, most authors report no abnormalities on plain radiographs (2, 5). In ultrasound studies the bursa appears as an hypoechoic or anechoic mass, surrounding a hyperechogenic nodule, the biceps tendon (5, 9). One author reports scintigraphic findings similar to our case: hyperaemia and a focus of intense uptake in the delayed phase were seen between the proximal radius and ulna (3). MR is the imaging investigation of choice for studying lesions in the antecubital fossa. It not only demonstrates the relationship between the bursa and adjacent structures, but is also of great value in distinguishing the bursa from other mass lesions in this area, such as ganglion cysts and tumours (5, 7).

Treatment is based on the patient's symptoms with a tendency towards surgical removal in case of continuing pain in spite of conservative measures or in the presence of nerve compression and/or restriction of movement. Conservative treatment consists of anti-inflammatory medication, relative rest or temporary cast immobilisation (7). Aspiration of the bursa and injection of a corticosteroid can be considered (9).

Our main objective in reporting this case is to make this pathological entity better known. Our own unfamiliarity with this lesion caused us to

initially suspect a malignant lesion. In retrospect, we should immediately have considered bicipitoradial bursitis as the most likely diagnosis.

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