Osteochondroma Associated With Complete Rupture of the Distal Biceps Tendon: Case Report

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Osteochondromas are the most common benign bone tumors. However, osteochondromas rarely involve the proximal radius. We present the case of a solitary osteochondroma that occurred in a critical area of the proximal radius near the insertion of the biceps tendon and ultimately led to rupture of the tendon. The lesion was confirmed histologically and resected, followed by successful repair of the distal biceps tendon using a suture anchor. *(J Hand Surg 2010;35A:1340–1343.*

Key words Proximal radius, biceps tendon, osteochondroma, rupture.

An osteochondroma is one of the most common bone tumors and constitutes 20% to 50% of all benign bone tumors.[1] It is well known that osteochondromas are produced by the growth of aberrant cartilaginous tissue of the physis and that growth of the lesion takes place through enchondral ossification, which give the impression that the lesion is not a true neoplasm.[2,3]

Whereas complications associated with osteochondromas are more frequent with hereditary multiple osteochondromatosis, it is uncommon for a solitary osteochondroma to become symptomatic after skeletal maturity.[2,4]

We present a case of a solitary ostechondroma involving the proximal radius, which caused rupture of the distal biceps tendon in a woman. The lesion was confirmed histologically and resected, followed by successful repair of the distal biceps tendon using a suture anchor. The patient was informed that data from the case would be submitted for publication, and she gave consent.

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CASE REPORT

A 59-year-old, right hand–dominant woman was referred to us for evaluation of insidious onset of pain and swelling in the left elbow for the past 4 months. The patient had been administered oral nonsteroidal anti-inflammatory drugs and was receiving physical therapy before presenting to our institute; however, treatment was not effective. She denied a history of trauma and premorbid symptoms in this area. Excluding the fact that the patient took oral medications for mild diabetes mellitus, she was in good health.

At the time of the initial presentation, a soft, cystic mass was palpable over the left antecubital fossa, lateral to the biceps tendon. The mass was 2 cm in diameter, mildly tender to palpation, and fixed to the deep tissues. Both active and passive range of motion of the elbow was full and symmetrical compared with the contralateral side. However, the patient had pain and notable weakness to resisted supination and elbow flexion. The distal neurovascular examination revealed normal findings.

Radiographic examination of the left elbow revealed an osseous mass, which had both cortical and medullary continuity with the underlying bone in the anterior aspect of the proximal radius (Fig. 1). It was well demarcated with a distinct cortical rim and no destructive changes. Magnetic resonance imaging showed the

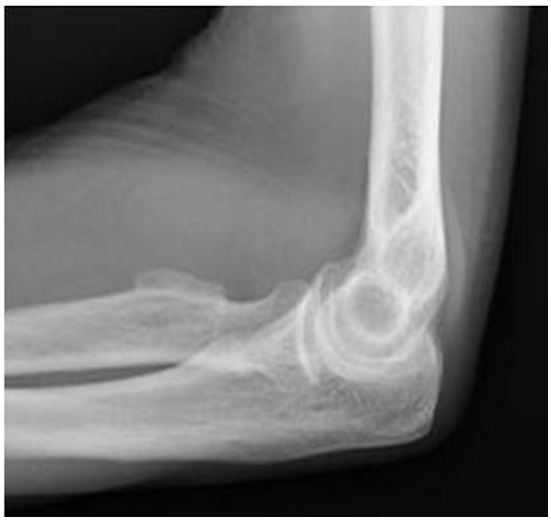

FIGURE 1: Lateral radiograph of the elbow, showing an osseous mass in the anterior aspect of the proximal radius. The lesion has both cortical and medullary continuity with the underlying bone.

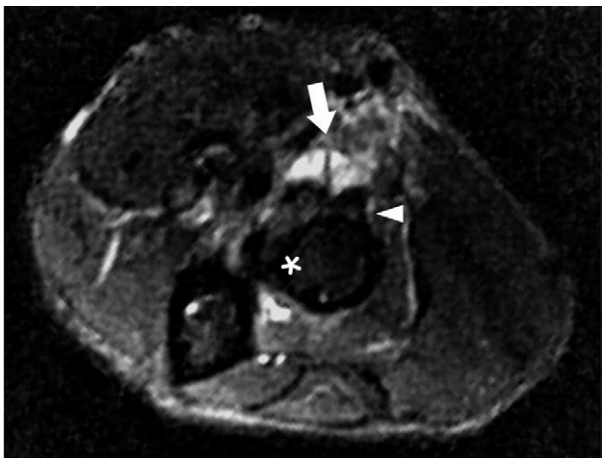

FIGURE 2: T2-weighted axial magnetic resonance imaging through the elbow shows the tumor (arrowhead) arising from lateral to the radial tuberosity (asterisk) and peritendious fluid collection (arrow) around the tumor.

lesion arising from the lateral aspect to the radial tuberosity, which appeared to contain a cartilaginous cap. Magnetic resonance imaging also showed another lesion with peritendinous fluid collection and altered signals in the region of the distal biceps tendon between the insertion and the musculotendinous junction, which suggested a rupture (Fig. 2). There was no evident uptake of radioisotope in the region of the trunk or extremities. Based on these examinations, we made a provisional diagnosis of a solitary osteochondroma of the proximal radius with associated complete rupture of the distal biceps tendon.

The patient underwent surgery under tourniquet control. A single, curvilinear incision was made over the antecubital fossa to visualize the distal biceps tendon and radial tuberosity. On anterior exposure of the biceps tendon, we found a hypertrophied synovial cyst containing synovial fluid firmly adherent to the biceps tendon, extending distally to the radial tuberosity. Whereas the bicipital aponeurosis retained its insertion intact, the distal biceps tendon was ruptured and mildly retracted. When the synovial cyst was dissected, a $2.0 \times 1.0 \times 0.5$-cm bone mass with a chondral surface was detected that appeared to be consistent with an osteochondroma, located lateral to the radial tuberosity (Fig. 3A,B). We easily identified the radial tuberosity with degenerative tissue at the distal tendon remnant.

We performed en bloc excision using osteotomes and rongeurs. The distal biceps tendon was reattached to its insertion anatomically using a bone anchor (Super Revo, 5 mm; Linvatec, Largo, FL) after a trough was created in the radial tuberosity.

Histopathologic assessment revealed synovial tissue to chronic tenosynovitis and a cancellous bone with an overlying cartilage cap to a typical osteochondroma. There was no evidence of dysplastic cartilage cells (Fig. 4).

Postoperatively, the elbow held 90° of flexion in a posterior splint with the forearm in neutral rotation for 3 weeks. The patient then began active range of motion with the elbow in a dynamic flexion brace that blocked the terminal 30° of extension. At 6 weeks, active movement through a complete range of motion was allowed, with strengthening exercises at 12 weeks. At the 15-month follow-up, the patient had full range of motion and regained symmetric strength in flexion and supination of the elbow without clinical or radiographic evidence of recurrence.

DISCUSSION

Although growth of a conventional osteochondroma usually parallels that of the patient, and the lesion often becomes quiescent when the epiphyses have closed, enlargement of the tumor after skeletal maturity has been commonly documented and even considered to be a natural course of the lesion.[2] However, substantial growth of the tumor after physical closure may indicate malignant transformation.[3]

The common sites of osteochondromas are the distal femur, proximal femur, proximal tibia, humerus, foot, scapula, pelvis, proximal fibula, and distal radius. Osteochondromas usually occur in the metaphyseal region of the bones of the limbs. Rarely, the tumor has involvement of the proximal radius.[3,4]