

Irreducible antero-medial dislocation of the radius

A case of biceps tendon interposition

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A 5-year-old girl was pushed over while standing on her hands and twisted her outstretched left arm. Radiographic examination showed a dubious fissure in the radial head and after 1 month elbow function was normal with only 10 degrees loss of flexion.

2 years later she was referred to our hospital with a progressive cubitus valgus of 30 degrees. She had no pain but lacked 40 degrees of elbow flexion; pronation/supination was normal. The radial head was palpable in the fossa cubiti, and radiographic examination showed an antero-medial dislocation of the radius (Figure 1). Closed manipulation failed. Because of the 2-year-history and the absence of pain, no treatment was recommended.

In the next 2 years the range of motion decreased with 15 degrees lack of extension and pro/supination 70/80 degrees; in full pronation there was only 90 degrees flexion. To prevent further loss of function by hyperplasia of the radius, open reduction was performed using the lateral approach. Lateral to the dislocated radius the biceps tendon was found to prevent the radius from moving laterally and keep it in a dislocated antero-medial position.

After cutting the biceps tendon at the insertion and shortening the radius by 3/4 cm, reduction was easily obtained. The osteotomy was fixed by a plate and screws. The biceps tendon was reattached to the tuber radii. Repair of the ligamentum annulare using the m. triceps tendon provided a stable situation. The elbow was stabilized in supination for 6 weeks by K-wire fixation of the radial head and capitulum. 4 months post-operatively the patient was free of pain, flexion/extension had improved, but pronation/supination was lost.

Discussion

Dislocation of the radius in antero-medial direction is rare; the majority of reported cases describe an antero-lateral dislocation. To our knowledge only one case of irreducible antero-medial dislocation of the radius due to biceps tendon interposition has been reported (Armstrong and Mc Laren 1987). However, the antero-medial position of the radius radiographically is probably pathognomic for biceps tendon interposition.

Figure 1. Antero-medial traumatic dislocation of the radius in a 9-year-old girl after 4 years.



Preoperatively.



1 year after open reduction.

We believe that the trauma mechanism is a combined hyperextension and hyperpronation of the elbow. In hyperextension the position of the radial head is slightly anterior to and in line with the biceps tendon. With hyperpronation the radial head rolls over the biceps tendon to medial position, where it is entrapped by flexion of the elbow.

Post-traumatic dislocation should be distinguished from congenital dislocation. The latter is often bilateral, without relevant trauma and most often in the antero-lateral direction. As in our case and in the case reported by Armstrong and McLaren (1987) the correct diagnosis was overlooked at first. Open reduction was, however, carried out 1 week after the accident, with excellent results. Even though our patient lost rotation of the forearm, the operation prevented further loss of flexion/extension.

Reference

- Armstrong R D, McLaren A C. Biceps tendon blocks reduction of isolated radial head dislocation. *Orthop Rev* 1987; 16 (2): 104–8.