Iatrogenic ulnar nerve palsy following external fixator application is a complication that has so far not been described. In the literature we find reports describing ulnar nerve palsy associated with distal radius fracture, but not from external fixator application.

Introduction

Case

We report the case of a 78-year-old women who presented with an unstable multifragmentary intra-articular distal fracture of the right radius (AO 23 C3) (Fig. 1). No neurologic deficits were detected upon admission of the patient. The fracture was first stabilized with an external fixator with two Schanz screws in the radius and two 2.5mm Schanz screws in the second metacarpal bone (Fig. 2). After determining detailed fracture characteristics with a CT scan, definite osteosynthesis of the fracture was successively applied via a dorsal approach (Fig. 3). The post operative course was uneventful, the wrist supported in a soft wrist cuff. At the six weeks follow up visit the patient describes a strength deficit in her first, second and third finger of the right hand. No lack of or loss in sensibility is being described by the patient at this point. Plain radiographs six weeks after surgery showed no secondary dislocation with both plates in situ. Neurologic examination revealed a neuropathy of the distal motor branch of the ulnar nerve with an isolated paresis of the first and second interosseus muscle as well as the M. adductor pollicis on the right hand side. In line with the radiographs after external fixator installation the lesion most probably might be caused by the distal pin during insertion with the drill or due to its protrusion (Fig. 2). Eight months after initial surgery the patient wished removal of the implants which was done so without complications (Fig. 3). The neurological deficits remained, though, and so far the patient has refused any additional, especially surgical treatment such as nerve revision.

Conclusion

Ulnar nerve palsy of the terminal motor branch following external fixator installation after a displaced multi-fragmentary intra-articular distal radius fracture is a rare complication. Until now the literature reports only cases of ulnar nerve palsy associated with the fracture itself. In conclusion, when placing a joint bridging external fixator after a distal radius fracture, it is important to be aware of rare, but possible anomalies in ulnar nerve branching (Fig. 4). A subtle insertion technique is mandatory and a detailed clinical check-up should be done after external fixator installation to detect neuropathies early on to discuss early intervention to avoid long term damage.

References