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DISLOCATION OF THE TRAPEZIUM (MULTANGULUM MAJUS)

A Case Report

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A case of complete, closed dislocation of the trapezium is reported. The treatment was open reposition and fixation with two Kirschner wires. No avascular necrosis occurred. Two and a half years after the injury there were no subjective complaints, the mobility and strength of the thumb were normal and there were no radiological signs of arthrosis.

Key words: carpal bones; dislocations; multangulum majus; trapezium; wrist injuries

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Dislocation of the trapezium is an extremely rare injury. Only 14 cases have been described in the literature and only about one third of these were complete dislocations. A case of complete, closed dislocation is presented here.

CASE REPORT

A 23-year-old man, a truck-driver, had his left hand compressed between a container and a truck he was unloading. At a local hospital he was treated with elevation of the hand and a dorsal plaster slab. Five days after the injury he was admitted to the Orthopaedic Department, Århus County Hospital. Diffuse oedema of the hand was still present, and distinct pain was elicited by palpation in the tabatière. There was no apparent deformity. The sensibility was normal and the movement of the thumb was only slightly restricted. X-ray examination including tomography and stereoscopic investigation showed the trapezium to be dislocated in a radial and dorsal direction. The articulation with the scaphoideum, the trapezoideum and the first metacarpal bone was involved. Thus, it was a complete dislocation. Furthermore, a couple of small, bony avulsions from the ulnar and volar parts of the trapezium were seen (Figure 1). Closed reduction was attempted but was unsuccessful. Open reduction was performed through a transverse incision in the tabatière, and the bone was fixed with two Kirschner wires (Figure 2). The arm was immobilized in a circular plaster cast, including the proximal phalanx of the thumb, and including the elbow to prevent pronation-supination. After 4 weeks the Kirschner wires were removed, but the immobilization was continued for a further 3 weeks. After 4 weeks of training there were no subjective complaints, and the mobility and strength of the thumb were normal. The patient returned to his former occupation. There was no avascular necrosis and two and a half years later no radiological signs of arthrosis were found.

DISCUSSION

The ligaments attaching the trapezium to the surrounding bones are very strong. Therefore complete dislocaton of the trapezium is only seen after violent, direct trauma. Indirect trauma, transmitted by the thumb, may produce an incomplete dislocation, leaving the carpometacarpal joint intact while the trapezio-carpal articulations are disturbed.

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Figure 1. Preoperative X-ray. Complete dislocation of the trapezium.

Figure 2. The dislocation has been reduced and the trapezium transfixed with Kirschner wires.

The case reported by Siegel & Hertzberg (1969) was complicated by a lesion of the motor branch of the median nerve. This was not found in the present case.

As regards treatment, opinions are divided. Closed reduction is sometimes possible (Dunn 1972). Russell (1949) reported a case of anterior dislocation where reposition was not possible; the dislocation was accepted and almost normal function of the thumb was achieved. However, this case was an incomplete dislocation, with an intact carpometacarpal joint. Peterson (1950) recommended excision of the trapezium and reported good results in two patients treated in this way. His reason for excision was the avascularity of the luxated bone. Siegel & Hertzberg (1969) and Seimon (1972) used open reposition and fixation with Kirschner wires. Both patients developed a stiff carpometacarpal joint; however, the functional result was good. Both the cases were open dislocations, with severe soft tissue injury, and this may have contributed to the stiffness. They did not report avascular necrosis, neither was it seen in the present case. Considering this, open reposition and Kirschner wire fixation are recommended.

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