DISLOCATION OF THE ELBOW AND INCLUSION OF THE MEDIAL EPICONDYLE IN THE ADULT

D. W. PURSER, MANCHESTER, ENGLAND

From the Manchester Royal Infirmary

The incarceration of a medial epicondyle is a well recognised sequel of dislocation of the elbow in childhood. Patrick (1946) stated that the age group for this injury was from ten to seventeen years. The fragment is the entire epiphysis shorn from the metaphysis by the traction of the medial ligament. Separation occurs at the epiphysial line. Smith (1950), reviewing 143 cases of injury to the medial epicondyle seen over a period of fifteen years at the Presbyterian Hospital, New York, stated that there were only six adults in the series. In one case the injury was the result of direct violence, and in five cases the avulsion was associated either with a dislocation of the elbow or a fracture of the radial head. He did not mention any adult case in which incarceration occurred. One of Roberts's (1934) four cases was in an adult but he did not state categorically that the fragment was included when the elbow dislocation was reduced.

CASE REPORTS

Case 1—A woman of fifty-six attended the Manchester Royal Infirmary with a dislocation of her left elbow. Nineteen years previously she had sustained a fracture of the lower end of the humerus, which had required reduction. Radiographs showed a lateral dislocation of the elbow and three opaque bodies underlying the trochlea (Fig. 1).

The dislocation was reduced under a general anaesthetic. After reduction the elbow was put through a trial range of movement. When the elbow was extended the forearm became abducted, and redislocation occurred. Radiographs taken after a further reduction showed the medial epicondyle lying between the trochlea and the ulna. An attempt to extract it by manipulation of the elbow and strong faradism to the flexor muscles (Patrick 1946) was unsuccessful (Fig. 2).
Operation—The elbow was explored through a medial incision, and a fragment of the epicondyle was hooked from the joint. It presented one cancellous surface which corresponded to a defect of the inferior margin of the medial epicondyle. Arising from the fragment was part of the medial ligament of the elbow, the anterior aspect of which gave origin to a few fibres of the flexor muscles. The fragment was replaced and the wound closed. Radiographs after operation (Fig. 3) illustrated the site of origin of the fragment, and showed an old area of ossification in the medial ligament.

Case 2—A man aged twenty-five reported with an obvious postero-lateral dislocation of the elbow. He gave a history that when six years old he had injured his upper arm "above the elbow." Radiographs (Fig. 4) showed a large bony fragment, apparently derived from the medial epicondyle, lying in the joint. It was smooth and rounded, as was the epicondyle, and the appearance did not suggest a recent fracture. At manipulation the posterior displacement was easily reduced, but lateral dislocation at first persisted. Direct pressure on the outer aspect corrected this with a snap. Trial movement showed a block to flexion beyond a right angle. By gently abducting and then adducting the forearm, the included epicondyle was freed. It then appeared as a loose fragment over the inner side of the humerus (Fig. 5). Thenceforward full flexion was possible.

COMMENT

Two cases are reported of dislocation of the elbow in adults in which the medial epicondyle was incarcerated after manipulation. In Case 1 the included fragment had been recently
avulsed from the inferior margin of the medial epicondyle. In Case 2 there had been non-union of the epicondyle after an avulsion in childhood, and at a later dislocation of the elbow the fragment was incarcerated.

Both cases illustrate a physical sign which has also been found of value in children. When an uncomplicated dislocation of the elbow has been reduced, an almost full range of passive movement can be obtained in the still anaesthetised patient. But when the medial epicondyle has been incarcerated, only a small range of passive movement is possible: flexion is blocked, and as the elbow is extended a progressive valgus deformity develops and redislocation occurs.

I am indebted to Mr John Charnley and Mr D. Ll. Griffiths for permission to publish these cases, and for their helpful criticism in the preparation of the paper.

REFERENCES

