LOCKED FINGER TREATED BY MANIPULATION

A REPORT OF THREE CASES

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We describe two examples of a locked middle finger and one of a locked index finger. All three patients were successfully treated by manipulation under local anaesthesia. Although the condition has not often been reported in the literature we suggest that it may not be rare and that a trial gentle manipulation under local anaesthesia should be tried before treatment by operation.

The literature contains few reports of locked finger (Honner 1969; Harvey 1974) although cases of locking are probably not rare. Aston (1960) found five cases in 10 months and Goodfellow and Weaver (1961) were also able to describe five cases. Many senior doctors working in accident and emergency departments recall having seen locking and it is probable that many such cases are seen by junior doctors who diagnose subluxation of the metacarpophalangeal joint and manipulate them without reference to orthopaedic surgeons. Indeed in the case reports many patients who had initially had episodes of locking (Langenskiöld 1949; Flatt 1958; Bruner 1961; Yancey and Howard 1962) had learnt to unlock them themselves and one patient in Goodfellow and Weaver's series had had an episode of locking five years previously, relieved by her general practitioner who had struck it with a book.

In this paper we present a further three cases, including locking of the index finger in an elderly patient. This has not been described previously. Treatment by operation has been advocated in the past but we suggest that some cases may be amenable to manipulation under local anaesthesia.

CASE REPORTS

Case 1. A 59-year-old man was getting up from a kneeling position when he put all his weight on to his half-closed fist. He then found that he was unable to move his right middle finger. He had had no similar episodes previously. He presented at the accident and emergency department and was found to have no movement at the metacarpophalangeal joint. When the patient was referred to a hand clinic the following day he held his middle finger in a position of semiflexion at the metacarpophalangeal joint and full extension at the interphalangeal joint (Fig. 1). The last 30 degrees of extension, active and passive, at the metacarpophalangeal joint was not possible. He had no difficulty in flexing the metacarpophalangeal joint or interphalangeal joints. There was also some restriction of active extension of the metacarpophalangeal joint of the ring finger due to the anatomical arrangements of the extensor tendons, but passive movement of that joint was full.

Radiographs showed mild degenerative changes and oblique views revealed spurs on the sides of the head of the third metacarpal (Figs 2 and 3). Under digital nerve block with two per cent lignocaine the joint was manipulated with traction in the line of the deformity and alternate medial and lateral rotation. Simultaneously the finger was gently extended and he immediately regained full movement. Following this the finger was left unsplinted and he was encouraged to use his fingers. He developed a small effusion and because of this the finger was slightly stiff for two weeks. On review at three months he had had no further episodes of locking and he had full active extension. There was slight pain on stretching the radial collateral ligament, but there was no clinical or functional instability of the joint.

Fig. 1

Fig. 2

Fig. 3

Case 1. Figure 1—Photograph of the right hand. Figures 2 and 3—Radiographs of the metacarpophalangeal joint taken after reduction. Osteophytes and bony spurs can be seen.

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Case 2. A 78-year-old woman caught her right index finger while lifting a door catch. After this she was unable to straighten the finger and so presented at the accident and emergency department. There was no history of similar episodes. On examination there was a little bruising over the dorsum of the metacarpophalangeal joint, she held the finger in a position of semiflexion at the metacarpophalangeal joint and full extension at the interphalangeal joint. The last 20 degrees of extension, active and passive, at the metacarpophalangeal joint was not possible although she had no difficulty in flexing both the metacarpophalangeal and interphalangeal joints. She had some clinical evidence of arthritis in several of the small joints of the hand. Radiographs of the joint showed some degenerative changes and an oblique view revealed a volar protuberance (Fig. 4).

Fig. 4

Case 2. Oblique radiograph of the metacarpophalangeal joint taken after reduction. A volar prominence can be seen.

Manipulation under digital nerve block was carried out in the same way as described in Case 1 and she immediately regained full movement. At review three months later she had had no further episodes of locking and no symptoms related to the joint. The range of movement of the joint was full and the joint was clinically stable.

Fig. 5

Case 3. Oblique radiograph of the metacarpophalangeal joint.

Case 3. A 68-year-old woman suddenly noticed pain and inability to straighten her left middle-finger. She was not using her hand at the time. The next day it was no better and she presented at the accident and emergency department. She had had no previous problems with

the hand. On examination the metacarpophalangeal joints of the middle and ring finger were swollen. She was unable actively or passively to extend the metacarpophalangeal joint of the middle finger through the last 30 degrees, although flexion of the joint was full as were movements of the other joints in the hand. Attempts to straighten the finger passively were painful and were prevented by a rigid resistance. Oblique radiographs showed a volar prominence (Fig. 5). Under a digital nerve block the finger was manipulated as described for Cases 1 and 2 and she immediately regained full movement. When reviewed five weeks later she was free of symptoms and had had no further problems with her hand. Movements of the metacarpophalangeal joint were full and painless and the joint itself was stable.

DISCUSSION

Some unusual causes of locked finger have been described in the literature including abnormally shaped articular cartilage of the metacarpal head (Flatt 1961), catching of the sesamoid bone behind the volar lip of the metacarpal (Flatt 1958; Bloom and Bryan 1965), and a loose body (Honner 1969). However, most cases have been explained by catching of the palmar metacarpophalangeal ligament or radial accessory collateral ligament on either an osteophyte or a congenital bony prominence (Goodfellow and Weaver 1961; Harvey 1974). Harvey's review divided patients into a degenerative group of elderly patients with osteoarthritis and a spontaneous group in younger patients. In the degenerative group the fingers involved were the middle (eight patients), ring (two patients), and the little finger (one patient). One of our patients (Case 2) is the first case of a locked index finger in an elderly patient described in the literature. Cases 1 and 3 confirm that the middle finger is the most commonly affected finger in this age group.

In patients presenting with episodes of locking, this condition must first be differentiated from trigger finger with which it has been confused (Bruner 1961). If the volar osteophytes and protuberances which cause the condition are to be identified it is important that the radiographs are of good quality and oblique views must be taken. Although patients have been able to manipulate their own fingers the only previously successful report of manipulation of a locked finger is that of Yancey and Howard (1962) and their patient eventually needed an operation. All other authors who have tried manipulation under anaesthesia (Alldred 1954; Flatt 1958; Aston 1960; Flatt 1961; Goodfellow and Weaver 1961) have found it impossible. Langenskiöld (1949) while attempting a manipulation under anaesthesia caused an intra-articular fracture, and Harvey (1974) suggested that the capsular tears seen by Alldred (1954) and Yancey and Howard (1962) were caused by the trauma of attempted manipulation.

Some patients improve spontaneously (Aston 1960) and the most recent review (Harvey 1974) indicates that manipulation is contra-indicated and that no treatment should be given for four weeks to see if spontaneous improvement occurs. If the patient is not

improved then the joint should be explored via a palmar incision and the accessory collateral ligament divided. We suggest that this is not a rare condition and it should be recognised so that it can be treated with an understanding of its true pathology. We also suggest that a gentle manipulation under local anaesthesia is not contra-indicated and may make early operation unnecessary.

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