CONGENITAL CLAWING OF THE LITTLE FINGER

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SUMMARY

Three cases, with four fingers involved, of hyperextension at the metacarpophalangeal joint of the little finger, corrected by capsuloplasty of the volar plate.

The deformity characterised by hyperextension of the metacarpophalangeal joint and flexion of the proximal and distal interphalangeal joints is commonly attributed to intrinsic weakness secondary to ulnar nerve pathology. This deformity may also be compensatory to camptodactyly in which the power of the intrinsic muscles is usually normal.

We have recently treated three young female patients aged between eight and fifteen, with four little fingers characterised by a "Claw" deformity considered secondary to congenital laxity of the volar plate of the metacarpophalangeal joint. No antecedent trauma was noted in any patient. All had developed a progressive "claw" deformity of one or more of the little fingers always involving the dominant right hand. In one patient similar deformities were present in her mother and grandmother. All girls felt disabled by the appearance, by pain, or a subjective feeling of instability.

Physical examination was similar in each patient with a resting position of the finger in 25° hyperextension at the metacarpophalangeal joint and 45° flexion at the proximal and distal interphalangeal joints. (Figs. 1a & b.). There was a full range of passive motion of the finger but an inability to correct the deformity actively. The flexion deformity of the finger could be actively corrected when the metacarpophalangeal joint was held flexed at 30°. In no case was there any deformity in the ring finger and all patients had normal power in the first dorsal interosseous and adductor muscles. There was no sensory disturbance and two-point discrimination was less than 5 millimetres on the radial and ulnar aspects of the little finger. X-rays revealed no abnormality except for confirming the abnormal posture of the involved fingers.

TREATMENT

Every patient welcomed surgical correction of the deformity. As congenital laxity of the volar plate appeared to be the only pathology, we felt the most logical approach for correction of the deformity was volar plate capsuloplasty similar to that described by Zancolli for claw hand secondary to intrinsic paralysis (1957). The same operative procedure was used for each patient through a transverse incision made in the distal palmar crease. The A1 pulley was incised longitudinally and flexor tendons retracted, thereby exposing the volar plate. This was elevated from the neck of the metacarpal by sharp dissection and freed on its sides by longitudinal incisions. Using a sharp pointed awl and drill two adjacent and communicating holes were

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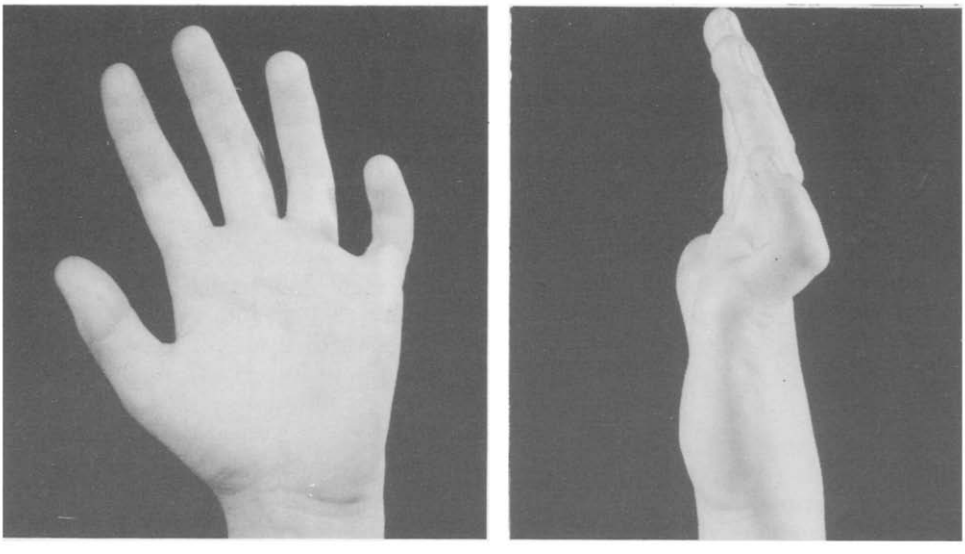

Fig. 1. Case 1. a: AP of affected finger before surgery. b: Lateral of affected finger in resting posture before surgery.

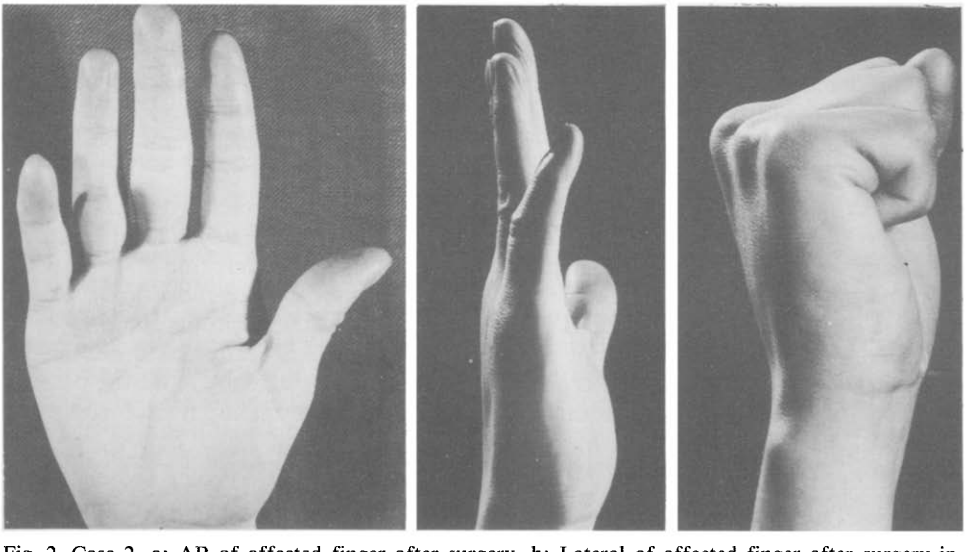

Fig. 2. Case 2. a: AP of affected finger after surgery. b: Lateral of affected finger after surgery in extension. c: Lateral of affected finger after surgery in maximum flexion.

made in the metacarpal neck from anteriorly to posteriorly in the transverse plane. The volar plate was advanced proximally until it held the metacarpophalangeal joint in 30° of flexion and attached to the roughened metacarpal neck by a wire stitch taken through the drill holes. A Kirschner wire can also be passed across the joint to reinforce the desired amount of flexion. Postoperatively a short-arm cast was applied up to but not including the proximal interphalangeal joint. Three weeks later the cast and pin were removed and mobilisation was begun.

RESULTS

One patient was lost to follow-up, although full correction of the deformity had been obtained when last seen one month after removal of the plaster cast. The second patient had had a good correction with an average resting posture of the finger of 12° flexion at the metacarpophalangeal joint and minimal deformity at the interphalangeal joints (Figs. 2a, b and c). The patient with both little fingers involved has had recurrence of the deformity on the left but good correction on the right. The recurrence which showed a negligible improvement over the preoperative status, occurred rapidly after removal of plaster and a technical failure is likely. Where good correction has been maintained the patients have been pleased with the function and cosmesis and state that their ability to "use" the finger has been increased although this is somewhat intangible and difficult to confirm.

Except for the one recurrence there have been no complications.

DISCUSSION

Very little reference has been found in the literature regarding this congenital clawing deformity. This may be due to the deformity being uncommon (which we doubt) or rarely giving rise to enough trouble for the patient to seek medical attention. With our patients, however, the disability was real and when operative correction was successful the patient was pleased. All our patients were young females with involvement of the little finger only. The significance of this is not known at present.

Our method of treatment deals directly with the underlying problem of congenital laxity of the volar plate. It is similar to Zancolli's recommended treatment for acquired clawing (1979), although we prefer to immobilise the metacarpophalangeal joint at 30° flexion.

It might be argued that these patients could have been treated with splinting to keep the metacarpophalangeal joints flexed but they were reluctant to accept splinting and wished more permanent correction of the deformity. A similar deformity may be seen in association with these conditions which must be excluded: intrinsic weakness from nerve damage or muscle disease, camptodactyly in which the proximal interphalangeal joint cannot be extended, and traumatic boutonnière deformity in which the distal interphalangeal joint will be extended and the patient incapable of extending the proximal interphalangeal joint against resistance.

Although our numbers are few and the length of follow up is quite short, this method may prove satisfactory for congenital laxity of the volar plate of the metacarpophalangeal joint in a patient having sufficient symptoms to warrant treatment.

REFERENCES

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