

ERIK JENSEN, AARHUS, DENMARK:

EXTRA-ARTICULAR OPERATION METHOD FOR HAMMER-TOE

The operation method generally employed is intra-articular, as you know; and it is performed most readily by making a longitudinal incision on the plantar surface of the first interphalangeal joint — cut across the tightening tendons and ligaments — open the joint — luxate the capitulum of the first phalanx out of the wound — and resect it with bone-pincers. — The operating wound is closed — and the operation is thus completed. This method is extremely simple and easy to carry out — brief, as it takes but a few minutes — but, cosmetically it is hardly quite satisfactory, as it is often followed by deviation of the toe — and functionally it is even more unsatisfactory, as the operation does away with the mobility of the toe.

In several cases, I have employed the method that was suggested by *Tierny* (*Revue d'orthopédie*, 1926). The method gives a good cosmetic result; and the function of the toe is preserved, the operation being extra-articular.

Tierny's method is as follows: By an ovalish incision, the skin is removed together with the underlying bursa from the dorsal side of the extensor tendon. A narrow knife is introduced between the tendon and the bone, and the extensor tendon is divided over the apex of the hammer-toe. The cut-ends of the tendon are pulled apart by means of small retractors, baring the dorsal part of the epiphysis of the first phalanx. — On the dorsal surface of this — near the transition into the joint cartilage — a rather deep hole is drilled by means of a narrow trephine, in a direction corresponding with the axis of the 2' and 3' phalanges. The epiphysis is resected with bone-pincers (or with Giglis wire-saw) at the border of the diaphysis. The

free end of the diaphysis is cut conical — a grooved chisel may be employed for this — and then the loose epiphysis is rotated so as to come in contact with the diaphysis — an easy manœuvre; and then the toe is straight. — The cut-ends of the extensor tendons are now sutured tightly, and the cut-edges of the skin are likewise pulled tightly together, by which both integuments (tendon and skin) will act as a splint for the altered position of the epiphysis. The wound is bandaged — the sutures are removed after 1 week — and the patient gets up after 2 weeks.

I have had the opportunity of operating altogether 4 cases after this method. The results have been good, functionally as well as cosmetically; and it is my impression that even though this method takes a little more time and is somewhat more complicated than the intra-articular operation, it gives greater satisfaction to the patient.

The observation period of my cases has been only 3—5 months, so I am not able to make any statement as to the durability of the result. The question is merely whether in such a small matter as a hammer-toe one is willing to take some more trouble and time — or if one prefers the brief and easy procedure of the intra-articular operation.

DISCUSSION:

Sven Johansson, Göteborg:

Like *Bülow-Hansen, J.* had seen some extreme cases in which radical treatment with resection of the capitula had proved useful.

A couple of years ago, *J.* had operated an extreme bilateral case — a man who was completely disabled from this lesion. The operation, performed on one foot, consisted in resection of the capitula of the 2'—5' toes together with operation for hallux valgus — chiseling of exostosis + capsulotomy + correction.

Now the patient had returned to have the same operation performed on the other foot, as his trouble had been relieved considerably by the first operation.

Langenskiöld, Helsingfors:

Starting from the hypothesis that the hammer-toe is a secondary change, the sinking of the capitula of the metatarsal bones being the primary lesion, brought on by a disturbance of the muscular balance — even in the so-called static cases — I have for several years been treating such cases with transposition of the extensor tendons to the capitula metatarsalia.

The results are good.

Bülow-Hansen:

I merely wish to add that I put a plaster cast on the foot in corrected position, this bandage staying on for 3 weeks; the last week the patient is allowed to walk about with the bandage. Then, as mentioned before, he is supplied with *Nyrop* shoes. Soon after, as a rule, the patient will be able to work.

Bergmann, Malmö, Sweden:

The operation method described by Dr. *Jensen* makes it impossible to correct a marked degree of hammer-toe at the same time. In such cases it will be necessary to resect a rather large section of the phalanx before it is cut conical and introduced into the bone channel. Apart from this, I can not see that there is any particular advantage in preserving the mobility of the interphalangeal joint. In the operation I have been performing for this deformity through a number of years, I have tried to obtain the greatest possible firmness in the interphalangeal joint, as I think this is the safest way to guard against a relapse. So I do not resect the capitulum only — perhaps together with the adjacent part of the phalanx, depending upon the degree of the deformity — I also remove the cartilage from the articular surface of the next phalanx.

Giertsen, Oslo:

Like other orthopedists, I have also made my mistakes as to the treatment of hammer-toe, as I have performed exarticulation for this lesion. But after I had seen a couple of these cases a year later, I never employed this treatment any more.

I have not met with any cases so severe as those described by *Bülow-Hansen*. I have been operating on the single hammer-toe with lateral incision and resection; and I agree with *Bergman* that shortening + ankylosis is of great importance for the prevention of relapse.

As it often happens that a hammer-toe patient would like to be operated on, but is unable to afford the time for confinement to the sick-room, I have performed the operation altogether policlinically. After the operation, I put on a simple bandage with plaster felt pads on the dorsal and plantar surfaces, but without any accurate correction. The patient walks about with his bandage for a couple of weeks, whereafter, if necessary, I make a modeling reposition by which the ideal position is obtained — without as much as one day in bed.