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ON THE TREATMENT OF THE LOSS OF OPPOSITION

By

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Almost everything has already been said about the surgical approach to restore the opposition of the thumb. I intend only in this paper to expose the simple technique we employ.

Opposition is a complex movement in which 4 long muscles and 4 short ones are used, and consists in a combined *extension* (by the short and the long extensors), *abduction* (by short and long abductors), *flexo-pronation* (by the short and long flexors and the short abductor), *opposition* (by the opponens and the short flexor) and *adduction* (by the adductor).

This complexity makes a difference between the ideal result reached when only the motor thenar branch of the median nerve is cut, and those of the severe parallized hand of some poliomyelitic patients. Between these two extreme cases we can see many degrees.

Of course before performing any tenoplasty the joint must be mobile, and if necessary we perform a capsulectomy of the carpometacarpal joint with or without rotatory osteotomy on the metacarpal. When the deformity is too fixed we carry out extirpation of the trapezium keeping the metatarsal bone in place with a Kirschner wire for three weeks.

The tenoplasty technique I have employed in our last 53 cases of loss of opposition has been as follows:

The pulley. I use as pulley the natural one made by the abductor digiti quinti in its insertion in the pisiform bone.

I think this pulley is a very good one because it never slips, as often happens using the tendon of the flexor carpi ulnaris; because many traumatic patients have scars in the forearm and it is too dangerous to make pulleys near them, because it works equally well whether we use muscles from the anterior side of the forearm or from the dorsum as a motor; and because the first essential principle of tenoplasty for opposition expressed by *Bunnell* is "The tendon should pass in the direction of the pisiform bone".

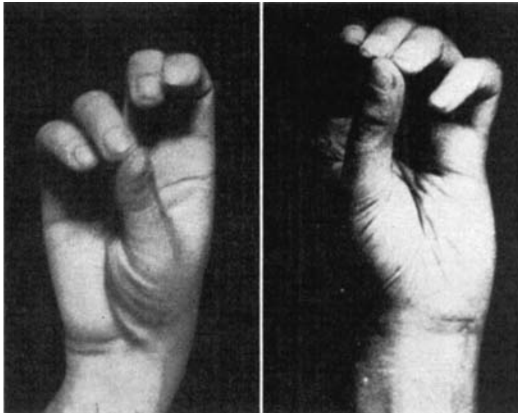


Fig. 1. *Fig. 2.*

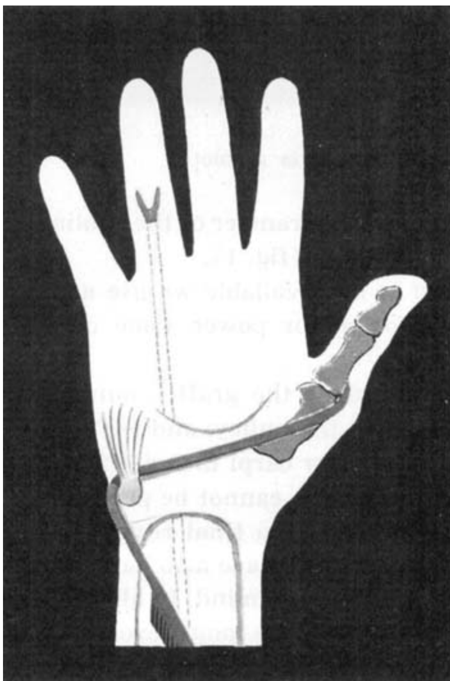


Fig. 1.

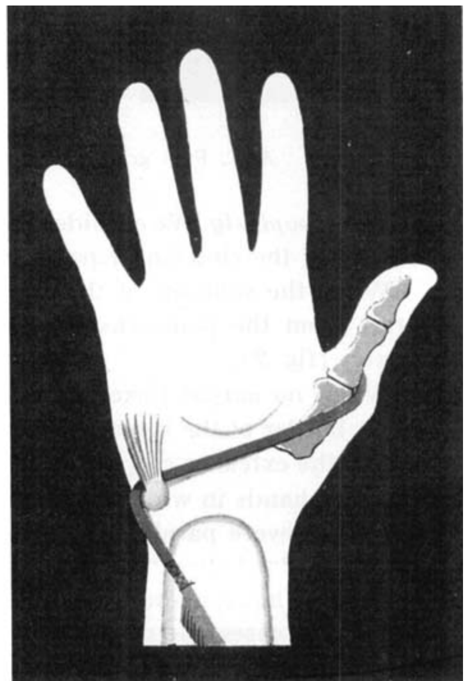


Fig. 2.

Fig. 1. J. LL. Trasplant sublimis of the ring finger.
Fig. 2. E. P. Free graft and motor with flexor carpi ulnaris.

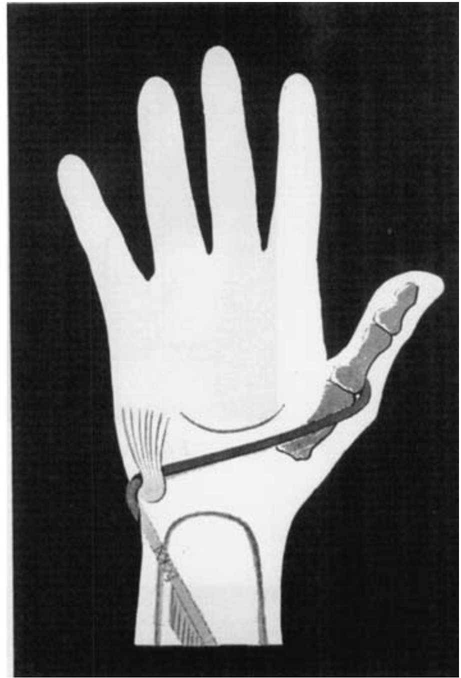


Fig. 3.
A. C. Free graft and extensor carpi radialis as motor

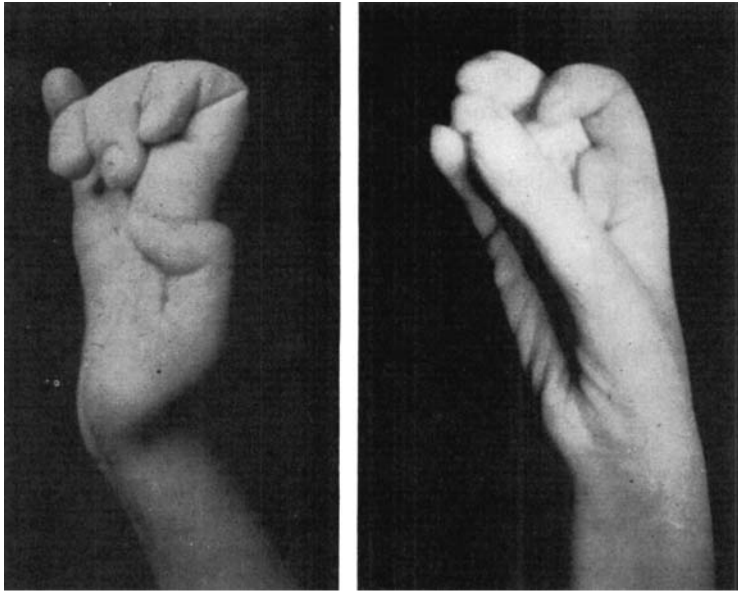
The tenoplasty. We consider the best to be the transfer of the sublimis tendon of the ring finger passing by the pulley. (fig. 1).

When the sublimis of the ring finger is not available we use a free graft from the plantarks tendon, and for motor power some carpal flexor. (fig. 2).

When no carpal flexor is available we cross the graft around the ulnar border of the forearm after passing via the pulley, and we use as motor the extensor carpi radialis or the extensor carpi ulnaris (fig. 3).

Those hands in which the described techniques cannot be performed are very severe paralytic hands. Many authors as a final resort make a bone bridge between the first two metacarpals. I have also performed some bone block operations. But I have changed my mind. In almost all the severe cases one muscle is spare, very often the long flexor of the thumb, and it is possible to obtain a better result by making an arthrodesis of the thumb with a Kirschner wire and transplanting the flexor pollicis longus by the usual pulley as fig. 4 shows.

If the flexor pollicis longus is not available, we make a free graft from



before after

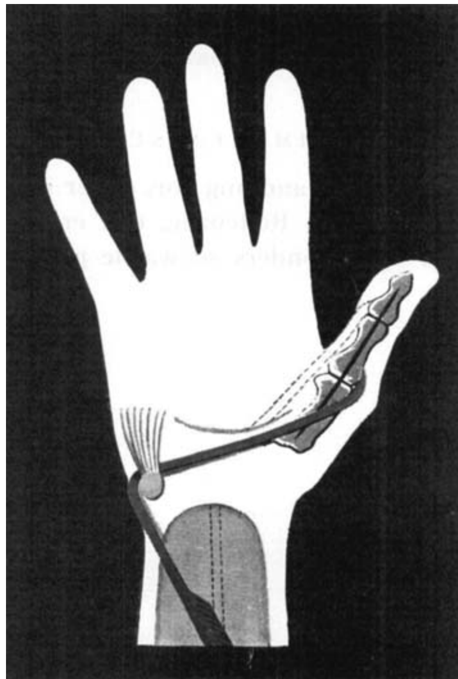


Fig. 4.

J. M. Arthrodesis with wire and trasplant of the flexor longus of the thumb.

the plantaris muscle after the arthrodesis and use as a motor some flexor or extensor carpi.

In 4 cases secondary tenolisis was performed.

In one case during the tenolisis the graft broke and a new transplant was done.

76 cases were operated on through this technique.

SUMMARY

The author shows the treatment he uses loss of opposition, the pulley he employs and a special technique for the very weak paralytic hands.

RESUMEN

El autor describe la técnica que emplea en la pérdida de la oposicion. La polea de reflexión que usa, y una técnica para los casos de manos graves poliomieliticas.

RESUME

L'auteur décrit le traitement qu'il applique, la poulie qu'il utilise et une technique particulière pour les mains paralytiques très faibles.

ZUSAMMENFASSUNG

Der Verfasser weist die Behandlung vor, die er in Fällen von schlaffer Opposition anwendet, den Rollenzug, den er verwendet und eine spezielle Technik für die besonders schwache paralytische Hand.