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A SIMPLE METHOD OF ATRAUMATIC DISSECTION OF ADHESIONS IN TENDON SHEATHS

BY

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The tendons in the hand are very apt to become adherent to the neighbouring tissues after both wounds and infections. Adhesions within the narrow channels running under the ligamentum carpi transversum and the annular ligaments of the fingers (ligamentum vaginale accessorium, ligamentum vaginale I and ligamentum vaginale II) which hold the flexor tendons snugly against the underlying bones (fig. 1) present a difficult problem in reconstructive surgery. An atraumatic surgical technique which spares the tissue is one of the fundamental requirements for good results in all tendon surgery. One must be extremely careful, when freeing adhesions in the tendon sheaths, not to injure the tissues more than is absolutely necessary. Delicate handling minimises tissue reaction and favours healing without new adhesions.

In the greater part of their passage through the palm the flexor tendons can be exposed and carefully freed from adhesions under direct vision. If subcutaneous dissection is desired *Bunnell*'s tendon stripper, which is an excellent instrument for certain purposes, may be useful in the palm and carpal tunnel. The semitubular, sharp-edged stripper is slipped over the adherent tendon which is held taut and the instrument is then pushed along the surface of the tendon with a twirling motion, cutting it free from adhesions.

On the other hand it may be impossible to get at adhesions in the narrow passages under the annular ligaments of the fingers with a stripper without using considerable violence. If it is also impossible to free the tendon by traction and

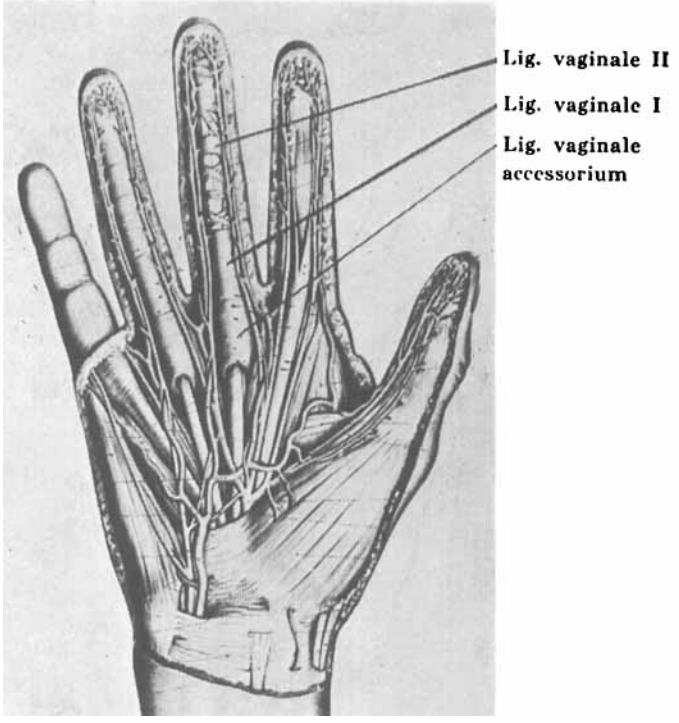

Fig. 1.
Schematic drawing of the hand.
(After *v. Lanz & Wachsmuth:* Praktische Anatomie.)

blunt dissection from above and below with ordinary instruments, it may be necessary to divide the pulley, i.e. the ligamentum vaginale. It is, however, a great advantage if the pulley can be retained intact and the tendon freed without severe damage to the tissues. I should like to recommend the following technique for this surgical detail.

The skin incisions are made as recommended by *Bunnell* (fig. 2) or by *Mason* (fig. 3): one transverse incision in the palm, and another longitudinal one along the side of the finger are necessary. A fine one-eyed dissection probe is

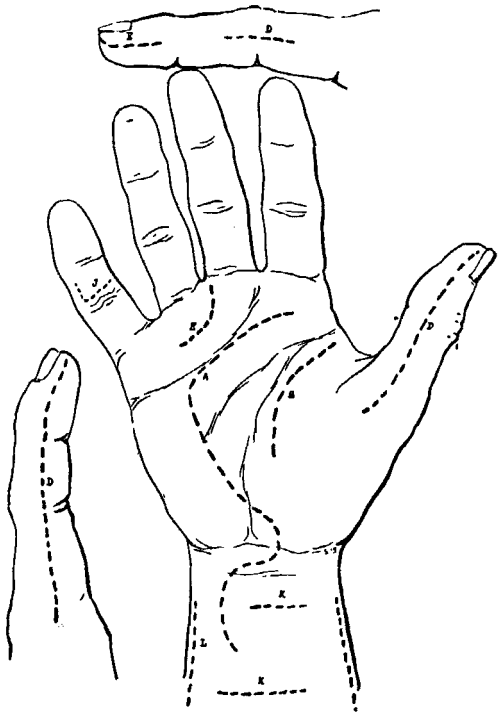

Fig. 2.
Skin incisions as recommended by *Bunnell.*
(After *Bunnell:* Surgery of the Hand.)

inserted by blunt dissection between the tendon and the annular ligaments. This can be done even though the adhesions may be very firm in some places. A piece of silk thread or an plain stainless steel wire is threaded through the probe and pushed along the canal from its distal end (fig. 4 a). The thread is withdrawn from the probe, carried round the tendon, re-threaded through the probe, and drawn back to

where it was first inserted (fig. 4 b). The two ends of the thread are then pulled simultaneously (fig. 4 c), whereupon the loop acts as a blunt dissector gently separating the tendon from the ligament without distending the tissues. The proximal

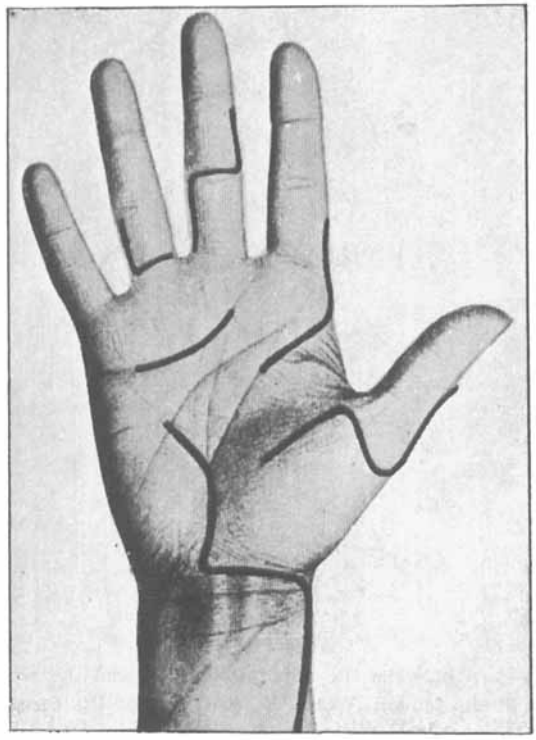

Fig. 3.
Skin incisions as recommended by *Mason*.
(After *Sealy:* Surgical Treatment.)

part of the tendon should be held taut during this procedure. If the tendon is not adherent distal to the pulley, the procedure can be done in reverse order, the thread being inserted from the proximal end of the tunnel. The same method can be used for dissecting the profundus and sublimis tendons from one another by inserting the thread between them; similarly the

two branches of the sublimis tendon can also be separated by this method.

If the adhesions are too firm to free with the loop of thread, the latter can be used instead to draw forth a loop of free

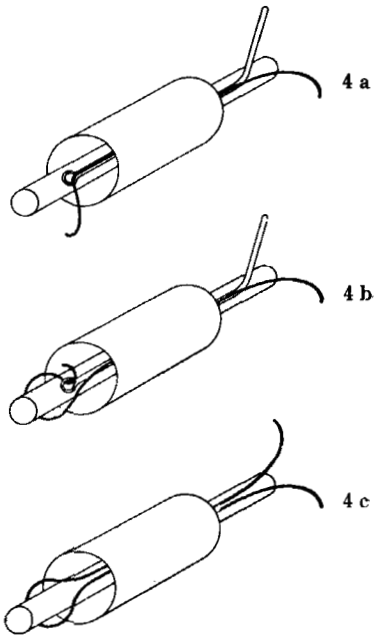

Fig. 4 a-c.
A thread is passed between the adherent tendon and the sheath, looping the free part of the tendon. When the two ends of the thread are pulled simultaneously the loop acts as a dissector.

tendon. This makes it much easier to perform the sharp dissection necessary in these cases.

SUMMARY

The author describes a method of freeing a tendon from adhesions by using a loop of silk or plain stainless steel wire as a blunt dissector. The method is atraumatic and simple.

RESUME

L'auteur décrit une méthode par laquelle on peut libérer le tendon des adhérences en utilisant une boucle de soie ou d'acier inoxydable lisse comme dissecteur non tranchant. Cette méthode est atraumatique et simple.

ZUSAMMENFASSUNG

Verfasser beschreibt eine Metode, wie man eine Sehne von Adhäsionen befreien kann; hierbei wird eine Schlinge aus Silkworm oder glattem rostfreien Stahldraht als stumpfer Dissektor benutzt. Die Methode ist atraumatisch und einfach.