

USE OF COLLAGEN SUBSTITUTES IN TENDON AND LIGAMENT REPAIR OF THE FOOT

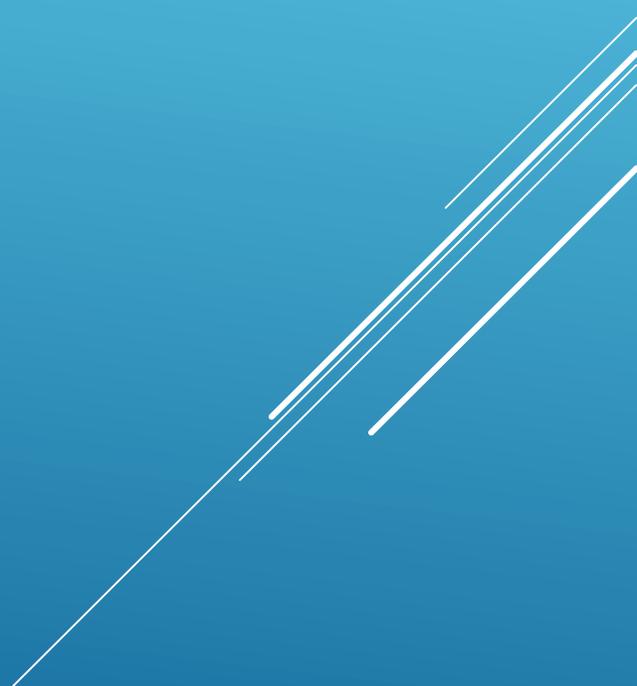
Lawrence Sternberg, D.P.M.
Midland Family Footcare

- ▶ - Tendon Ruptures
- ▶ - Ankle Stabilizations
- ▶ - Peroneal Subluxation Repair
- ▶ - Split Tendon Repair
- ▶ - Tendinosis

TYPES OF PROCEDURES



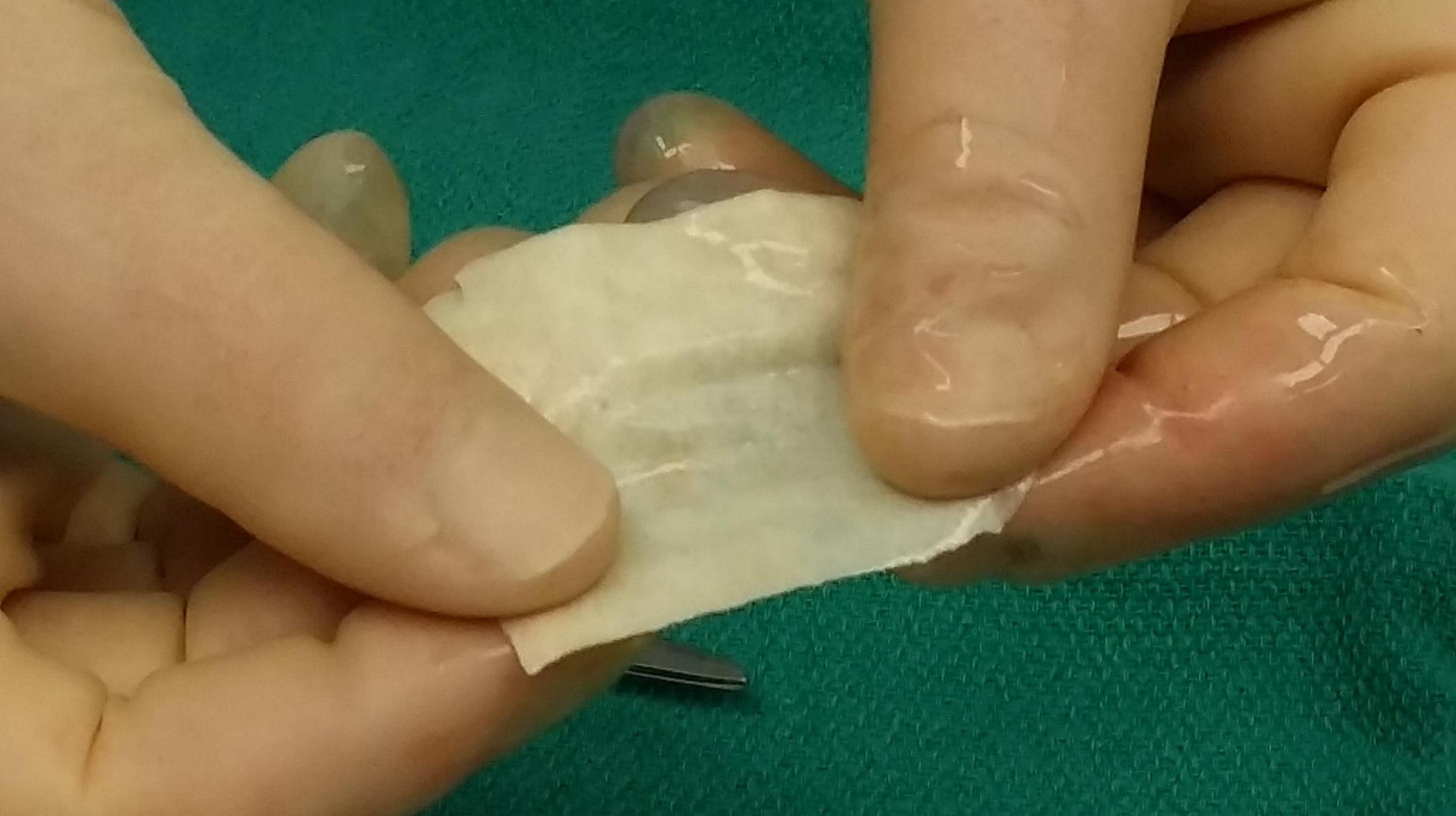
GRAFT JACKET



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DermaSpan™
Acellular Dermal Matrix





Types of Acellular Tissue Matrix

1. Graft Jacket- Wright Medical
2. Dermaspan- Biomet

These can be used as internal collagen lattices as well as skin substitutes.

A decorative graphic consisting of several parallel white lines of varying lengths and orientations, located in the bottom right corner of the slide.



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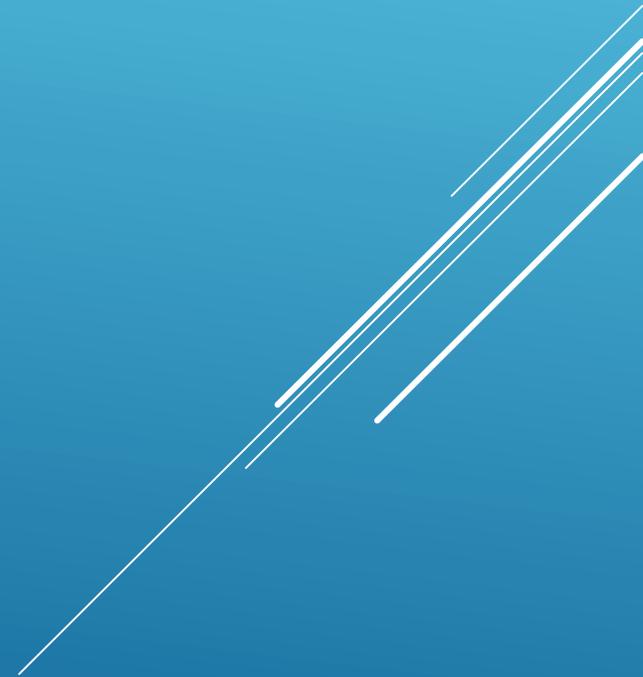
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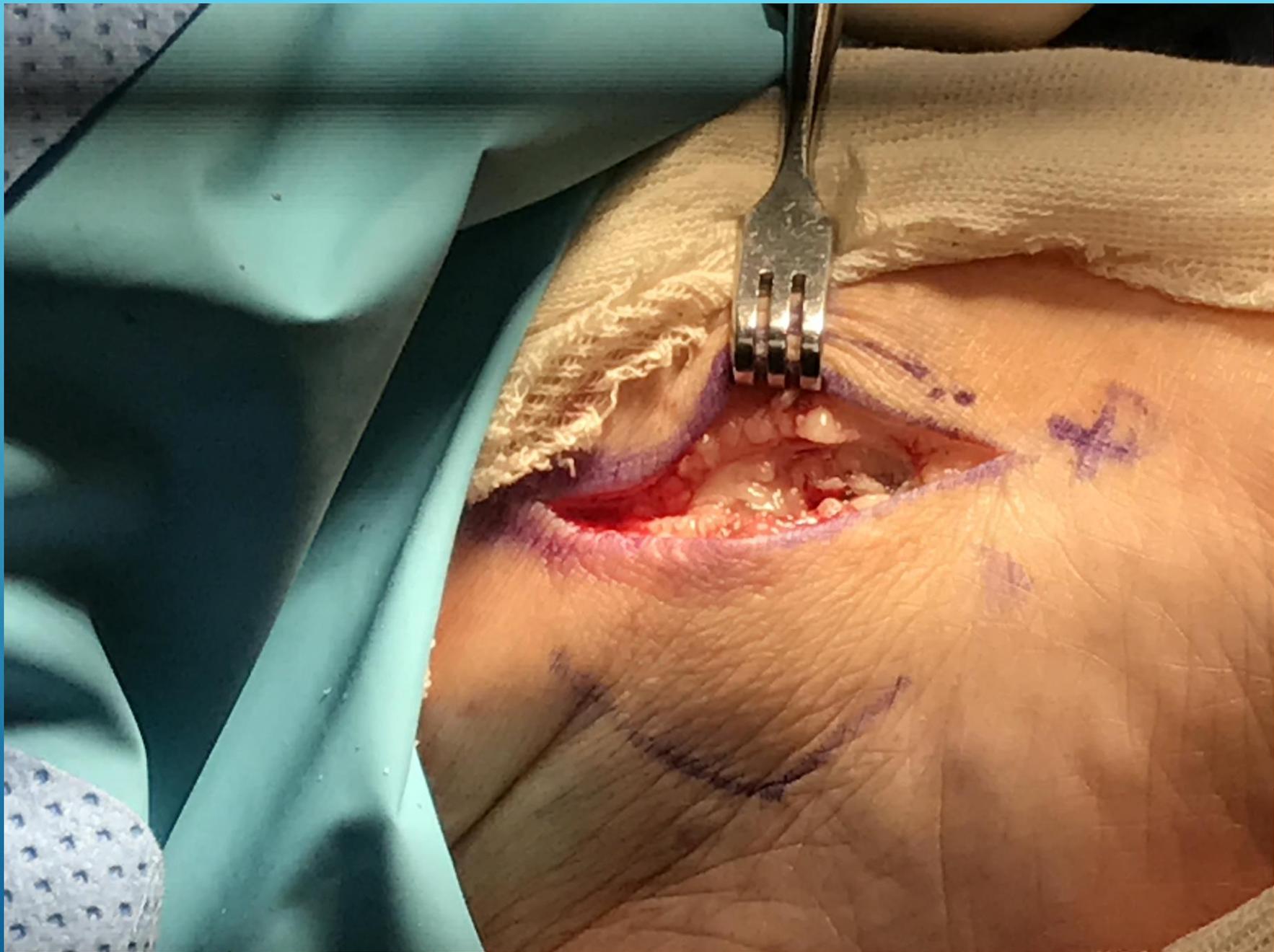


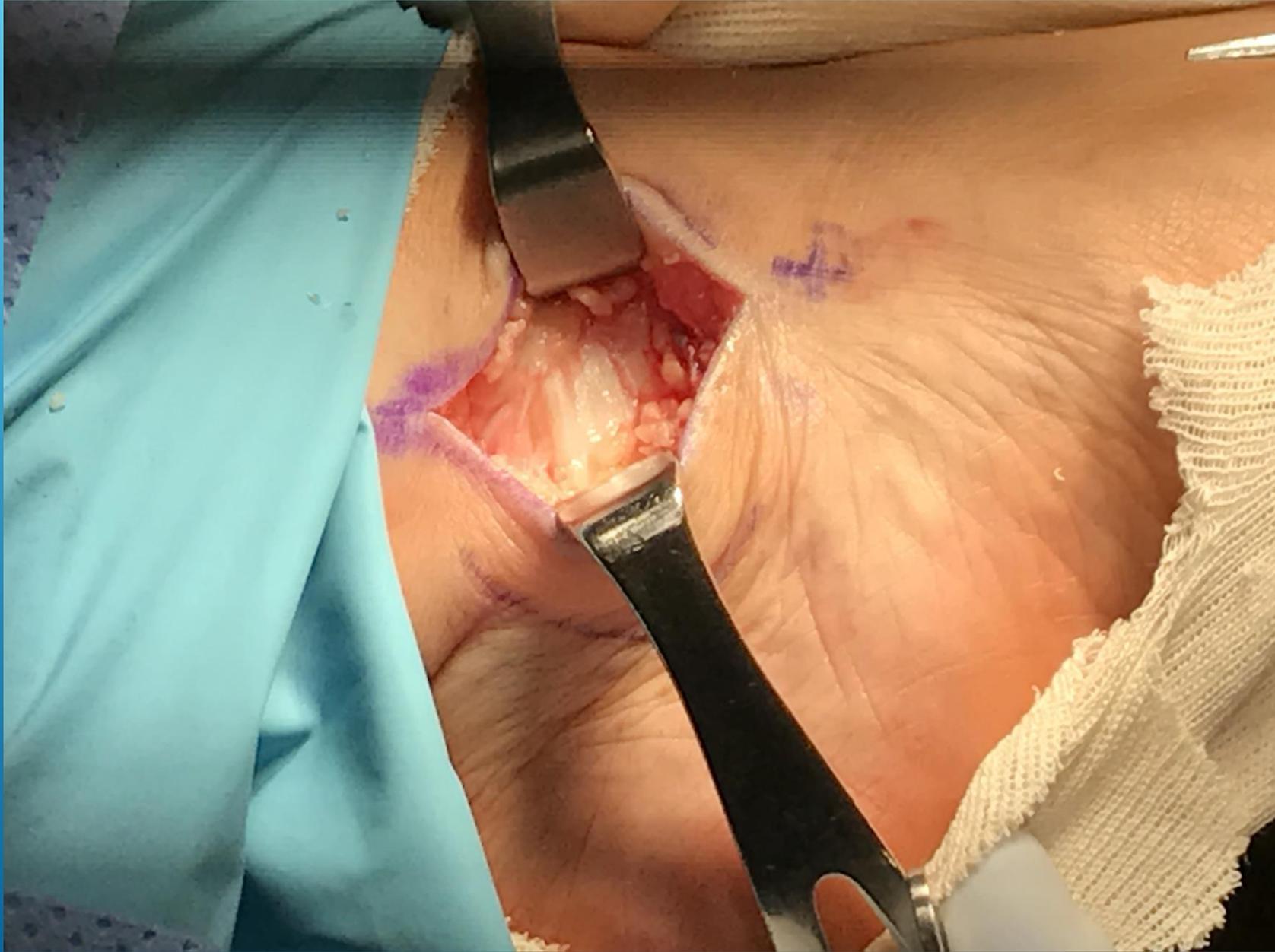
Tire Repair

1. Identify the problem
2. Primary Repair of Defect
3. Remove necrotic part of tendon
4. Tubularize the remaining tendon
5. Cover with Collagen Substitute

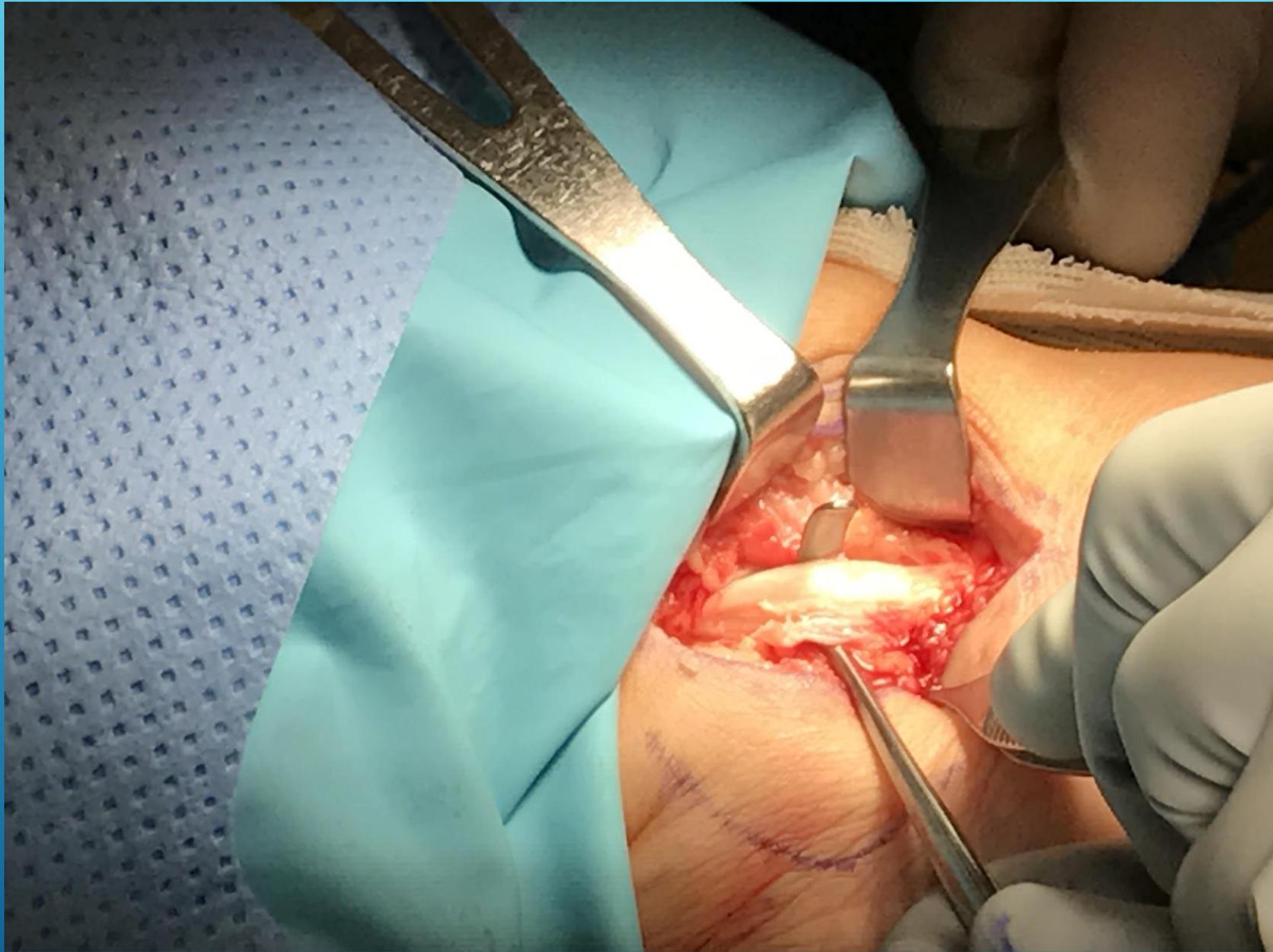
PARTIAL RUPTURE REPAIR

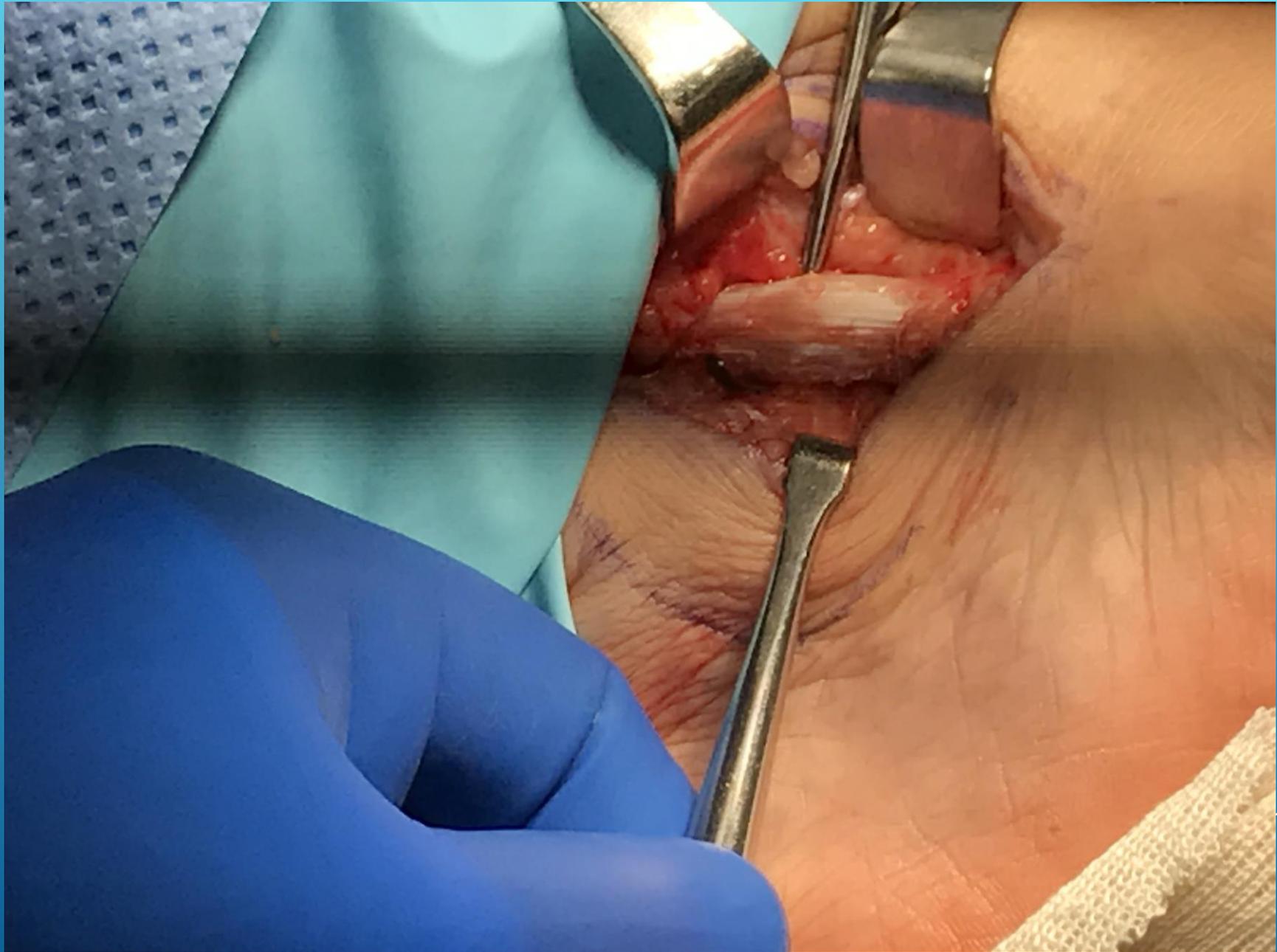




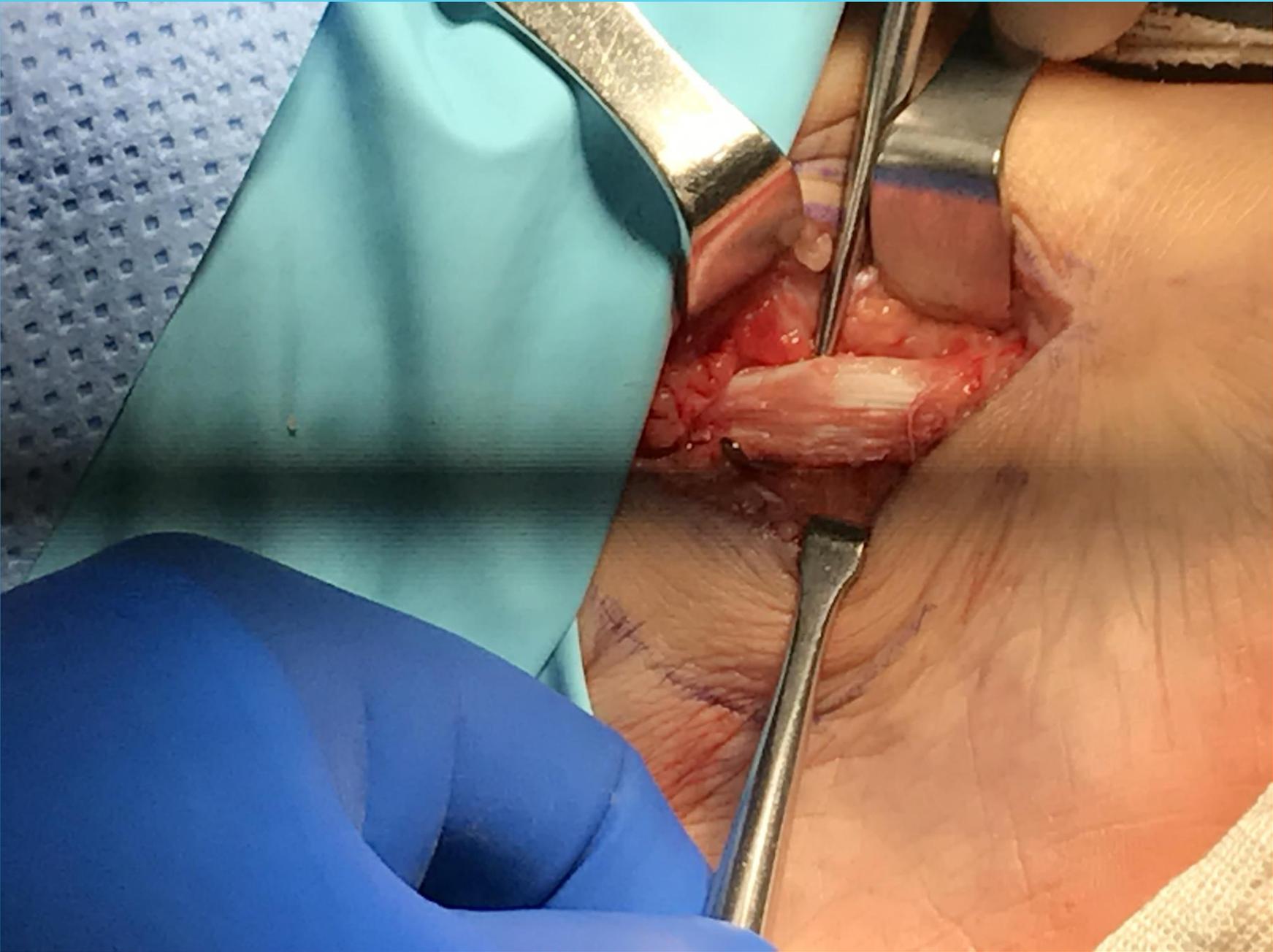












Surgical vs Non-Surgical Achilles Tendon Repair

1981 Nistrom; Journal of Bone and Joint: 105 acute achilles tendon ruptures. End result was minimal long term differences in each group. Recommended conservative tx as no infection rate.

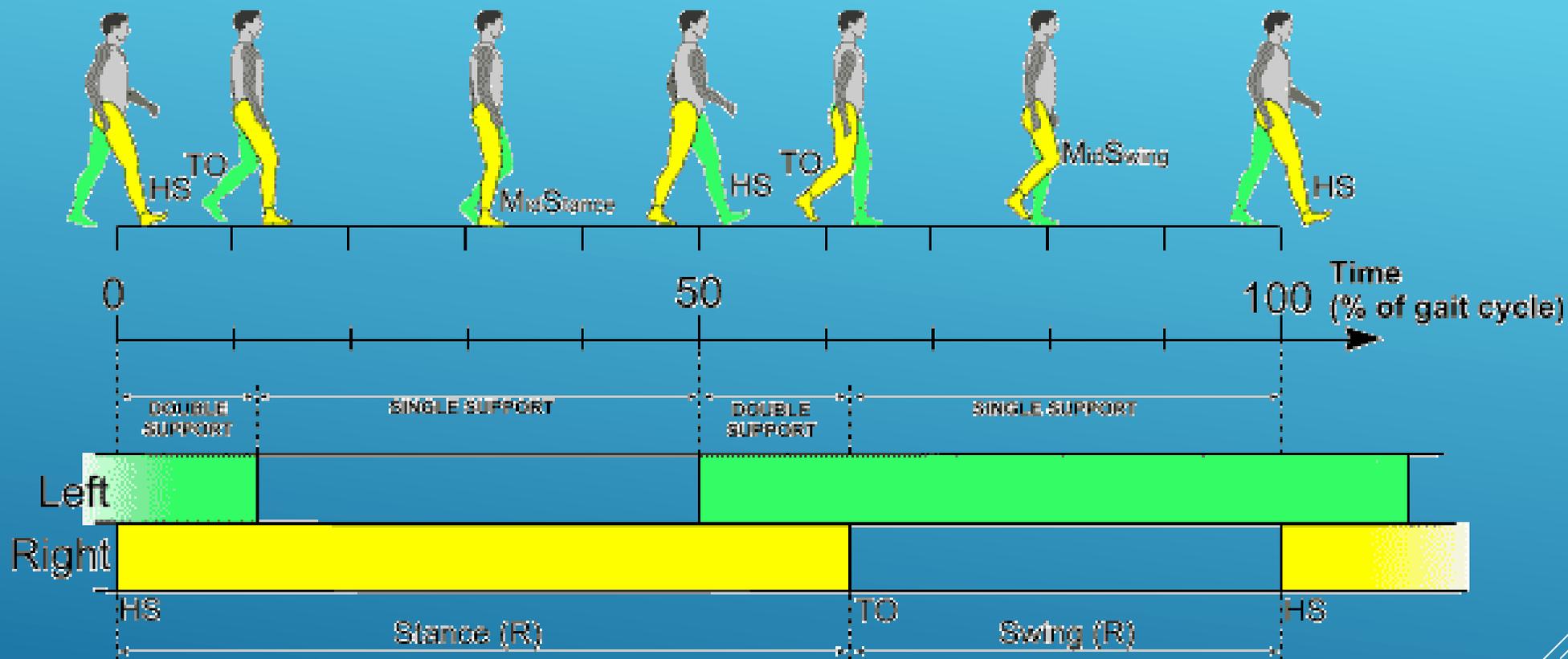
1993 Cetti, et. al; American Journal of Sports Medicine: 111 acute ruptures. Significant increase in function 1 year after surgery. Recommended surgical intervention.

2002 Bhandari; Current Orthopedic Practice: Retrospective study that shows less re-rupture in the surgical group, but point to more research needed.

Arizona Gauntlet







Phases of Gait



Krackow Stitch – Modification of the Bunell Stitch

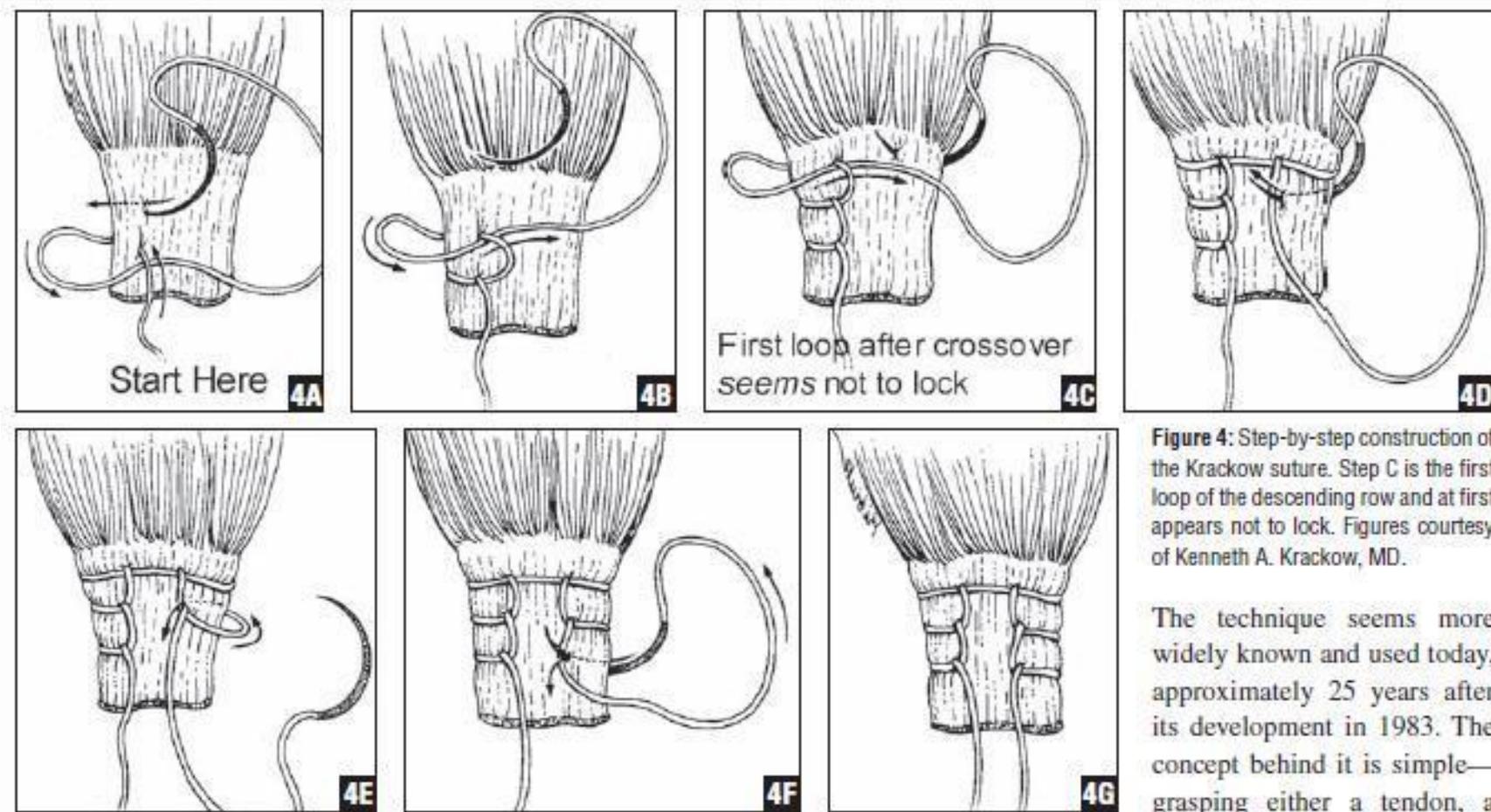
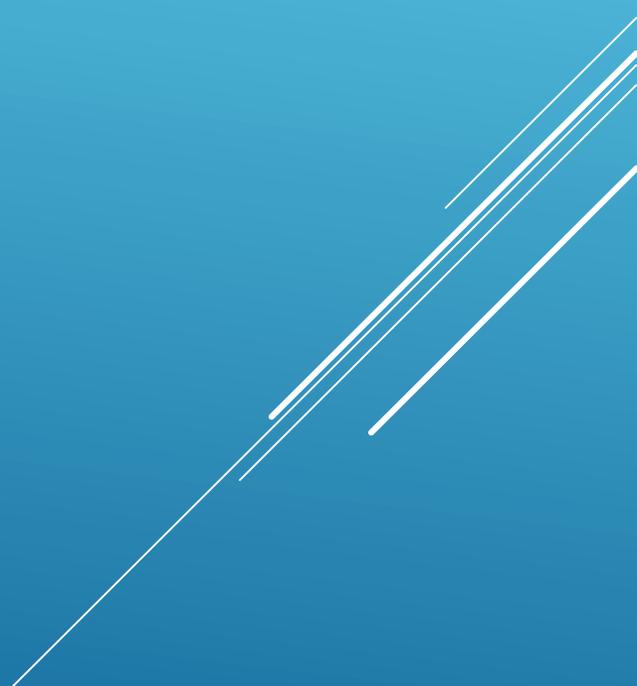


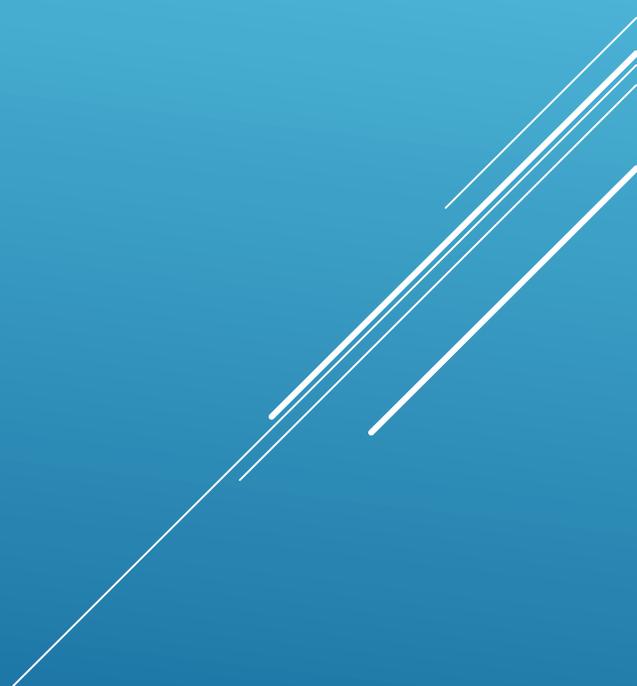
Figure 4: Step-by-step construction of the Krackow suture. Step C is the first loop of the descending row and at first appears not to lock. Figures courtesy of Kenneth A. Krackow, MD.

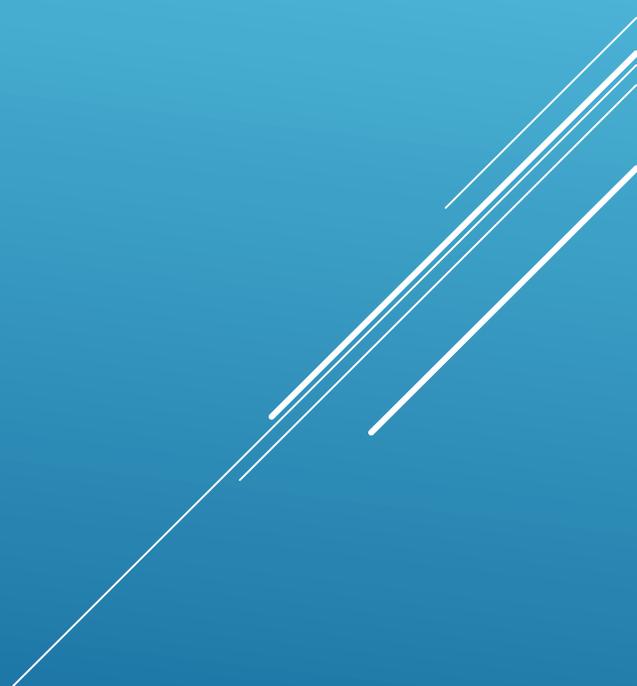
The technique seems more widely known and used today, approximately 25 years after its development in 1983. The concept behind it is simple—grasping either a tendon, a

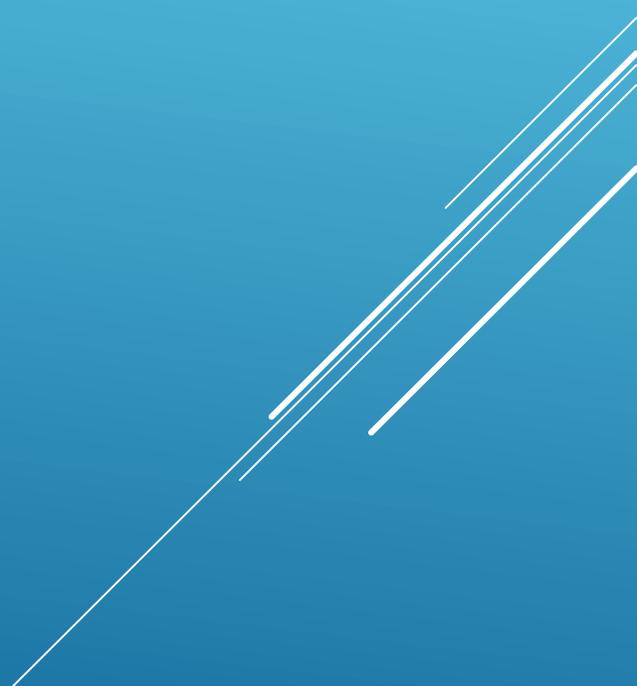
Tibialis Anterior

- * Muscle belly in the anterior compartment
 - * Inserts into the medial cuneiform
 - * Biphasic muscle- dorsiflexes the foot to clear the ground; decelerates the foot on contact
 - Works with the other anterior group muscles
 - Main complaint is slapping the ground during walking
- 













Ankle Stabilization

Modified Brostrom- recreating the ATFL ligament

3 layer repair

- Suture the capsule

- Periosteal flap

- Collagen graft flap

Can also repair the CFL at the same time



Internal/Brace™ Ligament Augmentation Repair

Arthrex has developed a simple, safe and reproducible technique using the BioComposite SwiveLock® and FiberTape®. The *Internal/Brace* Ligament Augmentation Repair can be used as an augmentation to a Brostrom procedure. The *Internal/Brace* Ligament Augmentation Repair allows the surgeon to repair lateral or medial ankle instability. It can be used in acute and chronic ankle sprains.

Tags: [ankle instability](#)

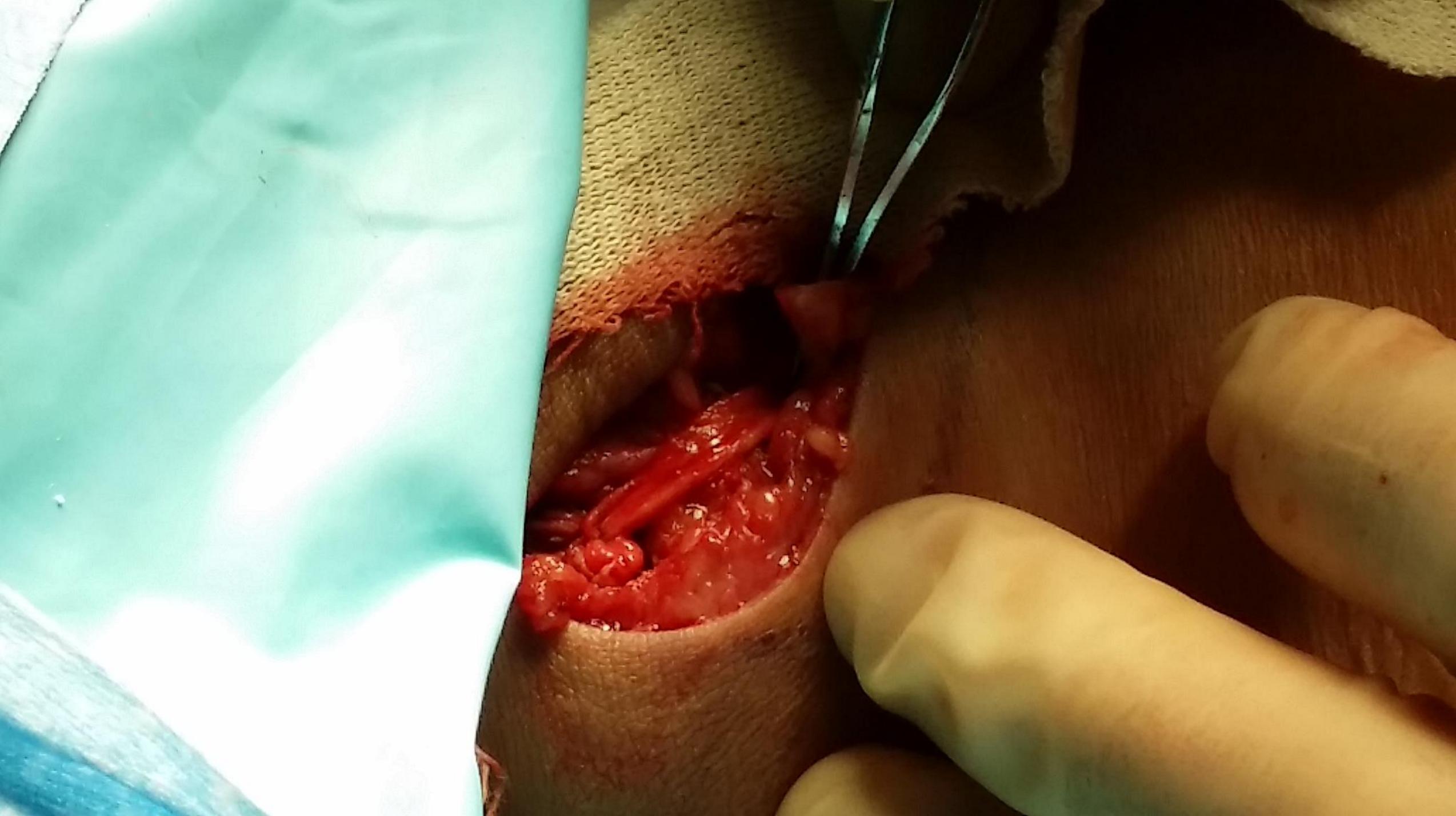


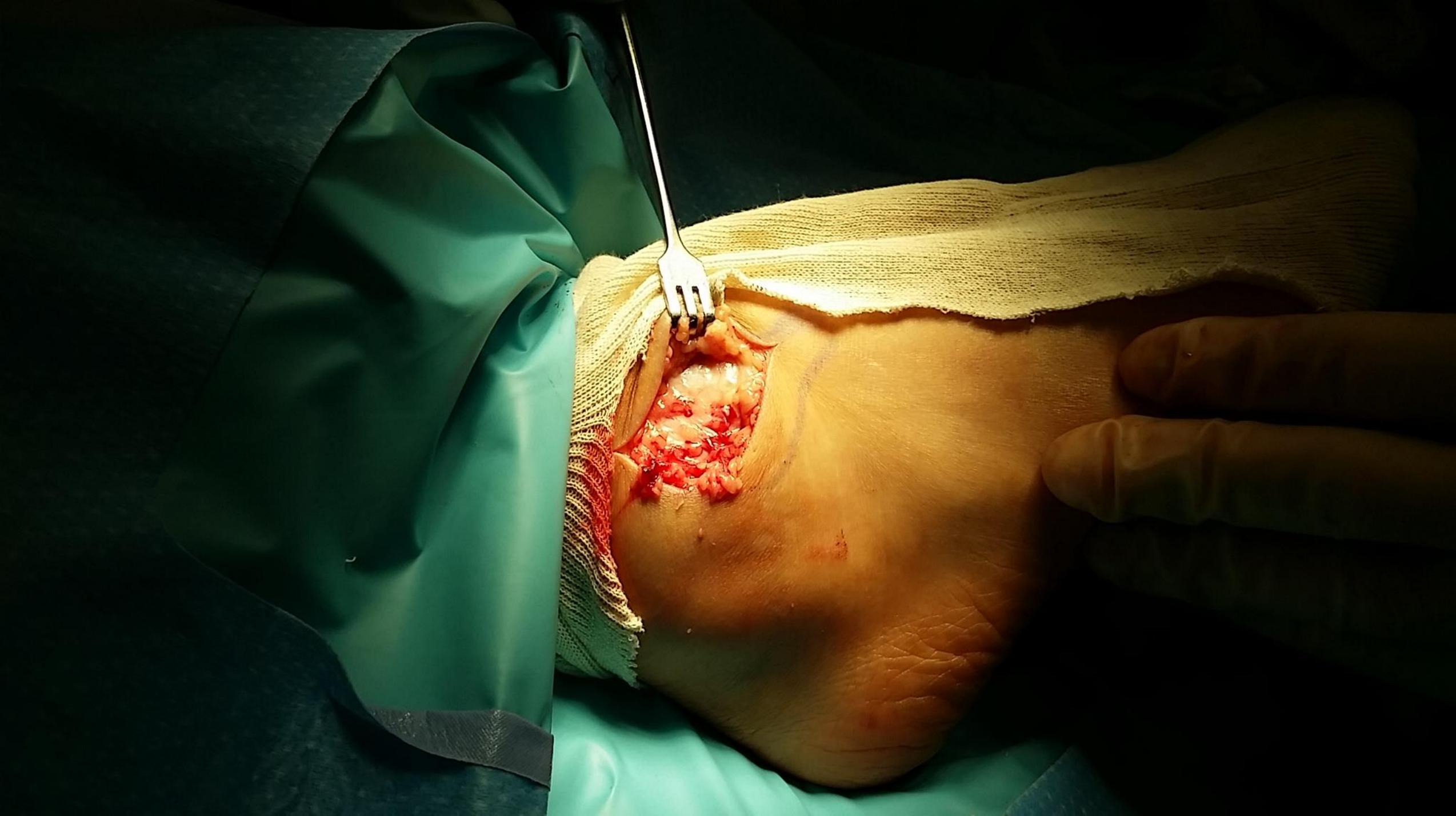
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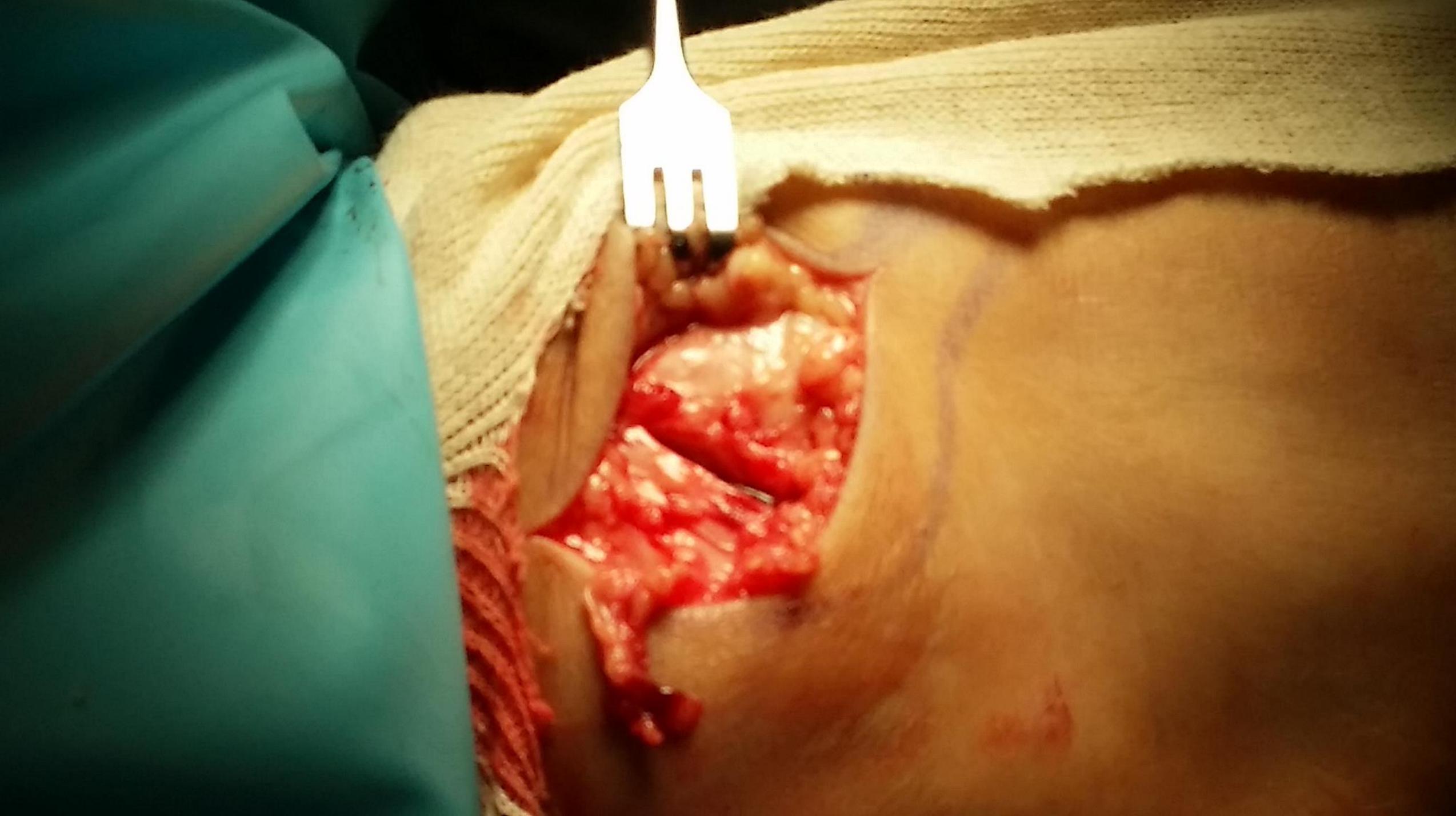
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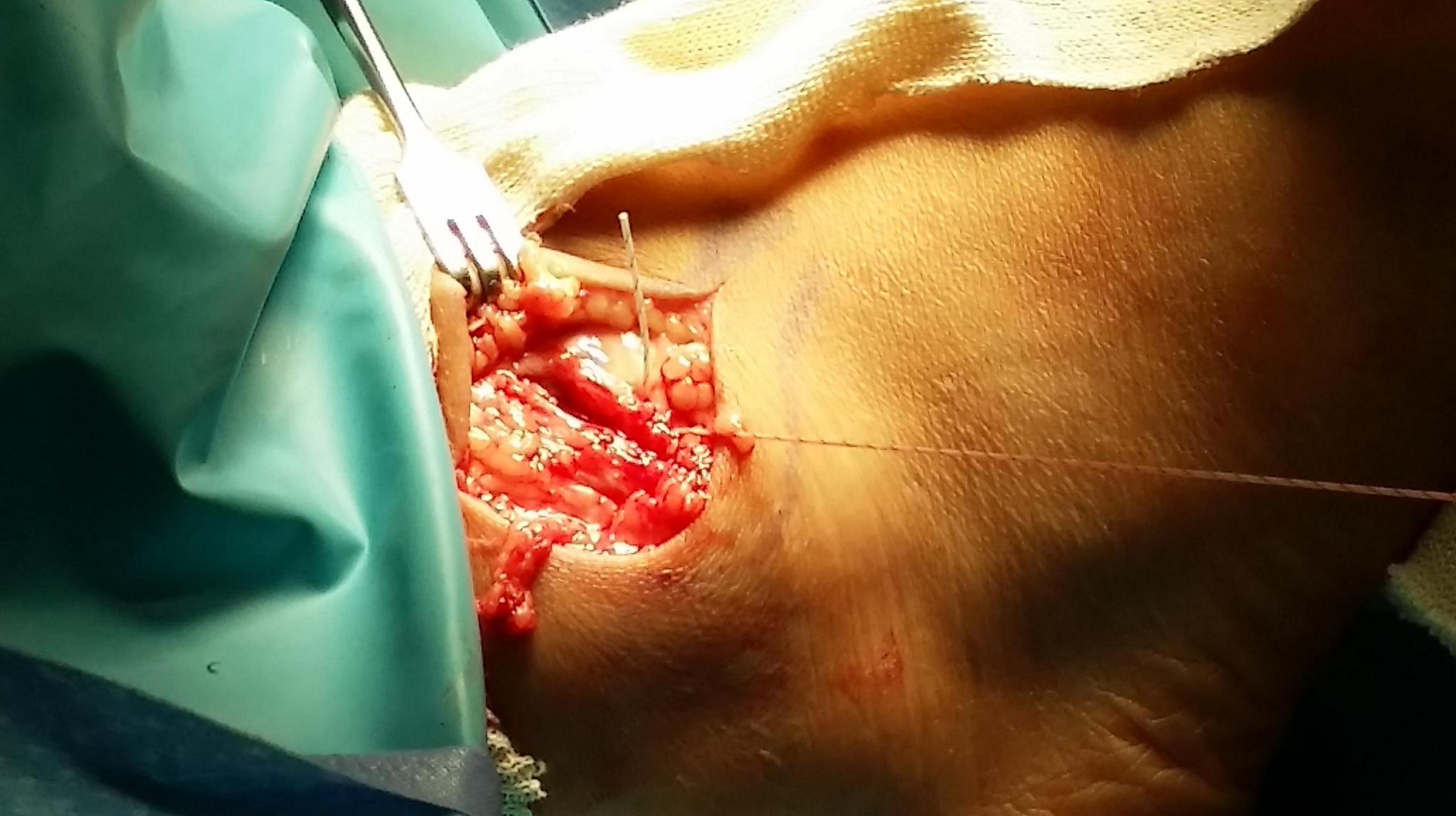
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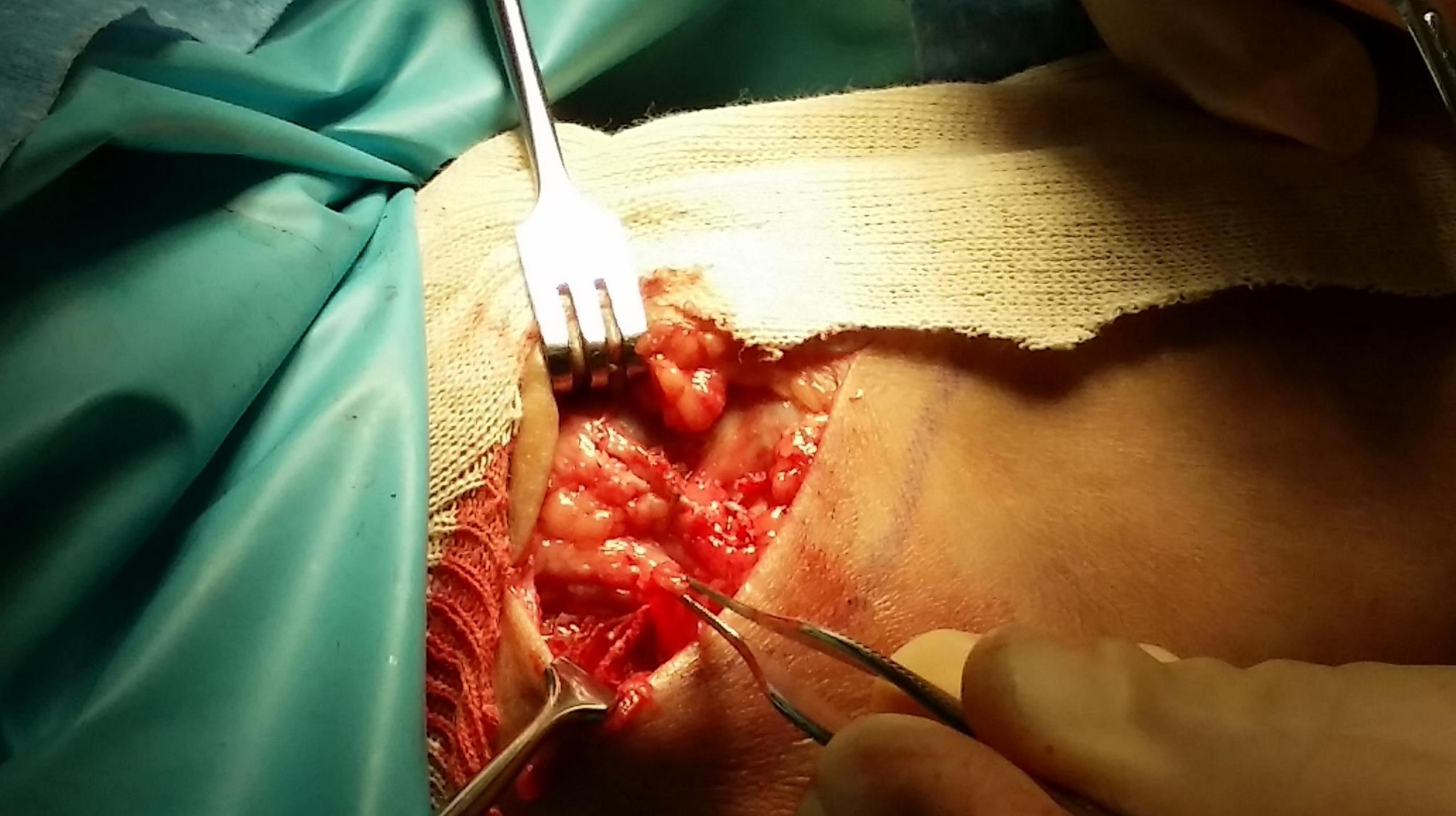


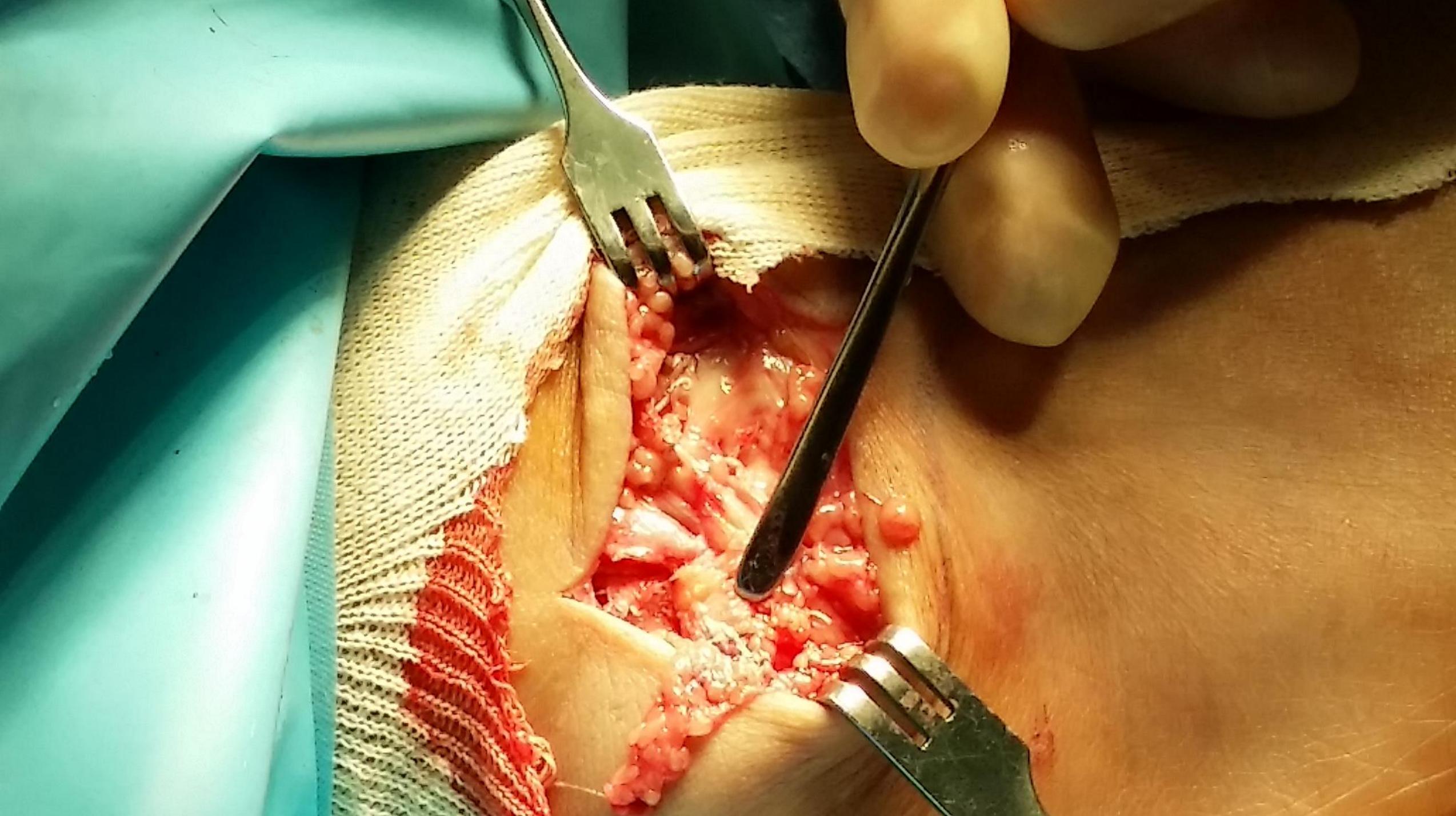


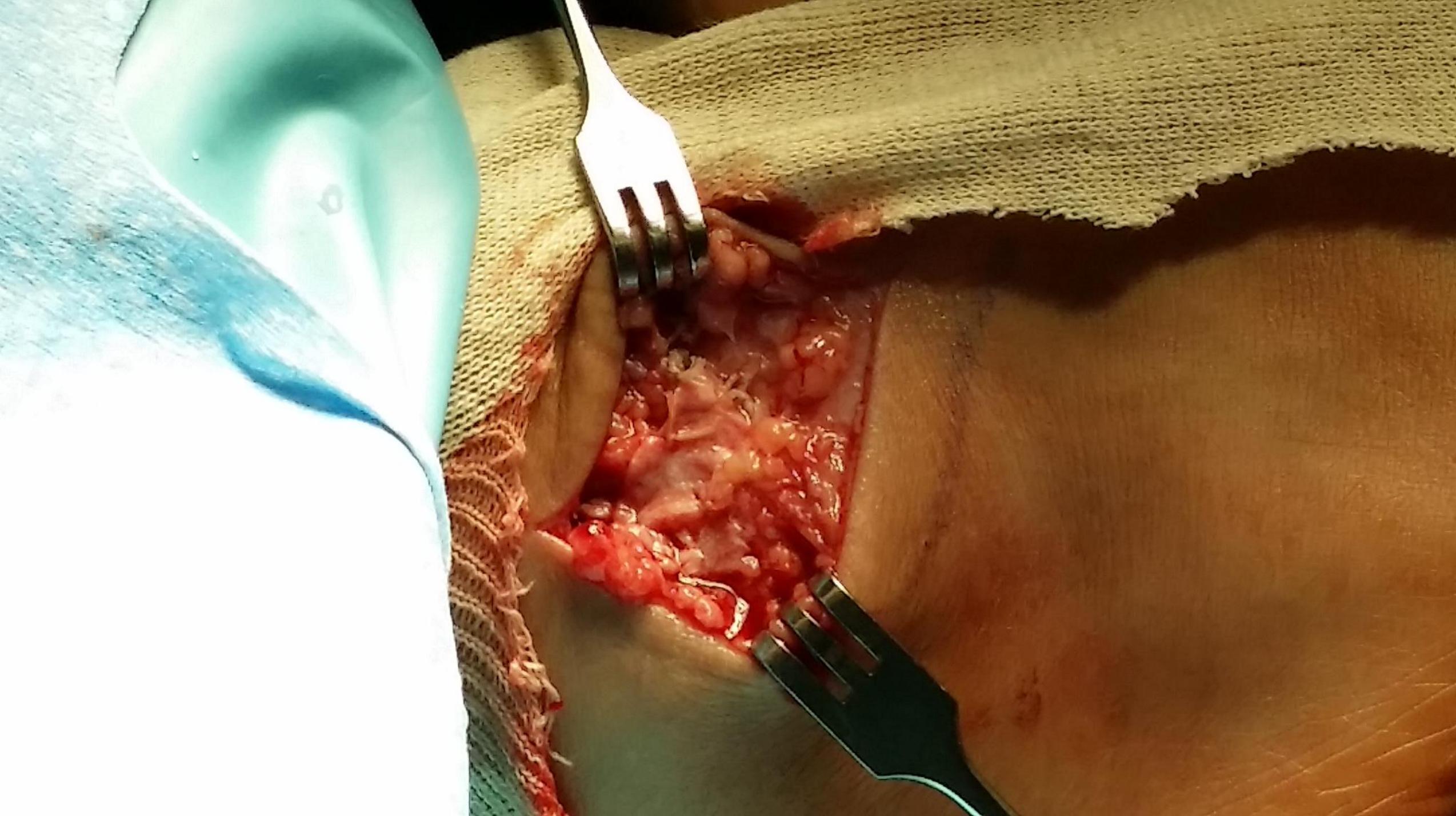












Peroneal Subluxation



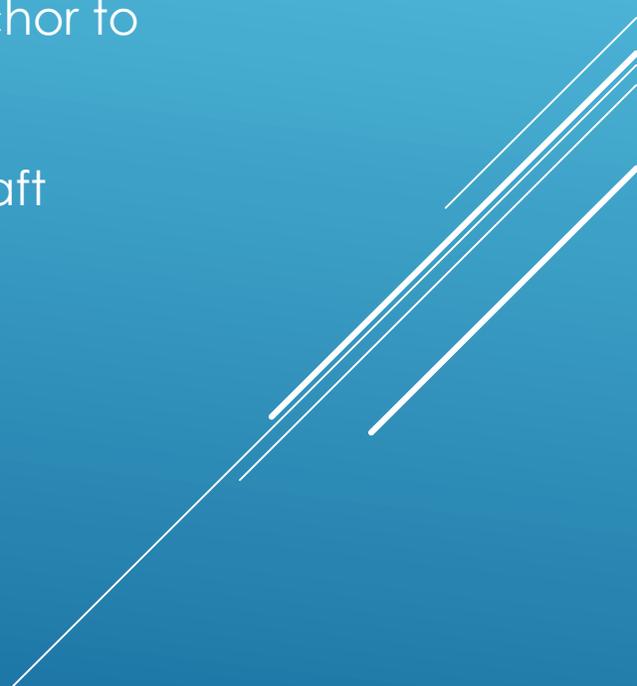
Multiple Procedures

1. Eckert and Davis- Repair of the superior peroneal retinaculum
2. Zoellner and Clancy (1979)- Deepened the posterior malleolar groove of the fibula
3. Kelly (1920) - Cortical wedge to block the subluxation
4. Raikin (2009) – Combined a cortical slide posteriorly to the fibula with deepening of the groove of the fibula

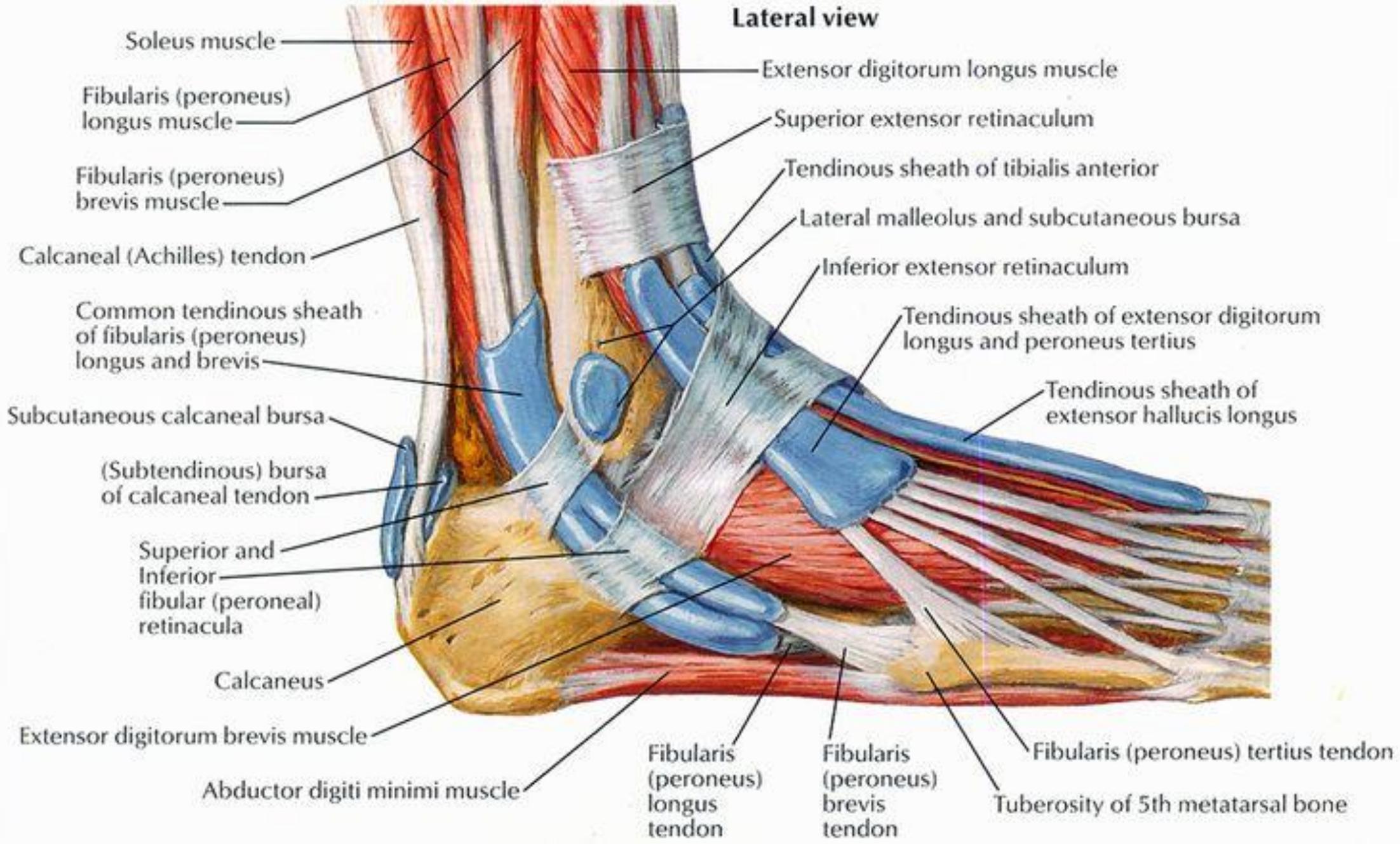
*All were based on relatively small study samples



Collagen Substitute Procedure

1. Deepen the posterior malleolar groove- Burr through the cartilage until tendons sit without subluxing.
 2. Recreate the superior peroneal retinaculum with graft- 2-0 anchor to one end and anchor or suture the other end
 3. Place another collagen graft 2.0 cm proximal to the original graft
 4. Cover area with outer graft
- 

Lateral view





I feel a very
unusual sensation -
if it is not indigestion,
I think it must be
GRATITUDE.

Benjamin Disraeli

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