

# Nerve, Tendon and Muscle Injuries

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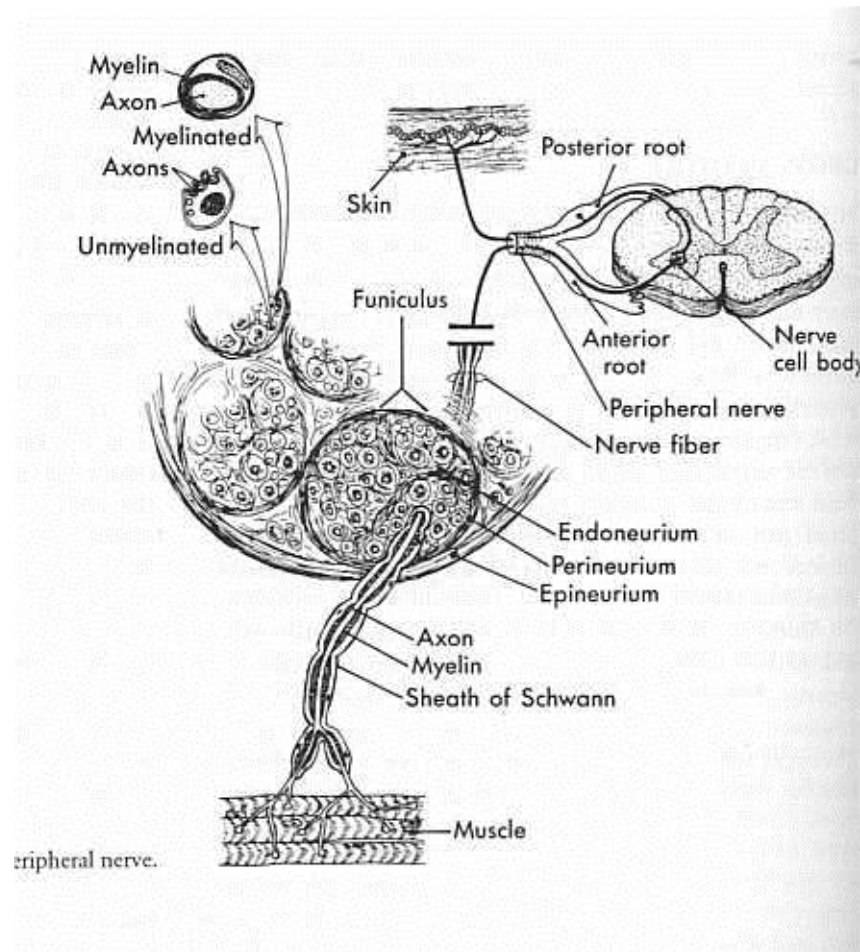
# Nerve injury

- Direct injury
- Pressure
- Traction
- Ischaemia

# Nerve injury

- Neurapraxia
- Axonotmesis
- Neurotmesis

# Anatomy



# Neurapraxia

- Segmental demyelination
- Axons remain intact
- Transient lesion
- Spontaneous recovery

# Axonotmesis

- Axons are separated
- Distal degeneration
- Endoneurium tubes intact
- Delayed recovery

# Neurotmesis

- Complete division
- Epineurium divided
- No spontaneous recovery

# Nerve Recovery

- Axons need to be guided
- Nerve sheaths must be intact/ repaired
- Regeneration 1mm/day



# History

- Numbness
- Pins + needles (paraesthesia)
- Change of feeling
- Weakness

# Clinical Examination

- Skin smooth dry + shiny
- Muscle wasting + weakness
- Tinel's sign
- Wounds
- Position of limb

# Clinical Examination

- Dermatomes
- Miotomes

# Treatment

- Open injuries
- Exploration and suture

# Treatment

- Closed Injuries
- Mostly neurapraxia / Axonotmesis
- Wait
- Splint (Occupational therapy)
- Joint mobility (Physiotherapy)
- Protect skin

# Treatment

- Nerve suturing / grafting
- Tendon Transfers
- Nerve Transfers

# Specific Injuries

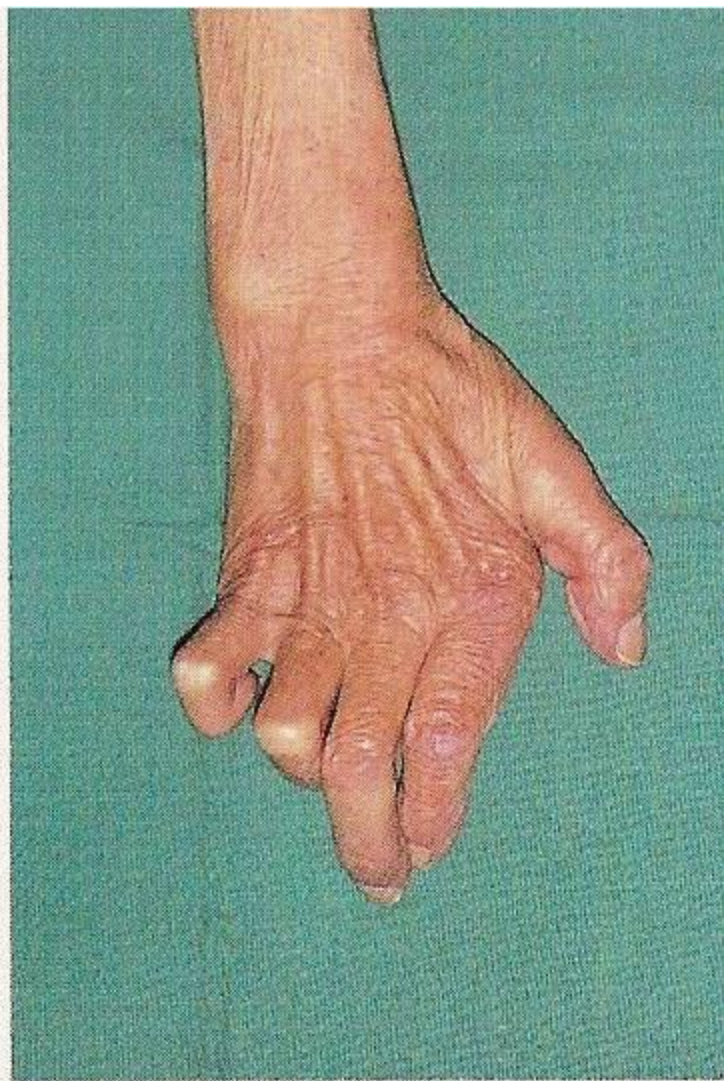
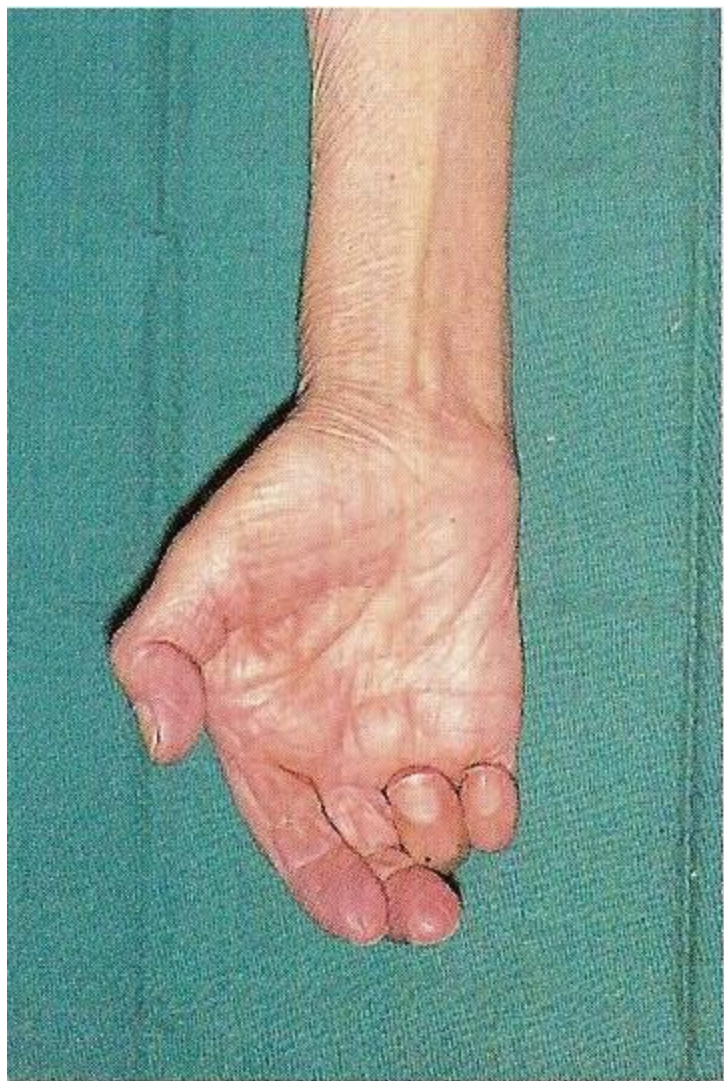
- Radial nerve – Drop wrist
- Ulnar nerve – Claw hand
- Median nerve - St Benedictus hand
- Erb's palsy – Waiter's tip deformity
- Peroneal nerve – drop foot



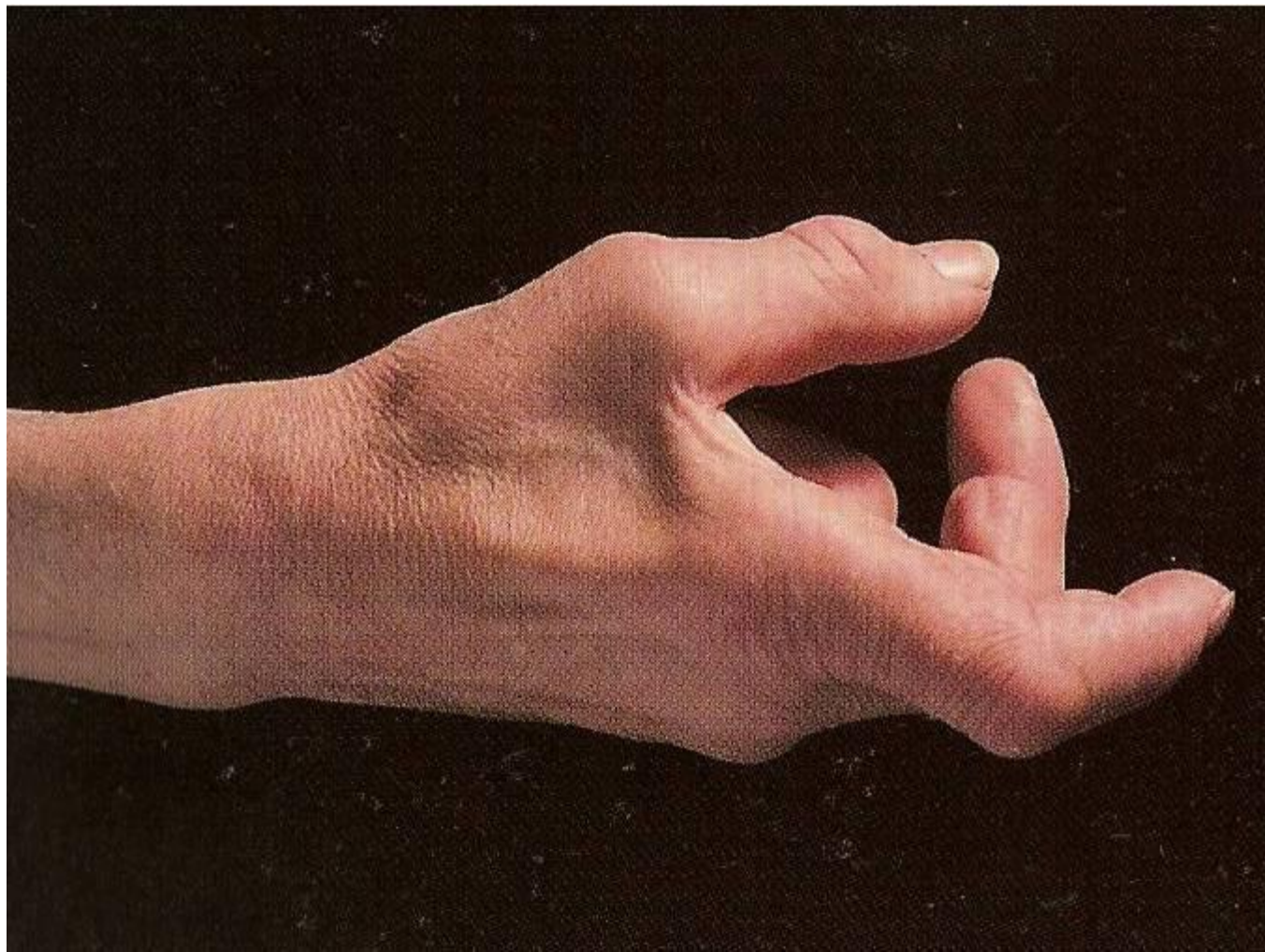














# Brachial Plexus Injuries

- Open/Close
- Traction- High/Low energy
- Pre-/ Post ganglionic

# Brachial Plexus Injuries

- Root avulsion
- Winging scapula (M. Serratus Ant)
- Loss shoulder retraction (M. Rhomboideus)
- Horner's syndrome  
(Ptosis, myosis, anhydrosis, enophthalmos)

# Chronic Regional Pain Syndrome

- Severe Pain
- Autonomic dysfunction
- Atrophic skin changes
- Functional impairment
- Osteoporosis
- Peripheral sympathetic overactivity

# Tendon Injuries

- **Open Injuries**
- Loss of function
- **Closed Injuries**
- Swelling/Haematoma
- Loss of function

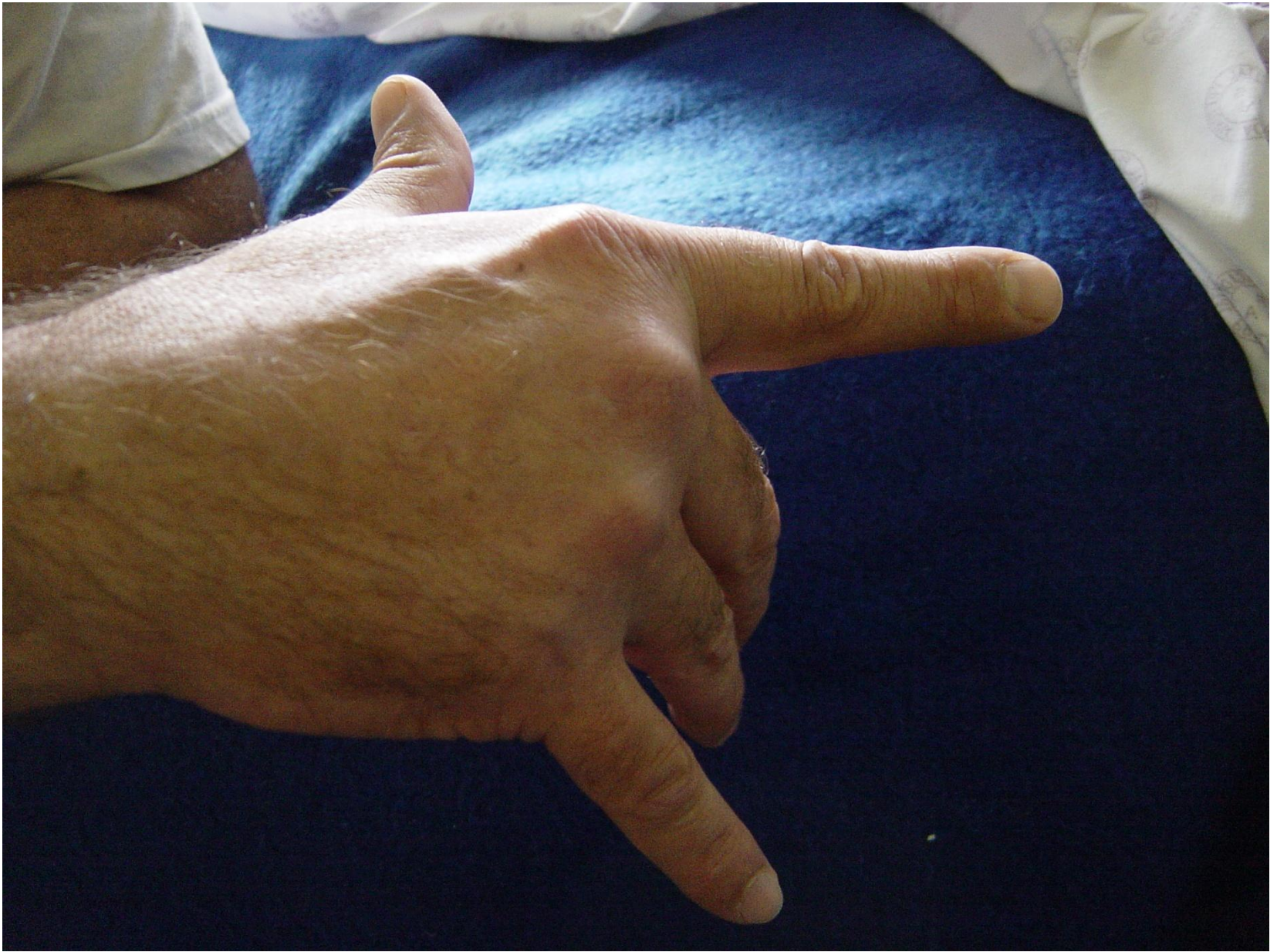


# Tendon Injuries Treatment

- Debride + suture open injuries
- Restore function
- Prevent Impairment /disability
- Early diagnosis







# Sweater finger



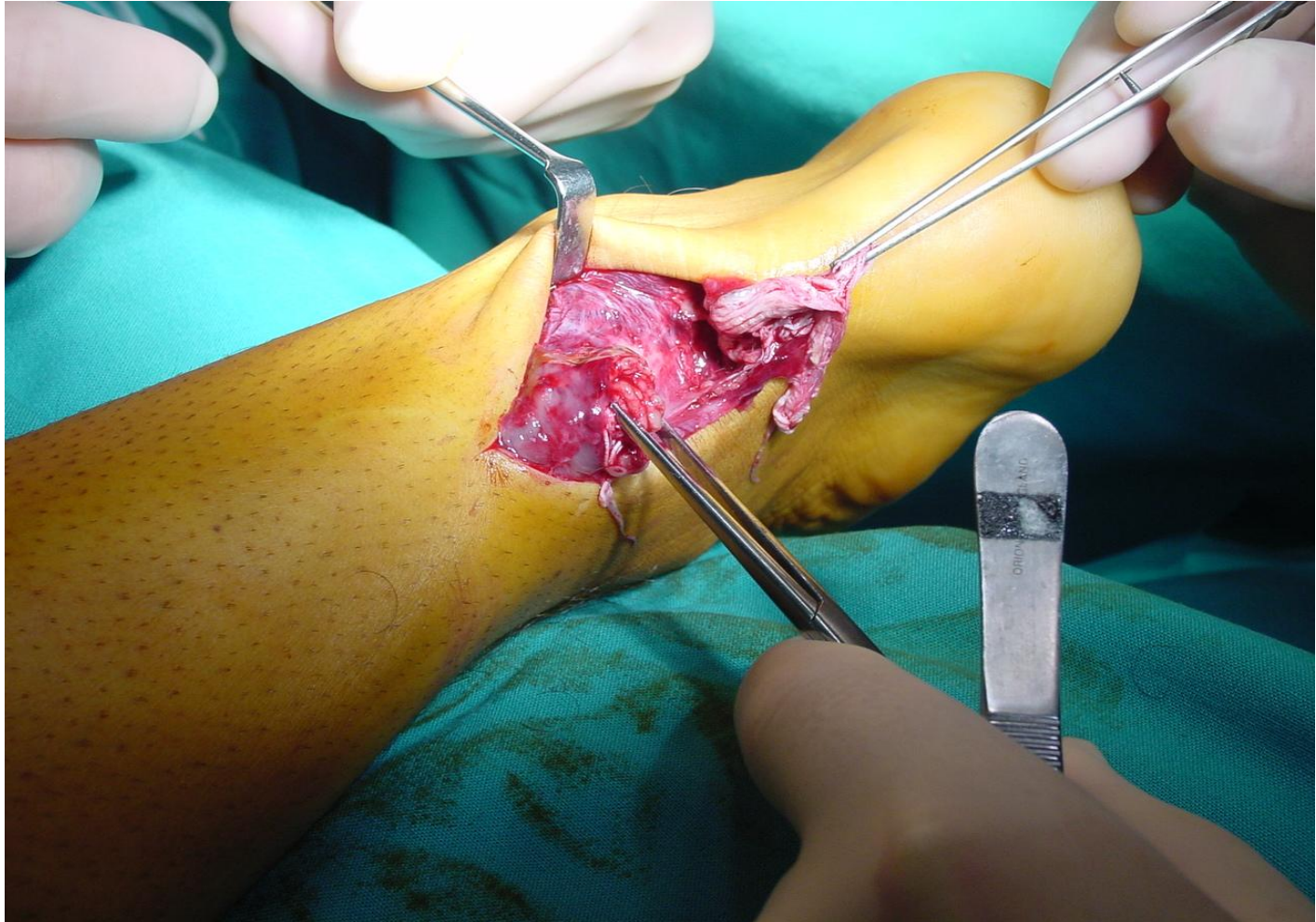


FIGURE 6.5





# Tendon Injury





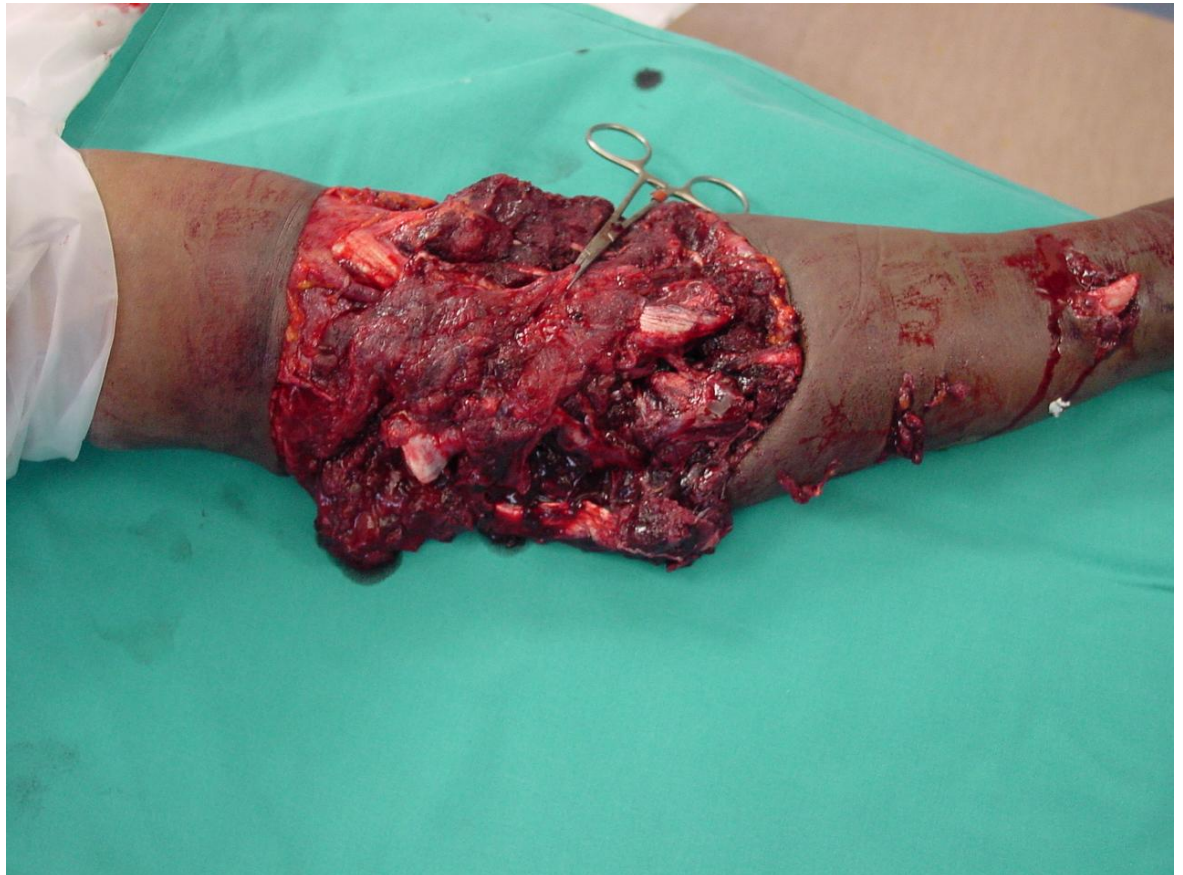
# Tendon Suture





# Muscle Injury

- Open
- Closed



# Muscle Injuries Treatment

- Debride + treat associated injuries
- Restore function
- Prevent Impairment /disability
- Early diagnosis

# Muscle Injury Treatment

- Closed – Initially RICE
- Follow up Physiotherapy
- Evaluation of function
- Certain injuries open repair (TA + RC)

THE END