

# EXTENSOR TENDON RECONSTRUCTION

Common presentation to the surgical community. Sudden loss of extension of the fingers or thumb. Patients may not always present immediately, this is particularly so for the thumb where deformity may make loss of EPL function less noticeable.

Diagnosis can be difficult on occasion. You have to differentiate between PIN palsy, subluxation of tendons at MPJ, and tendon rupture. Can be made more difficult if the MPJ disease is severe and not passively correctable.

Tendon rupture may be due to attrition most commonly. The most common presentation is loss of extension of the two ulnar fingers associated with the caput ulnae syndrome. Tendons may also rupture due to direct synovial disease and ischaemia. Recognition and treatment of tendon ruptures is important to prevent other tendons rupturing. The usual pattern is rupture starting on the ulnar side and progressing radially.

## **Assessment**

Assessment is important. Look for dorsal synovitis, disruption of the DRUJ causing prominence of the ulna head and lastly assess the radiocarpal joint for signs of fixed or passively correctable deformity.

In addition to dealing with the extensors you may have to consider whether to do additional procedures such as excision of the distal end of the ulna, rebalancing of the wrist by transfer of ECRL to ECU or a fusion of some sort to deal with the radiocarpal joint.

## **Options**

The four options available for extensor tendon reconstruction are:

- Tendon repair
- Tendon graft
- Tendon transfer
- Tendon buddying

Tendon repair is usually impossible as the diagnosis is often delayed and the tendon attrition means there is loss of tendon substance and length. However Nalebuff has suggested that if direct repair is possible then do so and don't worry about over tightening i.e. ignore the normal cascade.

Create a surgical to do list

- Dorsal tenosynovectomy & tendon reconstruction
- Ulnar head resection
- Debridement any bone spicules & protrusions
- Relocation of retinaculum beneath tendons.
- Use retinaculum to hold ECU dorsally
- ECRL to ECU transfer
- Radio-lunate fusion

To deal with the following the following scenarios consider your options.

# EXTENSOR TENDON RECONSTRUCTION

## Single rupture

- Primary repair.
- Adjacent buddy suture
- Tendon graft

## Double rupture

- As above plus EIP transfer.
- Buddy ring to middle.
- EIP transfer to little.

In my experience attempting to bring little across to middle causes excessive abduction of the little finger.

## Triple rupture

- As above plus can do FDS transfer (via IOM or round side)
- Can use a wrist extensor.
- EPL can be available if the thumb MPJ is fused.

## Quadruple rupture

- As above can use two FDS tendons

My personal experience of FDS transfer is not good. I have been unable to make the patients relearn the function and the only benefit seems to be that the FDS acts as a tenodesis. So with wrist flexion the tension on the transfer holds the fingers extended.

## Surgery

- Dorsal midline incision
- Skin flaps raised to include all subcutaneous tissue down to retinaculum
- Retinaculum raised as a flap from ulnar to radial starting over the sixth compartment and ending after opening the third compartment. (If there is concern over bowstringing then leave a 1cm part of the retinaculum intact.)
- Assess the tendons. Perform synovectomy. Any frayed areas repaired.
- Ruptured tendons tagged.
- Decide on method of reconstruction
- Excise distal end of ulna if needed.
- Deal with wrist joint if needed. Synovectomy and removal spicules of bone. Radio-lunate fusion if required.
- Place extensor retinaculum beneath the tendons and suture in place. If needed create a loop to hold ECU in dorsal position.
- Reconstruct any ruptured tendons by one of the methods outlined above.

## EXTENSOR TENDON RECONSTRUCTION

- Close skin only. Use a suction drain (Remove within 24 hours).
- Non adherent dressing.
- Bulky padding loosely applied.
- POP to tips of fingers holding wrist in 30° extension & MPJs 30° flexion.