EXTENSOR POLLICIS LONGUS TENDON INJURY
THUMB ZONES I – VIII (EPL)

Dynamic Regime

Please consult EPL rehabilitation guidelines prior to selecting this protocol. This protocol can be applied to the above zones but it may not be clinically appropriate for all patients. There are other protocols that can be selected for the treatment of EPL repairs. The protocol may be modified if deemed appropriate with use of clinical reasoning. **Please discuss with a senior therapist if unsure about selection of a particular protocol.**

Please see exercise sheets for pictures of specific exercises.

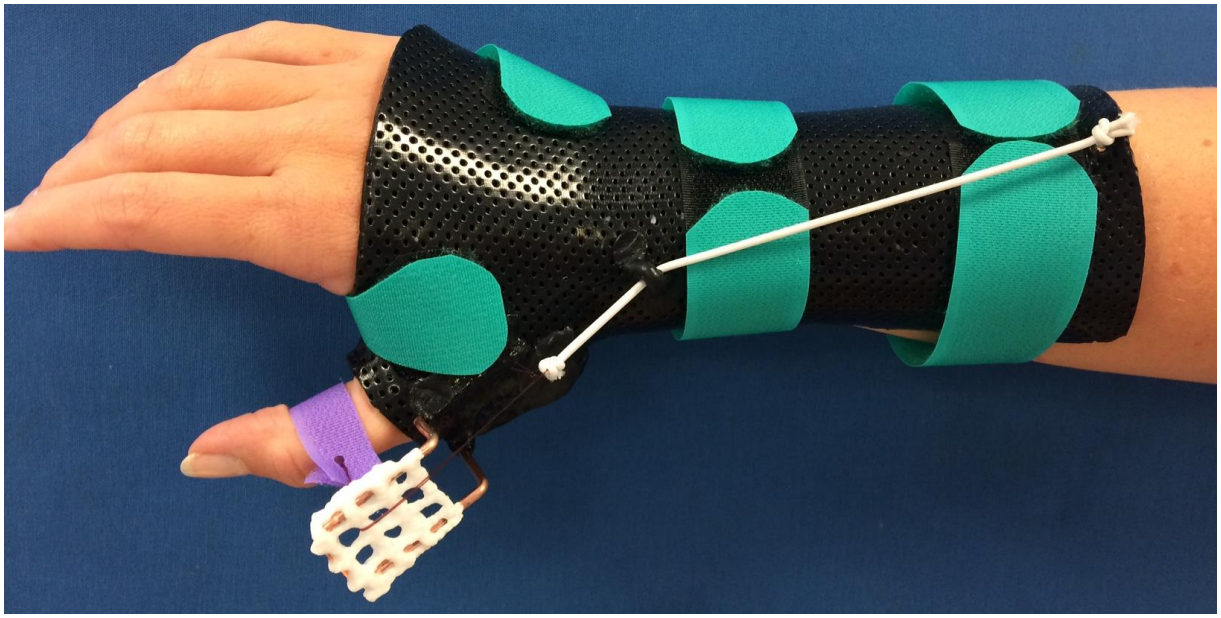
3-5 days post op

Patient to be seen in plastics dressings' clinic (PDC) for review of wound and application of light dressings and in hand therapy for splinting and exercises.

SPLINT

Prior to commencing rehabilitation check that EPL is intact

Dorsal forearm based splint with extension just distal to MCP joint. Outrigger sling to support proximal phalanx. IPj left free.



For zone I/II the dorsal block should extend some way along the proximal phalanx with the outrigger sling supporting the IP joint or the distal phalanx to prevent full active flexion.

For zone II/IV with a combined APL/EPB repair look at how the patient moves on the contralateral side with regard to MCPj flexion. Could consider putting a volar strap across the MCP joint to limit end MCPj flexion.

Position: Wrist In 20 degrees extension, thumb in mid circumduction, CMCj in extension, MCPJ to be supported with outrigger in full extension. Ensure the splint blocks MCP joint hyperextension. Could consider an MCP joint strap for rest to discourage the MCP joint from hyperextending.

Outrigger: Can be made from thermoplastic or wire. Need to assess the size of the patients hand, consider their function. Ensure the fishing wire or elastic can glide smoothly through the outrigger. Check the tension on the elastic band. Guide for tension of the outrigger: Does it produce enough force to bring the MCPj into full extension without hyperextending? Does it allow active flexion of the MCP joint; for the first 2 weeks the amount of tension should limit the end range of flexion.

TIPS for moulding the splint

Use a bandage to rest the patients hand with the forearm in pronation on the table whilst moulding the splint to ensure the wrist and thumb position are correct. When applying the outrigger the forearm can be placed into mid-pronation and a bandage used again to support the thumb MCP joint and IP joint in extension.

Consider a volar night gutter if the IP joint sits in flexion to prevent a lag.

EXERCISES

1. Active IPj flexion and extension with MCPj in extension x 5 2 hourly (patient to support the proximal phalanx gently to facilitate this)
2. Active MCPj flexion to passive extension (with outrigger) with IPj in extension x 5 2 hourly

The number of repetitions and frequency can be adjusted depending upon how much movement the patient has and how easy it is for the patient to complete the exercises. This applies throughout the protocol.

ADVICE

No function of thumb in splint, splint to be worn at all times.

2 weeks post op (14 days)

Patient should attend PDC prior to hand therapy for removal of sutures.
Check wound/scar if appropriate. Teach patient how to remove the splint safely to wash their hand and perform scar massage.
Reinforce no function with thumb.

SPLINT

Check splint, make adjustments as necessary.

EXERCISES

1. Active IPj flexion and extension with MCPj in extension x 5 2 hourly
2. Active MCPj flexion to passive extension (with outrigger) with IPj in extension x 5 2 hourly
3. Active combined MCPj and IPj flexion to tip of MF to passive extension (with outrigger) x 5 2 hourly (**TIP:** observe how your patient makes this movement. Are they performing a composite flexion or just moving one joint? Educate your patient on exercise technique. If the tension on the elastic is correct the patient should initiate movement with the IP joint. The exercise can be adapted if necessary to ensure composite MCP and IP joint flexion.

3 weeks post op (21 days)

Check wound/scar. Reinforce scar advice – see week 2.
Reinforce no function with thumb.

SPLINT

Check splint, make adjustments as necessary.

EXERCISES

1. Active IPj flexion and extension with MCPj in extension x 5 2 hourly
2. Active MCPj flexion to passive extension (with outrigger) with IPj in extension x 5 2 hourly
3. Active combined MCPj and IPj flexion to tip of RF to passive extension (with outrigger) x 5 2 hourly (see week 2 **TIP**).

Considerations for exercises/splint

If patient has very poor movement then could consider allowing them out of the splint for exercises and adding some tenodesis. See week 4 exercises. Practice this in the therapy session. Depending upon patient understanding of exercises and if they have demonstrated good compliance until now they could continue with exercises at home.

4 weeks post op (28 days)

Check wound/scar. Scar advice to be given if appropriate.
Measure ROM and compare with contralateral side

Assess for wrist stiffness

SPLINT

Check splint, make adjustments as necessary.
Splint to be worn for night and protection whilst out. It may be more appropriate to provide them with a volar static resting splint for night and protection. If the patient has a proximal zone IV or above this could be a hand based splint.

FUNCTION

Patient can perform light functional activities. Consider activities that involve tenodesis to promote gliding of the EPL.
Light functional activities would include using hand for finger food, using hand to wash body, applying cream to face, short periods of typing, picking up small coffee cup.

EXERCISES (the frequency and number of exercises should be decided by the therapist depending upon the patient's movement)

1. Active IPj flexion and extension with MCPj in extension
2. Active combined MCPj and IPj flexion and extension
3. Allow active thumb movement in all planes.
4. Active tenodesis – could add thumb retropulsion with wrist in flexion

Considerations for exercises/splint

Think about the patient: demands on their hand (ie job/hobbies), compliance. If patient has very good movement it may be appropriate to keep them in the splint for 1 week longer.

5 weeks post op (35 days)

Patient may not need to attend for appointment if they have good movement at 4 weeks and it is felt that they are able to comply with a rehabilitation programme at home. Patient can be advised to discontinue the splint at 5 weeks post op.

6 weeks post op (42 days)

Check scar. Continue with scar management as appropriate
Assess active extension and flexion at MCPj and IPj and combined movements
Assess thumb ROM in all planes.
Assess the responsiveness of the IP joint – is the patient able to move easily between IP joint flexion and extension.

FUNCTION

For most patients they will be back to everyday function at 6 weeks. Consider patient's job/hobbies and adjust functional advice as appropriate.
Driving ok at 6 weeks

EXERCISES

1. Continue with previous exercises as appropriate.
2. Passive flexion if movement limited
3. Consider functional activities/exercises that work on the responsiveness of the IP joint to flex and extend quickly. Tailor exercises to the individual.

8 weeks post op and ongoing (56 days)

Check patient progress in terms of scar, movement and function. Tailor exercise programme to meet patient's needs.
For most patients they will be fully functional at 8 weeks, patients with manual jobs involving heavy thumb pinch may need to be restricted in function for another couple of weeks.

This protocol was written by Hannah Bell (Band 7 Physiotherapist) and finalised following discussion with the hand therapy team in August 2018.

References

Elliot and Southgate. New Concepts in Managing the Long Tendons of the Thumb after Primary Repair. Journal of Hand Therapy (2005) Apr-Jun; 18; 2

Khandwala et al. Immediate Repair and Early Mobilization of the Extensor Pollicis London Tendon in zones 1-4. Journal of Hand Surgery (2004) 29B; 3; 250-258