Ascension® PIP

Post-Operative therapy protocol

This brochure summarizes post-operative care guidelines for the Ascension® PIP.

HUMANITARIAN DEVICE:
The Ascension® PIP is authorized by Federal law for use in arthroplasty of the proximal interphalangeal (PIP) joint when the patient:

- Has soft tissue and bone that can provide adequate stabilization and fixation under high-demand loading conditions after reconstruction; and

- Needs a revision of a failed PIP prosthesis, or has pain, limited motion, or joint subluxation/dislocation secondary to damage or destruction of the articular cartilage.

The effectiveness of this device for this use has not been demonstrated.
As described by Wilma Walsh of Extend Rehabilitation and Associate Professor Mark Ross of the Brisbane Hand and Upperlimb Clinic, Brisbane, Australia. The following protocol was designed as a guideline for treating patients with degenerative and post-traumatic arthritis, who have a good central slip and ligament integrity. Patients with rheumatoid arthritis require individual assessment of preoperative deformity and periarticular soft tissue quality, and may need up to three weeks of immobilization to provide for soft tissue stabilization prior to initiation of therapy.

Precautions
Variations depend upon the integrity of the central slip/fibro-osseous insertion. Hyperextension of the PIP must be AVOIDED, as this may lead to complications. Since even neutral extension may drift toward hyperextension over time, a long term mild fixed flexion deformity (5-10°) is preferred to help prevent hyperextension. In addition, apparent neutral extension clinically may represent hyperextension at the articulation due to the variability of soft tissues.

Philosophy of Rehabilitation Strategy
This rehabilitation strategy aims to maximize return of range of motion while protecting the integrity of the middle slip. It is a variation of the short arc active range of motion (SAM) protocol as described by Roslyn Evans originally for rehabilitation of middle slip injuries. This protocol is accelerated as patients have the usual resting splint, however, their flexion range is allowed to progress more rapidly as long as they do not develop any extensor lag and hyperextension is avoided at all costs.

The speed at which flexion is pursued is influenced by the surgeon's assessment of the quality of the middle slip reattachment. A strong transosseous reinsertion of the middle slip, under anatomic tension, is suggested to facilitate pursuit of this early active ROM protocol.

Every PIP patient will have program adjustments and individual consideration must be given according to surgeon directive. To assist the therapist, it is helpful to communicate the integrity of the soft tissue structures.
Initial Assessment

• Preoperative ROM/function
• Pre- & postoperative pain levels
• Reason for surgery
• Integrity of soft tissue structures (noted by the surgeon intraoperatively), especially central slip and collateral ligaments
• Type/strength of repair
• Type/strength of middle slip repair/reattachment

1-2 Weeks Postoperative Care

Wound / Edema Control
• Wound care – debulk dressings
• Compression/ Elevation

Splints

Resting splint
• Dorsal static PIP extension splint
• Blocking PIP in 15-20° flexion
• DIP may be included, if susceptible to lag
• Thin LTT suggested
• Consider any lateral instability and extend at sides to give appropriate support.

Exercise splint as per the active short arc motion (SAM) protocol – only required if central slip integrity is compromised or lag is evident.

Exercises

For patients with good central slip integrity:

Accelerated SAM Protocol
• Perform exercises in dorsal resting splint with distal strap removed
• Active PIP flexion – amount of flexion is titrated against the maintenance of active extension, i.e. extension lag
• If minimal lag, aim for 70-80° of flexion by the end of week 2
• Blocked DIP flexion (Active)
• Gentle composite flexion (active)
• Active extension to dorsal extension block splint
• “Place and hold” active extension if lag
• Frequency: 5-10 repetitions, 5X daily

For those with compromised central slip integrity:
Standard SAM Protocol
• Blocked DIP flexion (Active)
• Active PIP flexion to exercise splint (30-45°)

Other
• Avoid deviation/rotation
• No strong gripping, pinching, lifting, etc.
• Light ADL's

3-4 Weeks Postoperative Care
Wound / Edema Control
• Compression as necessary – may change to Lycra (take care to avoid hyperextension)
• Scar massage

Splint
• Resting splint as previously described
• Exercise splint if using Standard SAM protocol – increase PIP flexion to 45-60°

Exercises
For patients with good central slip integrity:
Accelerated SAM
• If difficulty achieving flexion, include active hook (DIP and PIP flexion with MCP in extension; should have full DIP flexion
• At four weeks, aim for -10° extension (10° FFD)
• Avoid hyperextension
• Intrinsic extension (blocked PIP extension to -10°)
For patients with compromised central slip integrity:

Standard SAM
• Increase to 45-60° PIP flexion
• Allow extension to -10° at 4 weeks; Avoid hyperextension

Other
• Avoid medial / lateral deviation or rotation
• No strong gripping, pinching, lifting, etc.
• Light ADL’s

5-6 Weeks Postoperative Care

Wound / Edema Control – Compression as needed

Splint
• Continue resting splint – if lag, ensure DIP is included; intermittent wear during day
• Cease exercise splints
• May use buddy taping, if flexion is poor or there are alignment issues

Exercises
Accelerated SAM or modified SAM
• Active flexion – no limits
• If stiff, isolated passive DIP; if lag, place/hold extension+++ 
• Continue to aim for -10° (at PIP)

Other – Encourage use in ADL

7-8 Weeks Postoperative Care

Wound / Edema Control – Compression as necessary
Splint – Cease splinting if no extension lag is present

Exercises
Accelerated SAM or modified SAM
• Active flexion – no limits
• Aim for full flexion
• If stiff, isolated passive DIP; if lag, place/hold extension+++ 
• Continue to aim for -10° (at PIP)
• May commence gentle passive assist, if no lag exists

8-12 Weeks Postoperative Care

Wound / Edema Control – Compression as necessary
Splint – Cease splinting if no extension lag is present
Exercises – If lag exists, commence gentle resisted extension
Other – Avoid isolated pinch, especially for Index