



UPDATE

HAND THERAPY CLINICAL UPDATE:

TREATING PROXIMAL INTERPHALANGEAL (PIP) JOINT INJURIES

BOBBI OWSLEY, OTR, CHT

We, as hand therapists, spend a significant amount of time treating proximal interphalangeal (PIP) joint injuries, regardless of direct or indirect trauma to the joint. In the case of sprains, fractures or dislocations (dorsal being the most common), early recognition and diagnosis, sufficient stabilization and early motion are the key ingredients to a successful outcome.

The challenge lies in the injured person, who like the rest of us, believes “it is just a sprain” and that it will get better with time. Only after weeks or sometimes

months go by and the lack of finger motion and continued swelling interfere with a person’s function does one seek medical advice. With a delay in correct diagnostics and positioning, contracted tissues and an edemic cycle become chronic. These factors influence the therapist’s ability to return the joint to the normal baseline of full range of motion.

When parts of our bodies hurt, we tend not to use them. Sir Charles Bell stated wonderfully in 1883, “The mechanical properties of the living frame, like the endowments of the mind, must not lie idle,

or they will suffer deterioration.” So holds true for the PIP joint!

The patient’s primary concern when they come to therapy is often “How long will it be swollen?” A grade I ligament sprain may be symptomatic for 6-12 months. When the patient hears this up front, they are better prepared to work on the digit and not focus on the limitation it presents. One of the most challenging tasks for the therapist to overcome is a lack of extension due to “extension lag” or flexion contracture of the PIP joint. With

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THE JAMMED FINGER

PHILLIP HEYMAN, M.D.

One of the more common injuries of the hand that may be seen by the primary care doctor is the so called jammed finger. This is usually an injury to the proximal interphalangeal joint (PIP joint). When confronted with a patient with a swollen and painful PIP joint, it is best to recall the PIP joint anatomy, and have a “differential diagnosis”...sprain, dislocation, or fracture, with or without dislocation. Occasionally patients present with an extensor tendon injury. Once the injury is diagnosed, have a rational treatment! It is surprising how underappreciated these potentially debilitating injuries can be.

The PIP joint is stabilized on each side by the collateral ligaments. The volar plate prevents hyperextension of the joint. (See diagram #1.) Central slip of the extensor apparatus attaches to the base of the middle phalanx, and in conjunction with the lateral bands, extend the pip joint.

When assessing the joint, be clear which finger joint is injured and order a posterior-

anterior and lateral view OF THAT JOINT. Inspection and palpation of the joint is sufficient. It is common to see a “hand” x-ray ordered for what is a PIP joint injury, and because 2 perpendicular views of the affected joint often are not obtained, a serious fracture, with or without dislocation can (and often does) get missed.

Treatment – depends on diagnosis

Sprain – A sprain is the tearing of a ligament. Sprains are graded 1-3. A Grade 1 sprain indicates stretching of the ligament, Grade 2 a partial tear, and Grade 3 a complete tear. A sprain may be of the collateral ligaments, or to the volar plate, or both. Occasionally, a small chip fracture is seen at the base of the middle phalanx. In the majority of cases, treat in an alumifoam splint holding the joint in full extension for no more than 5 days. The main problem that can and does stem from these injuries is stiffness, and excessive immobilization can make this a difficult problem to treat.

Dislocation – When diagnosed, dislocations are most easily reduced with longitudinal traction after a digital block is given. If the dislocation is not easily reduced, there may be soft tissue trapped in the joint, which indicates that a call to the hand surgeon will be necessary. Once reduced, dislocations are usually stable. The

joint should be immobilized in extension for no more than 5 days, then mobilized. Stiffness is a common complication, instability is a rare complication.



PA View

Lateral View

Fracture dislocation of PIP
Note AP view may appear normal.

Fracture – A fracture at the base of the middle phalanx (not just a small fleck of bone), may indicate a serious injury, possibly requiring surgical reconstruction. Splint, and call the hand surgeon. (See x-ray above.)

Central Slip Avulsion – can present with a sore PIP joint with poor extension. If unrecognized (confused with a sprain) a “boutonnière” deformity may result...flexed at the PIP joint and hyper-extended at the DIP joint.

Dr. Phillip Heyman is a board Certified Hand surgeon with Hand Surgery Associates, P.C., Denver, Colorado.

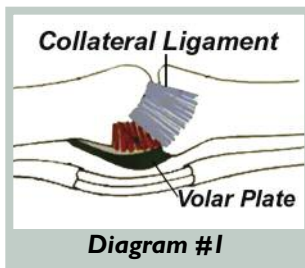


Diagram #1

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MEET OUR THERAPIST Chris Luscia, OTR

Chris received his degree in Occupational Therapy from the University of Hartford in 2001. He has been working as a Hand Therapist since his internship at Colorado Hand Therapy in 2002. He is currently studying for the Hand Therapy Certification Exam. He believes that educating the patient on their specific injury empowers them to be responsible for their recovery.

Therapy in conjunction with a good

home program is essential to achieving good results.

Chris enjoys skiing, mountain biking and kayaking. He works in our Porter and Rose clinics and is a member of the American Society of Hand Therapists and the Denver Hand Special Interest Group.



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the exception of a dorsal dislocation, most PIP injuries/repairs, if stable, should be immobilized in full extension from the start. If close attention is given to this joint position early on, it is less likely to result in a substandard outcome.

The PIP joint is a highly congruent and stable joint which is one of the primary reasons it is so challenging to rehabilitate. Recently, I overheard one hand surgeon state "there is a lot of stuff in a very small space", therefore, even the slightest imbalance caused by swelling,

scar tissue or contracted tissues can be magnified into loss of motion. In hand therapy, our principal goals are to prevent further injury to the digit, decrease pain and increase motion/function. Once the joint is stable, gentle therapy should be initiated immediately.

With the current pressure to reduce utilization of therapy services, patients are often allowed to rehabilitate independently in the first few weeks following treatment or surgery. This can actually result in more time, therapy visits and often a

sub optimal result. It is a natural fear to move an injured body part. The therapist can educate the patient to be their own therapist...which exercises are appropriate, when movement is too much or not enough, techniques to manage swelling and many treatment approaches for pain control. It seems the farther down the path we see the patient, the more time is spent playing catch up and issuing damage control.

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