

Mallet Deformity – Conservative Management

REHABILITATION PROTOCOL

Patient Name: _____ Date: _____

Diagnosis: _____

Surgery: _____ Surgery Date: _____

Description of Diagnosis:

A mallet deformity is disruption of the terminal extensor tendon secondary to a laceration, rupture of an avulsion. This zone I extensor tendon injury produces a characteristic extensor lag at the DIP joint. The injury is considered acute when it has occurred within 3 weeks. Chronic injuries are those that are greater than 3 weeks from the onset of injury.

Conservative Management – Therapy

Acute Injuries < 3 Weeks

0-6 Weeks

- A volar based mallet splint is fitted to the DIP joint in 15° of hyperextension for continual wear. The splint is secured by placing one-half inch paper tape direction over the DIP joint. The splint is removed once each day while simultaneously holding the DIP joint in extension to allow air to the volar aspect of the middle and distal phalanx. This serves to prevent maceration along the DIP joint. It is critical for the patient to not allow the DIP joint to flex with any splint removal. Should the patient inadvertently allow the finger to flex, the splint wearing time should be started over. The mallet splint is worn at all times with the exception of the daily skin care.

One Week Post Splint Application

- The patient is scheduled for a return appointment to ensure the splint is fitting properly and to inspect the skin along the volar aspect of the middle and distal phalanx.
- Active and PROM exercises are initiated to the MP and PIP joints.

6 Weeks

- AROM exercises are initiated to the DIP joint 4 times a day for 5 minute sessions. Exercise sessions should be gradually increased over the subsequent 7-10 days. Should an extensor lag begin developing, limit the number of exercise sessions. Monitor ROM closely.
- The mallet splint is continued between exercise sessions and at night.

7 Weeks

- The mallet splint is reduced to 4 one hour sessions during the day, along with night wear. The splint is reduced so long as the DIP extension remains at 0°-5°

8 Weeks

- The mallet splint is discontinued during the day and worn only at night. It is important to monitor an extensor lag as the splint wearing time is reduced.
- Gentle progressive strengthening may be initiated to the hand and wrist using putty or a hand exerciser.

9 Weeks

- The mallet splint is discontinued.

Considerations

- PROM is flexion is not initiated to the DIP joint. The patient will regain flexion through AROM.

Chronic Injuries > 3 Weeks

0-8 Weeks

- A mallet splint is fitted positioning the DIP joint in 15° of hyperextension for continual wear. Note: On occasion, in place of a mallet splint, a percutaneous pin may be placed through the DIP joint to stabilize the DIP joint in full extension until 8 weeks.
- Active and PROM exercises are initiated to the MP and PIP joints only.

8 Weeks

- AROM exercises are initiated to the DIP joint 4-6 times a day for 10 minute sessions. It is important to gradually increase the number of exercise sessions and monitor for an extensor lag at the DIP joint. Should a lag begin developing, limit the number of exercise sessions and then gradually begin increasing the exercise sessions over a 2-3 week period.
- The mallet splint is continued between exercise sessions and at night.

9 Weeks

- PROM exercises may be initiated to the DIP joint so long as the DIP joint extensor lag is less than 10°.
- The mallet splint is gradually discontinued. Typically, the splint is worn one less hour each day with a goal of discontinuing the splint within 7-10 days.

Considerations

- If the patient reports flexing the DIP joint during the initial 8 weeks of immobilization, the continuous splinting should be initiated once again for another 8 weeks.
- A small piece of Dycern can be added to the mallet splint to prevent distal slippage of the splint.

- Holes can be placed in the mallet splint to provide aeration to the skin. In addition, a light powder can be applied along the volar aspect of the skin to absorb moisture.
- Occasionally, a dorsal splint is alternated with a volar splint if skin maceration presents as a problem. However, it is advised to avoid a dorsal splint as a substitute for a volar splint. A volar based splint provides far greater support to the DIP joint and can better place the DIP joint in hyperextension.