The Orthopaedic & Fracture Clinic

Andrew McNamara, MD | The Orthopaedic and Fracture Clinic | 1431 Premier Drive Mankato, MN 56001 | 507-386-6600

Boutonniere Deformity – Conservative Management
Acute Injury: <3 weeks from initial injury

REHABILITATION PROTOCOL

Patient Name:_____ **Date:** _____

Diagnosis:_____

Surgery: _____**Surgery Date:** _____

Description of Diagnosis

- A boutonniere deformity can result from either an open or closed injury in Zone III. There is a resultant PIP flexion deformity with secondary DIP hyperextension. This type of injury can occur from the following:
    - A laceration, attenuation or rupture of the central extensor tendon.
    - A tear of the triangular ligament and fibers between the central tendon and lateral bands due to pull of the FDS.
    - The proximal phalanx head buttonholes through the dorsal defect.
    - There is volar migration of the lateral bands.
    - Hyperextension of the DIP joints occurs due to tension on the lateral bands.

Conservative Management – Therapy

0-6 Weeks

- Edema control is initiated as necessary for the digit utilizing Coban™ or fingersocks.
- A volar gutter splint is fitted, positioning the PIP joint in full extension with the DIP joint left free for ROM. The splint is worn continuously. Note: A dorsal splint may be fabricated I conjunction with the volar splint to maximize full PIP joint extension. In addition, as the acute edema has subsided, a cylinder cast may be considered to maximize excellent stability and positioning of the PIP joint in neutral.
- Active and PROM exercises are initiated to all joints of the hand with the exception of the PIP joint that has been immobilized. The key exercise is both

active and passive flexion to the DIP joint. This will place the oblique retinacular ligament on stretch and prevent lateral band adherence and subluxation.

6 Weeks

- AROM exercises are initiated to the PIP joint of the involved digit 6 days a time for 5-10 minute sessions.
- The PIP joint extension splint is continued between exercise sessions and at night.

7 Weeks

- PROM exercises are initiated to the PIP joint as necessary. It is important to monitor for an extensor lag. Should a PIP joint extensor lag greater than 10° develop, the passive flexion should be avoided.
- The wearing schedule with the PIP extension splint can gradually be decreased. To decrease the wearing time one hour each day should result in discontinuing the splint during the day between weeks 8 and 9.

8-10 Weeks

- Assuming excellent extension has been maintained, increased focus can be placed on maximizing full IP joint flexion with dynamic splinting or taping as necessary.
- The extension splint is discontinued both during the day and at night.

Considerations

- A balanced exercise and splinting program is essential to obtain the optimal outcome. The initial splinting must ensure excellent extension at the PIP joint. The splint *must* maintain 0° of extension.
- Once ROM exercises are initiated *gradually* increase the exercise sessions in order to minimize an extensor lag. It is extremely difficult to recapture extension.
- Exercises to emphasize include: passive DIP joint flexion and extension with the PIP joint at 0° and blocking the MP joint in flexion while attempting IP extension.