

## **Congenital Trigger Thumb**

Triggering normally occurs when localized swelling of the flexor tendon sheath at the level of the metacarpophalangeal (MP) joint

It causes the tendon to get caught under the A1 pulley of the flexor tendon sheath.

With greater constriction, the tendon suddenly sticks proximal to the sheath, causing the thumb to lock in flexion. Occasionally, the nodule may catch within the sheath, locking the digit in extension.

Thickening and histologic changes occur within the A1 pulley; occasionally, a ganglion develops on the tendon sheath.

Examination reveals a tender nodule at the base of the thumb [Npptt's node].

Children with trigger thumb rarely complain of pain. They usually are brought in for evaluation when aged 1-4 years, when the parent first notices a flexed posture of the thumb IP joint. These children often demonstrate bilateral fixed flexion contractures of the thumb by the time they present to the physician.

Recent studies demonstrate that more than 60% of pediatric trigger thumbs will resolve without surgery.

The flexor anatomy of the thumb differs from that of the fingers. The FPL is a single tendon within the flexor sheath that inserts onto the base of the distal phalanx. The fibro-osseous sheath is comprised of 2 annular pulleys (A1 and A2) that arise from the palmar plates of the MP and IP joints, respectively. The oblique pulley, which originates from and inserts onto the proximal phalanx, is the most important pulley from a biomechanical perspective. The oblique pulley is approximately 10 mm in length, blending with a portion of the adductor pollicis insertion.

The digital nerves and arteries run parallel to the tendon sheath distally. At the level of the MP flexion crease, they lie just deep to the skin. Proximal to the A1 pulley, the radial digital nerve of the thumb crosses obliquely over the sheath.

The pediatric trigger thumb must be differentiated from fracture, dislocation, congenital absence of the extensor, and, less commonly, cerebral palsy or arthrogryposis.

### **Prognosis**

If trigger thumb is present at birth, approximately 60 % of children will recover spontaneously in two years;

If trigger thumb develops in a child over three years of age, however, it almost never improves spontaneously; therefore, it is wise to operate as soon as acceptable at this age. A child not seen until after the age of four has a 50 per cent chance of developing a permanent flexion contracture;

### **Treatment:**

- surgery should be considered if not resolved by 12 months of age;
- most surgical procedures for trigger thumb should be postponed until the age of 2 yrs, 1

complication of significance in this anomaly is the severing of one of the digital nerves; radial digital nerve is esp at risk;

It is the authors' belief that a transverse skin incision and surgical release of the A1 pulley for trigger thumb in children is a successful procedure even when done after age 3, but IP motion loss and metacarpal phalangeal hyperextension may occur in the long term

