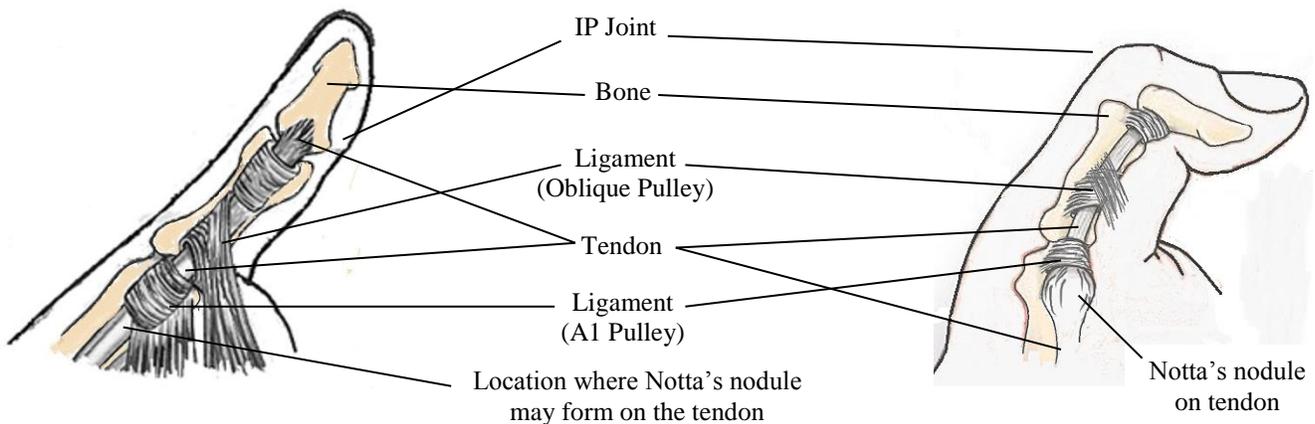




Pediatric Trigger Thumb

Pediatric trigger thumb (PTT) is also called a flexion contracture of the IP joint (Picture 1). It is a condition that affects the movement of the thumb in children. The thumb gets stuck in a bent (flexed) position. A contracture means that the thumb can no longer stretch or straighten.

Tendons work to make our thumbs move. They are like strings inside your thumb and are held in place by a tunnel system of ligaments (also known as “pulleys”). These tunnels or ligaments keep the tendon next to the bone and allow it to slide back and forth (Picture 1).



Picture 1 Inside a normal thumb

Picture 2 Pediatric Trigger Thumb and Notta's nodule

When the tendons are pulled through the ligament, the thumb bends or flexes.

In PTT, a tendon cannot slide back and forth through the ligament. The thumb becomes locked in a flexed position. The child can no longer straighten his thumb. The name “trigger” comes from the clicking sensation felt when the tendon pops through the ligament or “triggers” between a locked position and straight position.

Cause

The exact cause of PTT is not known. Children are not born with it. It does not occur from overuse, trauma, or injury. We do know that there is a mismatch in size between the tendon that moves the thumb and the ligament through which the tendon glides. The ligament is too tight over the tendon. The tendon then swells and becomes thick. Sometimes a bump, called a Notta's nodule, forms on the tendon. The Notta's nodule stops the tendons from gliding properly (Picture 2).

About 3 in 1000 children will develop PTT between age 1 and 3. Most often, it occurs in children at about age 2. Boys and girls have the same risk of developing PTT. Both thumbs can be affected in up to 30 percent of children.

Signs

To diagnose PTT, the medical provider will take a medical history and examine your child. If one or more of the following is present, the diagnosis is made:

- Thumb is locked in a bent position.
- A bump or nodule (Notta's nodule) is present on the palm side, at the base of the thumb.
- There is a sensation of popping, clicking or catching when the thumb is moved.

There may also be pain and swelling at the base of the thumb, although that is rare.

Treatment

There are three ways to treat PTT.

1. **Wait and watch to see if the flexion contracture goes away on its own.** In children younger than one year of age, PTT sometimes disappears without anything being done. It may take many months or years.
2. **Stretching and splinting the thumb.** The doctor will teach you how to stretch and massage your child's thumb. After being stretched, the thumb will be kept straight in a splint. Your child may need to wear the splint at all times or at specific times, such as when sleeping. Keeping the thumb in a straight position, without allowing movement, can help the swelling go down. Some children find splinting painful when a Notta's nodule is forced to press nonstop against the ligament. Stretching and splinting are not always successful. Movement may be improved but full motion may not be achieved.
3. **Surgery.** If PTT does not go away on its own and stretching and splinting does not work, then surgery can cure the problem. Surgery is done in an outpatient setting and has few risks. The surgeon will make a small cut or incision at the base of the thumb where the thumb meets the palm (Picture 3). Then, the surgeon cuts through the ligament where the tendon gets stuck. The A1 pulley ligament is cut; none of the oblique pulley ligament gets cut (Picture 1).

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Treatment, continued

The surgeon does not need to cut the tendon or remove the Notta's nodule. Cutting the A1 pulley takes the pressure off of the tendon so that it can glide smoothly.

After surgery, your child will have no restrictions on using his thumb. He can use it without worry of hurting the surgical repair. He will wear a bandage for 3 days (Picture 4).



Picture 3 Small cut or incision at base of thumb



Picture 4 Bandage after surgery remains in place for 3 days

The bandage must stay dry. Although pain after surgery is unusual, you can give your child acetaminophen (Tylenol[®]) or ibuprofen (Motrin[®]) if needed.

Follow-up

You may remove the bandage 3 days after surgery. Once it is removed, your child can bathe and go back to all activities. Cover the wound with a small Band-Aid[®] until the stitches dissolve and the wound is completely healed. Your child will have a follow-up appointment at the clinic within 2 weeks after surgery.

When to Call the Doctor

Call your child's doctor if any of these things occurs:

- The bandage gets soiled, wet, or starts falling apart.
- Fingers are not pink and warm.
- Your child is crying more than usual or is in pain.
- Your child has a fever over 101°F after surgery.

Pediatric hand specialists at Nationwide Children's Hospital take care of many patients with PTT. We would be pleased to treat your child and answer any questions you may have. Please call 614-722-HAND (or 614-722-4263) to schedule an appointment.