Posterior Interosseous Nerve Entrapment

The posterior interosseous nerve can become compressed at the point where it passes through the supinator muscle located in the proximal forearm. The nerve is responsible for finger extension, as well as wrist extension to a certain degree. Patients will often have tenderness and pain in the forearm whenever performing an activity and they might have a degree of finger extension weakness when compared to a normal arm. Numbness shouldn't be present with this condition.

Posterior interosseous nerve entrapment is not very common. Sometimes the condition is known as posterior interosseous nerve syndrome. The nerve tends to get trapped at the elbow, at a part known as the radial tunnel. It is often caused by repeated twisting of your forearm, but can occur spontaneously. It can also occur following fracture of the radius.

Posterior Interosseous Nerve Entrapment Anatomy

The forearm is the distal region and structure making up the upper part of the limb between the wrist and the elbow. Two long bones make up the forearm, the ulna and the radius, which form the radioulnar joint. The interosseous membrane is what connects these two bones together. The forearm is covered with skin, the anterior surface isn't as hairy as the posterior surface.

Multiple muscles are located in the forearm, including the extensors of the digits and the flexors, supinators and pronators that work to turn the hand downward and upward and the flexor of the elbow. When cross-sectioning, the forearm can easily be divided into two fascial compartments. In the posterior compartment, the hand extensors lie, which are supplied by the radial nerve. In the anterior compartment, the flexors are supplied by the median nerve. The ulnar nerve runs along the entire length of the forearm.

The ulnar and radial arteries, as well as their branches, supply blood to the forearm. They normally run along the anterior face of the ulna and the radius and down the entire forearm.

How to Treat Posterior Interosseous Nerve Entrapment:

1. **Rest**
   Avoid any repetitive strain on the area. If you notice pain when performing certain activities, refrain from doing those activities and give the area time to rest and heal.
2. **Physical Therapy**
   If you have weakness in the arm, physical therapy can help to build strength and flexibility in the joint. It can completely cure the problem. Therapists will often use soft tissue techniques to reduce pressure on the nerve. Electrotherapy can also be useful, such as TENS and ultrasound. Ice applied regularly will often help.
3. **Steroid Injections**
   Even though some people have found relief from the pain and inflammation with steroid injections, it can often be difficult to get the injection near the nerve. An ultrasound guided injection is likely to be more useful.
4. **Surgery**
   Decompressing the posterior interosseous nerve is an option when symptoms aren't improving after going through three months of conservative therapy. If finger extension weakness is significant and tests have confirmed nerve damage near the supinator muscle, or if there is a cyst that shows up on an MRI, you might have to go through surgery earlier to correct the condition.

Tips:

- Whenever engaging in any sporting activity, make sure to use the proper equipment, conditioning and techniques to prevent an injury from occurring.
- An anti-inflammatory can help to alleviate some of the pain in the arm.
- Apply ice for 5-10 minutes at a time three to five times per day to help alleviate some of the swelling and pain following an injury.
- Tennis players commonly get this injury because of the repetitive movement in their arms.
- Conditioning exercises can help to provide you with long-term relief.

