DR VANESSA SAMMONS

NEUROSURGEON

Guide to

PRONATOR SYNDROME

Median Nerve Decompression

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KEY FACTS

- Pronator Syndrome is a treatable condition caused by the compression of the median nerve near the elbow
- It can be caused by repetitive movements and by underlying conditions such as diabetes and hypothyroidism
- Symptoms include aching pain in the forearm, weakness in the thumb and index finger, tingling in the thumb and index finger, and numbness in the hand
- Treatment options include rest, splinting, hand therapy and surgery
- Full recovery may take as long as six months, longer if there has been severe nerve damage

WHAT IS THE PRONATOR MUSCLE?

The pronator teres muscle (often simply called the pronator muscle) is a muscle located on the underside of the forearm. It allows the hand and forearm to rotate so the surface of the palm is facing downwards or backwards.

WHAT IS PRONATOR TERES SYNDROME?

Pronator Teres Syndrome (PTS) is a compression neuropathy causing pain in the arm, wrist, and hand. It occurs when the body's median nerve is compressed and entrapped as it passes under the pronator muscle. It's similar to, but discernible from its more common distal counterpart, carpal tunnel syndrome.

WHAT ARE THE SYMPTOMS OF PRONATOR SYNDROME?

The symptoms of Pronator Syndrome (PTS) are similar to, but distinct from Carpal Tunnel Syndrome (CTS). A key difference is that CTS symptoms worsen at night, while PTS symptoms do not.

- **Aching** in forearm
- **Muscle weakness** in the forearm, wrist, and/or fingers
- **Numbness** in the forearm, palm, and/or fingers
- **Pain** in the forearm, palm, and/or fingers
- **Pain** that increases with activity, but improves with rest
- **Tenderness** when pressing on the pronator teres muscle
- **Tingling sensation** in the forearm, palm, and/or fingers

WHAT CAUSES PRONATOR SYNDROME?

Pronator syndrome may develop due to:

- **Age/Gender** – Men and women can both develop Pronator Syndrome, but it's most often a problem for women over 40
- **Medical Reasons** – People who suffer from diabetes and hypothyroidism are at increased risk for developing PTS
- **Profession** – Carpenters, mechanics, and others who rotate their forearms as part of their job are at increased risk
- **Sports Activities** – Racquet sports (tennis), rowing, and weightlifting can contribute to the development of PTS
- **Other** – Pronator syndrome can develop due to bony abnormalities, and trauma, and tumours

WHEN SHOULD I CONSULT A DOCTOR?

No-one should live with pain. If you are experiencing symptoms of Pronator Syndrome and they're interfering with your daily life, contact your GP. Pronator Syndrome can worsen if left unaddressed and can lead to irreversible nerve damage. If it's diagnosed early, PTS can be treated with a range of non-surgical and surgical treatments. Most importantly, a medical professional can put your mind at ease and help you decide what to do next.

HOW IS PRONATOR SYNDROME DIAGNOSED?

For many patients, a simple physical examination is sufficient to diagnose Pronator Syndrome. In addition to a physical exam, and to rule out other possible causes for symptoms, your doctor may also recommend:

- MRI
- Nerve conduction studies

An accurate diagnosis using these easy-to-tolerate tools will help your doctor determine which treatments will help you achieve optimal healing.

HOW IS PRONATOR SYNDROME TREATED?

Conservative, non-surgical treatments are generally recommended for mild to moderate cases of Pronator Syndrome. These include:

- Hand therapy
- Taking a break from sports and other activities that aggravate the pronator teres muscle
- Wearing a splint to prevent the forearm from rotating

If the symptoms haven't subsided, a minimally invasive surgical procedure can be performed to decompress the nerve and to restore optimal function.

Median nerve decompression surgery (sometimes referred to as Pronator Release Surgery) is typically performed as an outpatient procedure, which means there's no overnight hospital stay, though some factors may suggest an in-patient (overnight) procedure is needed. It's performed using general anaesthesia.

WHAT CAN I EXPECT AFTER MEDIAN NERVE DECOMPRESSION SURGERY?

When your surgery is complete, you will be taken to a recovery room and observed. When you wake up, you will be drowsy. Your hand and arm are likely to be numb from the anaesthetic. As the pain medication leaves your body, you are likely to feel pain and swelling at the treatment site. To help your body heal, Dr Sammons may recommend all or some of the following:

- Appropriate pain medication
- Keeping your arm elevated above chest height (this reduces swelling and facilitates good circulation)
- Wearing an arm sling
- Physiotherapy to improve mobility, strength, and range of movement

The effects may be noticeable immediately. "One day after surgery, the tingling sensations in the first and second fingers were much improved," found researchers for the paper Early Surgical Treatment of Pronator Teres Syndrome. "... one month later, muscle atrophy had improved... three months later, motor power of the first-third fingers had improved (and the patient) showed no difficulty in dexterous activities."

ARE THERE RISKS TO NERVE DECOMPRESSION SURGERY?

All surgery carries some risk, particularly when performed using anaesthesia. Pronator Release Surgery is considered a relatively safe procedure with rare, but possible complications including:

- Loss of function
- Nerve injury
- Persistent pain

The possible consequences of not having surgery (permanent nerve damage) far outweigh the risks for most patients.

WHAT SHOULD I DO AFTER SURGERY?

The steps you take at home will affect the outcome of your surgery. Dr Sammons will provide you with guidelines which should be followed carefully. These may include:

- **Keep your hand elevated** as much as possible for the first 24-72 hours to reduce swelling
- **Do not remove your bandage** until instructed, but do keep it clean and dry
- **Commit to physical therapy**
- **Call your surgeon** if your wound becomes swollen or your pain increases

SHOULD I FOLLOW UP WITH DR SAMMONS AFTER SURGERY?

Absolutely. You will need to see Dr Sammons for a follow-up visit 4-5 weeks after surgery. A practice nurse will reach out to you during the week after surgery to schedule your follow-up. Should you have any concerns, be aware that Dr Sammons is happy to talk and meet with you earlier to address them.

DOES PRONATOR SYNDROME COME BACK?

The majority of patients who undergo median nerve decompression surgery regain full use of the pronator muscle, with pain relief beginning almost immediately. It may take 4 to 5 months for strength to return. Patients should avoid activities that contribute to the condition which can recur.

Please call our rooms if you have any additional concerns or questions.

Hello!

I'm a Neurosurgeon at North Shore Private Hospital, Gosford Private Hospital, Brisbane Waters Private Hospital and the Sydney Adventist Hospital. I treat all neurosurgical conditions, but with a particular interest in Peripheral Nerve Surgery. I pride myself on providing personalised and thoughtful patient care and utilising my skills to achieve the best outcome possible.

I believe that a great neurosurgeon will ensure you feel listened to, will ensure that you understand what your surgery involves, and should also work together with your GP to achieve the best outcome for you.

Dr Vanessa

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