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Distal median nerve dysfunction

Distal median nerve dysfunction is a form of peripheral neuropathy that affects the movement of or sensation in the hands.

A common type of distal median nerve dysfunction is carpal tunnel syndrome.

Causes

Dysfunction of one nerve group, such as the distal median nerve, is called a mononeuropathy. Mononeuropathy usually means there is a local cause of the nerve damage. Diseases affecting the entire body (systemic disorders) can also cause isolated nerve damage.

This condition occurs when the nerve is inflamed, trapped, or injured by trauma. The most common reason is trapping (entrapment) by a ligament in the wrist. This causes carpal tunnel syndrome. Trapping puts pressure on the nerve where it passes through a narrow area. Wrist fractures may injure the median nerve directly. Or, it may increase the risk for trapping the nerve later on.

Inflammation of the tendons (tendinitis) or joints (arthritis) can also put pressure on the nerve. Some repetitive movements increase the chance of developing carpal tunnel entrapment. Women are more affected than men.

Problems that affect the tissue near the nerve or cause deposits to form in the tissue can block blood flow and lead to pressure on the nerve. Such conditions include:

- Too much growth hormone in the body (acromegaly)
- Diabetes
- Underactive thyroid (hypothyroidism)
- Kidney disease
- A blood cancer called multiple myeloma
- Pregnancy
- Obesity
- Amyloidosis

In some cases, no cause can be found. Diabetes can make this condition worse.

Symptoms

Symptoms may include any of the following:

- Pain in the wrist or hand that may be severe and wake you up at night, and that may be felt in other areas, such as the upper arm (this is called referred pain)
- Sensation changes in the thumb, index, middle, and part of the ring fingers, such as a burning feeling, decreased sensation, numbness and tingling
- Weakness of the hand that causes you to drop things or have difficulty grasping objects or buttoning a shirt

Exams and Tests

Your health care provider will examine your wrist and ask about your medical history. Tests that may be done include:

- Electromyogram (EMG) to check the electrical activity of the muscles
- Nerve conduction tests to check how fast electrical signals move through a nerve
- Neuromuscular ultrasound to view problems with the muscles and nerves
- Nerve biopsy in which nerve tissue is removed for examination (rarely needed)
- Blood tests to look for medical conditions associated with mononeuropathy
- Magnetic resonance neurography (very detailed imaging of the peripheral nerves)

Treatment

Treatment is aimed at the underlying cause.

If the median nerve is affected by carpal tunnel syndrome, a wrist splint can reduce further injury to the nerve and help relieve symptoms. Wearing the splint at night rests the area and decreases inflammation. An injection into the wrist may help with symptoms, but it won't fix the underlying problem. Surgery may be needed if a splint or medicines don't help. Using proper ergonomics at work is essential. For example, you should use proper wrist support if you use a keyboard and mouse for computer work.

For other causes, treatment may involve any of the following:

- Medicines to control nerve pain (such as gabapentin or pregabalin)
- Treating the medical problem causing nerve damage, such as diabetes or kidney disease
- Physical therapy to help maintain muscle strength

Outlook (Prognosis)

If the cause of the nerve dysfunction can be identified and treated, there is a good chance of full recovery. In some cases, there is some or complete loss of movement or sensation. Nerve pain may be severe and persist for a long time.

Possible Complications

Complications may include:

- Deformity of the hand (rare)
- Partial or complete loss of hand movement
- Partial or complete loss of sensation in the fingers
- Recurrent or unnoticed injury to the hand

When to Contact a Medical Professional

Contact your provider if you have symptoms of distal median nerve dysfunction. Early diagnosis and treatment increase the chance of curing or controlling symptoms.

Prevention

Prevention varies, depending on the cause. In people with diabetes, controlling blood sugar may reduce the risk of developing nerve disorders.

For people with jobs that involve repetitive wrist movements, a change in the way the job is performed may be needed. Frequent breaks in activity may also help.

Alternative Names

Neuropathy - distal median nerve

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