CONDITION

Claw hand

Learn how claw hand affects finger position and function, what can cause it, and how nerve care, hand therapy, splinting, or surgery may help.

WHAT IT IS
Finger deformity caused by muscle imbalance

BODY SYSTEM
Nervous system

MAIN SYMPTOMS
Clawed finger position, weak grip, numbness or tingling, finger stiffness

WHAT CAUSES IT
Nerve damage or compression

HOW IT IS DIAGNOSED
Physical examination, nerve conduction studies, EMG

MAIN TREATMENT
Nerve care, hand therapy, splinting, or surgery

CAN IT BE CURED?
Sometimes - depending on nerve recovery

IS IT AN EMERGENCY?
Sometimes - sudden weakness or a cold, pale, blue hand

LONG-TERM OUTLOOK
May improve, but long-standing nerve damage can be permanent

Overview

Claw hand is a pattern of finger deformity caused by an imbalance among the muscles that move the fingers. The knuckles where the fingers meet the hand, called the metacarpophalangeal or MCP joints, bend backward too far. At the same time, the middle and end joints of the fingers remain bent.

Claw hand is not a single disease. It is often a sign of nerve damage or compression. The ulnar nerve is commonly involved. This nerve helps control many of the small muscles in the hand, especially those that spread the fingers and stabilize them during gripping and pinching.

When only the ulnar nerve is affected, clawing usually appears mainly in the ring and little fingers. Damage involving both the ulnar and median nerves can affect all four fingers. The thumb may also be weak, depending on which nerves and muscles are involved.

The deformity may be flexible at first, meaning the fingers can still be moved into a more normal position with the other hand. Over time, shortened muscles, tendons, and joint tissues can make the position fixed. Early evaluation matters because treatment of an active nerve problem may help preserve strength and prevent stiffness.

Claw hand can interfere with grip, fine hand movements, work, self-care, and hobbies. However, its appearance does not always show how severe the nerve injury is. A less obvious deformity can still occur with significant nerve damage.

Symptoms

The main sign is an abnormal resting position of one or more fingers. The MCP joints are overly straight or bent backward, while the finger joints farther from the hand are bent. The position may become clearer when trying to straighten the fingers.

Other symptoms depend on the cause and location of the problem. They may include:

Symptoms from ulnar nerve compression at the elbow may worsen when the elbow stays bent, such as while sleeping or holding a phone. Leaning on the inner elbow can also trigger tingling. Compression at the wrist may produce a different pattern of sensation because some sensory branches leave the ulnar nerve before it enters the wrist.

Arrange a medical appointment if finger clawing, numbness, or hand weakness is new, persistent, or getting worse. Progressive weakness and visible muscle loss deserve prompt assessment even if pain is mild.

Seek urgent or emergency care after a deep cut, crush injury, major fall, or other trauma if the hand becomes weak or difficult to move. Rapidly increasing pain or swelling, or a hand that becomes cold, pale, blue, or unusually numb, also requires urgent care.

Call emergency services for sudden hand or arm weakness accompanied by facial drooping, speech difficulty, confusion, severe dizziness, or another possible sign of stroke. Stroke does not usually cause the classic claw pattern by itself, but sudden one-sided weakness should not be assumed to be a local hand problem.

- Weak grip or difficulty holding objects
- Trouble spreading the fingers apart or bringing them together
- Difficulty pinching a key, buttoning clothing, typing, or using utensils
- Numbness or tingling in the little finger and part of the ring finger
- Loss of muscle bulk between the hand bones or along the little-finger side of the palm

- Aching, burning, or electric-shock sensations in the hand or forearm
- Finger stiffness or reduced range of motion

Causes and risk factors

Clawing usually develops when the small muscles inside the hand lose their normal nerve supply. These muscles ordinarily bend the MCP joints while helping straighten the finger joints. When they become weak, larger forearm muscles pull the fingers into the claw position.

Ulnar nerve damage is a frequent cause. The nerve may be compressed at the inner elbow, known as cubital tunnel syndrome, or at the wrist in an area called Guyon's canal. Pressure may come from repeated elbow bending, prolonged leaning on the elbow, a cyst, scar tissue, arthritis, or changes after a fracture or dislocation.

Cuts and other injuries can damage the ulnar nerve in the forearm, wrist, or hand. A higher injury near the elbow or upper arm may affect additional muscles. Some higher ulnar nerve injuries produce less visible clawing because the muscles that bend the ends of the fingers may also be weak. This is sometimes called the "ulnar paradox."

Damage to both the ulnar and median nerves can produce clawing across all four fingers. These nerves may be affected by a serious forearm or wrist injury. Problems involving the lower brachial plexus-the network of nerves between the neck and arm-or certain nerve roots in the neck can sometimes cause a similar pattern.

Long-term peripheral nerve disorders may also lead to muscle imbalance. Possible contributors include diabetes, inherited nerve disorders, and Hansen disease, also called leprosy. Hansen disease is uncommon in many countries but remains an important cause of peripheral nerve damage in some regions.

Factors that may increase the chance of an ulnar nerve problem include repeated pressure on the elbow or palm, prolonged elbow flexion, prior elbow or wrist trauma, and medical conditions that affect nerves. Not everyone with these risk factors develops claw hand.

Some conditions resemble claw hand but have a different cause. Dupuytren contracture thickens tissue in the palm and pulls fingers inward without the typical MCP hyperextension. Severe forearm swelling that interrupts blood flow can lead to Volkmann ischemic contracture, a fixed claw-like position requiring urgent treatment when the injury occurs. Joint disease, tendon injury, burns, and scarring may also alter finger posture.

Diagnosis

Diagnosis begins with a history and physical examination. A clinician will ask when the changes started, whether they followed an injury, and whether symptoms worsen with certain elbow or wrist positions. Information about neck symptoms, medical conditions, work activities, and previous surgery may help identify the cause.

The examination usually compares both hands. The clinician may check finger posture, joint flexibility, grip, pinch strength, sensation, and muscle bulk. Specific movements can test the small hand muscles and the muscles controlled by the ulnar and median nerves. The elbow, wrist, forearm, shoulder, and neck may also be examined.

Nerve conduction studies measure how quickly electrical signals travel through a nerve. Electromyography, often called EMG, measures electrical activity in selected muscles. Together, these tests can help locate nerve damage, estimate its severity, and show whether recovery may be occurring. Testing can be uncomfortable, but it is generally brief.

Ultrasound or magnetic resonance imaging may be used to look for nerve swelling, a cyst, scar tissue, or another structural problem. X-rays can show fractures, arthritis, or bone changes. Blood tests are not needed for every person, but they may be ordered if a broader nerve disorder or medical condition is suspected.

The clinician will also determine whether the fingers remain flexible. This distinction helps guide treatment because a flexible deformity may respond differently from a fixed joint contracture.

Treatment and management

Treatment depends on the cause, where the nerve is affected, how long symptoms have been present, and whether the joints remain flexible. The goal is to protect the nerve, preserve movement, improve hand function, and prevent a fixed deformity.

For mild nerve compression without major weakness, management may begin with activity changes. Avoiding pressure on the inner elbow and limiting long periods of deep elbow bending may reduce irritation from cubital tunnel syndrome. If pressure is occurring at the wrist, changes to tools, cycling position, or workstation setup may help.

A clinician or hand therapist may recommend a splint. An elbow splint can limit bending during sleep in some cases. A hand-based "anti-claw" orthosis holds the MCP joints in a better position so the fingers can straighten more effectively. Splints should be fitted and monitored because excess pressure can irritate skin or nerves.

Hand therapy may include guided range-of-motion work, strategies for daily activities, and

exercises selected for the specific nerve and muscles involved. Stretching can help prevent stiffness. Strengthening is usually introduced only when appropriate because poorly chosen exercises may not correct the underlying imbalance.

Pain management may be discussed if discomfort is present, but pain medicines do not reverse nerve damage. Treatment of an underlying condition, such as diabetes or an inflammatory disorder, may support overall nerve health.

Surgery may be considered when a nerve has been cut, compression is severe, weakness is progressing, muscle loss is present, or nonoperative care has not provided enough improvement. Depending on the problem, surgery may release pressure around the nerve, move the nerve to a safer position, repair it, or bridge a gap with a nerve graft. In selected injuries, a nerve transfer can redirect a working nerve branch toward weakened muscles.

If clawing remains after nerve recovery has stopped or is unlikely, tendon transfer surgery may improve finger balance. This procedure reroutes a functioning tendon so it can perform part of the job of paralyzed muscles. Fixed joints may first require soft-tissue release or, less often, a procedure to stabilize a joint.

Nerves recover slowly, and the final result may not be clear for months. Surgery cannot always restore normal strength or sensation. Rehabilitation and splinting are often important parts of recovery.

Complications

Without effective management, claw hand can become fixed as joints and soft tissues tighten. Ongoing weakness may reduce grip, pinch, coordination, and the ability to release objects. Numbness can make cuts, burns, or pressure injuries harder to notice.

Long-standing nerve damage may cause permanent muscle wasting. It can also affect work, driving, personal care, and activities that require precise finger control. Some people develop persistent nerve pain.

Possible complications of surgery include infection, scarring, stiffness, continued numbness or weakness, and failure to achieve the expected correction. Tendon or nerve procedures may also require a prolonged therapy program. A surgeon can explain the risks that apply to the planned operation.

Follow up

Follow-up is used to track strength, sensation, joint flexibility, and changes in the finger

position. Clinicians may adjust a splint, modify therapy, or repeat nerve testing if recovery is uncertain.

Keep scheduled appointments even if tingling improves, especially when weakness or muscle loss has been present. Sensation may improve before muscle function, and reduced pain does not always mean the nerve has fully recovered.

Contact the treating clinician sooner if weakness progresses, the fingers become harder to straighten, or a splint causes skin sores, swelling, or increased numbness. After surgery, follow the care team's instructions and report wound drainage, fever, worsening redness, or an unexpected loss of hand movement.

Sources

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