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Brachial plexopathy



Brachial plexopathy is pain, decreased movement, or decreased sensation in the arm and shoulder due to a nerve problem.

Causes

Brachial plexus dysfunction (brachial plexopathy) is a form of [peripheral neuropathy](#). It occurs when there is damage to the [brachial plexus](#), an area on each side of the neck where nerve roots from the spinal cord split into each arm's nerves.

Damage to the brachial plexus is usually related to direct injury to the nerve, stretching injuries (including birth trauma), pressure from tumors in the area (especially from lung tumors), or damage that results from [radiation therapy](#).

Brachial plexus dysfunction may also be associated with:

- Birth defects that put pressure on the neck area
- Exposure to toxins, chemicals, or drugs
- General anesthesia, used during surgery
- Inflammatory conditions, such as those due to a virus or immune system problem

In some cases, no cause can be identified.

Symptoms

- [Numbness](#) of the shoulder, arm, or hand
- [Shoulder pain](#)
- Tingling, burning, pain, or abnormal sensations (location depends on the area injured)
- [Weakness](#) of the shoulder, arm, hand, or wrist

Exams and Tests

An exam of the arm, hand and wrist can reveal a problem with the nerves of the brachial plexus. Signs may include:

- Deformity of the arm or hand
- Difficulty moving the shoulder, arm, hand, or fingers
- Diminished arm reflexes
- Wasting of the muscles
- Weakness of hand flexing

A detailed history may help determine the cause of the brachial plexopathy. Age and gender are important, because some brachial plexus problems are more common in certain groups. For example, young men more often have inflammatory or postviral brachial plexus disease called Parsonage Turner syndrome.

Tests that may be done to diagnose this condition may include:

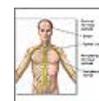
- Blood tests
- Chest x-ray
- Electromyogram (EMG)
- MRI of the head, neck, and shoulder
- Nerve conduction tests
- Nerve biopsy (rarely needed)
- Ultrasound

Treatment

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Treatment is aimed at correcting the underlying cause and allowing you to use your hand and arm as much as possible. In some cases, no treatment is required and recovery happens on its own.

Over-the-counter or prescription pain medications may be needed to control pain. Anticonvulsants (phenytoin, carbamazepine, gabapentin, and pregabalin), tricyclic antidepressants (amitriptyline and nortriptyline), or other medications (duloxetine) may be prescribed. Use the recommended dose possible to avoid side effects.

- Physical therapy may be recommended for some people to help maintain muscle strength.
- Orthopedic assistance may increase your ability to use your hand and arm. Such therapy may involve braces, splints, or other appliances.
- Vocational counseling, occupational therapy, occupational changes, job retraining, or other measures may be recommended.

Some patients with brachial plexopathy may benefit from local nerve blocks. Surgery may be needed if nerve compression is the cause of the symptoms.

If other nerves are also affected, an underlying medical problem that can affect nerves should be considered. Medical conditions such as diabetes and kidney disease can damage nerves. In these cases, treatment is also directed at the underlying medical condition.

Outlook (Prognosis)

The likely outcome depends on the cause. A good recovery is possible if the cause is identified and properly treated. In some cases, there may be a partial or complete loss of movement or sensation. Nerve pain may be severe and may persist for a long time.

Possible Complications

- Deformity of the hand or arm, mild to severe, which can lead to [contractures](#)
- Partial or complete arm [paralysis](#)
- Partial or complete loss of sensation in the arm, hand, or fingers
- Recurrent or unnoticed injury to the hand or arm due to diminished sensation

When to Contact a Medical Professional

Call your health care provider if you experience pain, numbness, tingling, or weakness in the shoulder, arm, or hand.

Prevention

Prevention is varied, depending on the cause.

Alternative Names

Neuropathy - brachial plexus; Brachial plexus dysfunction; Parsonage Turner syndrome; Pancoast syndrome

References

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Chad DA. Disorders of nerve roots and plexuses. In: Daroff RB, Fenichel GM, Jankovic J, Mazziotta JC, eds. *Bradley's Neurology in Clinical Practice*. 6th ed. Philadelphia, Pa: Saunders Elsevier; 2012:chap 75.

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