Complex Regional Pain Syndrome

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Cause

Most cases of CRPS are triggered by a specific trauma or injury, such as a fracture, sprain/strain, soft tissue injury, immobilization, or surgical procedure. In CRPS, an abnormal response is magnified the effects of the injury. Not everyone who experiences the above injuries will develop CRPS. It is not clear what exactly causes CRPS or why some individuals develop it when others do not.

In some cases, CRPS may not be caused by a known injury. An internal injury caused by infection, blood vessel problem, or entrapment of the nerves may also cause CRPS.

Symptoms

- Pain is the key symptom. Pain is usually continuous and intense and out of proportion to the severity of the injury. Pain usually increases with time. Pain may feel like a burning or "pins and needles" sensation.
- There may be a change in color, texture, or temperature of skin, often appearing red, hot, and shiny.
- There may be increased sensitivity to touch, increased sweating, swelling, or stiffness of the affected area.
- Muscle control of the area may also be affected, causing decreased range of motion or abnormal movements.

Anatomy Involved

The nervous system is responsible for all motor activity of the body and all processing of sensory input. It is made up of 2 systems: the central nervous system, which is made up of the brain and spinal cord; and the peripheral nervous system, which is made up of the nerves that run from the spinal cord to the rest of the body. The peripheral nervous system sends out motor control demands from the brain and relays incoming sensory information back to the spinal cord and brain.

CRPS occurs due to a malfunction of both systems and may or may not involve an actual injury to nerves.

Treatment

The goal of treatment is to reduce pain and increase function.

Nonoperative Management

Pain Management → Pain management is an important part of conservative treatment of CRPS. You may be provided instruction on how to perform this at home, or it may be done in the clinic. This usually involves application of cold or heat.

Weight Bearing/Distraction → It is likely that your occupational therapist (OT) will instruct you in a scrubbing or carrying exercise to be performed frequently throughout the day. This is designed to provide heavy feedback to your nervous system.

Mirror Therapy → This is a relatively new technique. By looking at a reflection of the unaffected limb performing a task while your affected limb is hidden out of sight, your brain will process the reflection as the affected limb, essentially tricking your brain into processing the activity as not painful.

Home Program → Your occupational therapist will likely provide instruction on a variety of activities listed above to be performed at home.

Medication → Your physician may prescribe medication be taken. The medication may vary based on patient and symptoms.

Operative and Other Management

Sympathetic Nerve Block → This involves injecting an anesthetic next to the spine to block nerve activity. The anesthesia is designed to numb the affected nerves and block pain. Over time, these injections may help decrease symptoms.

Other surgical procedures are available as a last resort if treatment listed above is not successful.

References

Complex Regional Pain Syndrome. (2014, September 26). Retrieved February 2, 2015, from http://www.ninds.nih.gov/disorders/reflex_sympathetic_dystrophy/detail_reflex_sympathetic_dystrophy.htm

Skirven, T., Osterman, A., Fedorczyk, J., & Amadio, P. (2011). Complex Regional Pain Syndrome: Types I and II. In *Rehabilitation of the Hand and Upper Extremity* (6th ed., Vol. 2, pp. 1470-1478). Philadelphia: Elsevier.