

Small Fiber Peripheral Neuropathy

Small fiber peripheral neuropathy is a type of neuropathy that occurs from damage to the small unmyelinated peripheral nerve fibers. These fibers, categorized as C fibers, are present in skin, peripheral nerves and organs. The role of these nerves is to innervate the skin (somatic fibers) and help control autonomic function (autonomic fibers).

Sensory symptoms of small fiber neuropathy are highly variable. Common complaints include paresthesias, dysesthesias, and insensitivity to pain. Paresthesias are abnormal sensations. They are often described as numbness, burning, cold, prickling, pins and needles and more. Dysesthesias are altered normal sensations. A light breeze, the feeling of clothes, or even a soft touch can cause pain.[3] Insensitivity to pain can be a particular problem. One may be bleeding or have a skin injury without even knowing it.

Topographic pattern

Like many polyneuropathies, the symptoms usually start in the longer nerves and progressively attack shorter nerves. This means that most often the symptoms start in the feet and progress upwards, and usually symptoms are more severe in the feet. However, patients with Fabry disease have isolated small fiber involvement, and can have a more widespread small fiber disruption.

Diagnosis

This neuropathy is considered a separate clinical entity from a regular large-fiber polyneuropathy. Small fibers are difficult to diagnose. The diagnosis of a large-fiber (common) polyneuropathy is much easier. Many large-fiber polyneuropathies have minor small-fiber involvement, and small-fiber involvement is often implied if the patient has minor small-fiber symptoms in addition to large-fiber symptoms. The clinical picture of an isolated small fiber neuropathy is characteristic, but the diagnosis is not always easy.

It is often a disorder diagnosed by ruling out everything else. In fact, nerve conduction tests and electromyography (EMG tests), which are good at diagnosing other neuropathies, are usually bad at detecting small fiber neuropathies. Quantitative sensory testing (QST) can be used to measure more objective changes in the temperature sensation. An elevated heat-detection threshold, heat-pain threshold, a reduced cold detection threshold or cold pain threshold may indicate a small-fiber neuropathy. A conventional nerve biopsy is not useful, since in this procedure mostly large fiber nerves are studied. A skin biopsy (with the measurement of intraepidermal nerve fiber density) can be used for a diagnosis, but is not commonly available. This test allows for direct visualization of the un-myelinated nerve fibers (the "small fibers") in the epidermal layer of the skin, and requires taking a small skin sample.

Causes

The classic example of a small fiber neuropathy is Fabry disease. Sometimes the disorder is caused by diabetes, HIV, Erythromelalgia, postherpetic neuralgia, CRPS, alcoholism, and many other nerve pain conditions; its cause is also commonly idiopathic. Since there are no known causes for most cases and most tests do not identify it, not much money is spent on curing idiopathic cases.

Importance as a marker of Fabry disease

Small fiber neuropathy is important in the early detection of Fabry disease, which is currently treatable. Fabry disease can lead to stroke, heart and kidney failure. Small fiber neuropathy is an early sign. The diagnosis of a small fiber neuropathy could lead to an early diagnosis of Fabry disease, which could make organ damage less likely.

Treatment

Treatment is based on the underlying cause, if any. Where the likely underlying condition is known, treatment of this condition is indicated to reduce progression of the disease and symptoms. For cases without those conditions, there is only symptomatic treatment.

These are alternative treatments that are effective. Speak to your chiropractor who is trained in neuropathy rehabilitation for additional information.

References

1. Overview of Small Fiber Neuropathy. Therapath Pathology.
2. Zhou, Lan (2000). Small fiber neuropathy: A burning problem Cleveland Clinic Journal of Medicine, vol.76 5.
3. Latov, Norman. Peripheral neuropathy: when the numbness, weakness, and pain won't stop. American Academy of Neurology (AAN) quality of life guides, 2007, p.8.

See also

- Neuropathy
- Polyneuropathy
- Wartenberg's migratory sensory neuropathy



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