AUSTIN NEUROMUSCULAR CENTER

PATIENT EDUCATION

SKIN BIOPSY / SMALL FIBER NEUROPATHY

Small fiber neuropathy results from damage to the small unmyelinated nerve fibers that connect the pain receptors in the skin to the spinal cord and brain. *(Myelin is a fatty white substance that surrounds the electrically insulating material that forms a layer, the myelin sheath, usually around the axon of a nerve. It is essential for the proper functioning of the nervous system.)*

Like a large fiber neuropathy, there are many causes for small fiber neuropathy, such as diabetes, autoimmune diseases, toxicity, and nutrition.

The condition is diagnosed by demonstrating a reduction in the epidermal nerve fiber density (ENFD) in a skin punch biopsy. Unlike large fiber neuropathy, the diagnosis is easy to miss, as the sensory examination and EMG and nerve conduction studies are usually normal.
Making the correct diagnosis explains the symptoms, guides the evaluation for the underlying cause, and helps decide treatment.

REASONS FOR PERFORMING A SKIN BIOPSY

- To diagnose small fiber neuropathy.
- To follow up on the progression of neuropathy in response to therapy.
- To provide documentation for purposes of insurance coverage to support recommended treatments.
- To confirm the diagnosis of sensory neuropathy in a patient with a compatible clinical presentation but normal electrodiagnostic studies.
- To diagnose vasculitis (blood vessel) neuropathy involving the skin.
- To diagnose amyloid neuropathy.

(Amyloid is a hard waxy substance consisting of protein and polysaccharides that result from tissue degeneration and is deposited in organs or tissues of the body in various chronic diseases.)

- Indicated for patients with a diagnosis of fibromyalgia (widespread musculoskeletal pain) with a specific underlying cause.
- Indicated for patients with unexplained muscle pain and cramps.
- Help establish a cause of dysautonomia such as POTS (Postural Orthostatic Tachycardia Syndrome).

(Dysautonomia is a disorder of the autonomic nervous system, characterized by lack of reflexes, abnormal sweating, defective lacrimation and sense perceptions, emotional instability, and motor incoordination.)

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SKIN BIOPSY PROCEDURE

Skin biopsies are performed in an office setting. The test area is cleaned with alcohol, and then a local anesthetic is injected. Then, a small piece of skin (3mm in diameter; 2 mm deep) is removed with a small tool. There are two biopsy areas, but three samples are taken - one above the knee and two above the ankle.

RISKS OF SKIN BIOPSY PROCEDURE

It is a simple procedure with minimal to no complications if performed in the right setting. Reported complications are mainly but are not limited to bleeding and infection.

POST BIOPSY INSTRUCTION

- The biopsy site may bleed for the rest of the day.
- It may or may not form a scab in a few days. Keep the area clean and dry.
- Do not soak in water.
- No swimming, hot tubs, or baths until the scab falls off.
- Showering is permitted after the first 24 hours.
- Change the bandage at least once daily and whenever it becomes wet or damp.
- Once a scab has formed, or new skin begins to grow over the area, and the bleeding has stopped, a bandage is no longer necessary.
- The biopsy site may form a small scar or slight indentation and may be slightly discolored.
- In the long term, while minimal scarring may occur, the biopsy site is usually indistinguishable within a few months.

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