

Study finds inflammation causes some postsurgical neuropathies

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A new Mayo Clinic study found that nerve inflammation may cause the pain, numbness and weakness following surgical procedures that is known as postsurgical neuropathy. The development of postsurgical neuropathies is typically attributed to compression or stretching of nerves during surgery. This new research shows that, in some cases, the neuropathy is actually caused by the immune system attacking the nerves and is potentially treatable with immunosuppressive drugs. The study was published in this month's issue of *Brain*.

Postsurgical neuropathy is an uncommon complication of surgery. [Peripheral nerves](#) are the extensive network of nerves that link the brain and spinal cord (the [central nervous system](#)) to all other parts of the body. When damaged by stretching, compression or inflammation, the peripheral nerve injury can interfere with communication between the brain and the rest of the body (muscles and sensation are controlled by the nerve). Individuals with postsurgical neuropathy may experience loss of sensation, pain and muscles weakness.

"It is important that a person with postsurgical inflammatory neuropathy receive a diagnosis and treatment quickly. Understanding the role of inflammation in these patients' neuropathy can lead to appropriate immunotherapy and improvement of neurological symptoms and impairments," says P. James Dyck, M.D., a Mayo Clinic neurologist and senior author of this study.

As part of the research, Dr. Dyck and a team of Mayo Clinic researchers

selected 23 patients who developed neuropathy within 30 days of a [surgical procedure](#). According to Dr. Dyck, the neuropathy of these 23 patients did not make sense in terms of being caused by stretching or compression because the nerves damaged were usually in a different part of the body from the surgical site or the neuropathy occurred at least a few days after the surgery was over. The surgical procedures were orthopedic, abdominal, chest or dental. All the patients received a nerve biopsy, of which 21 demonstrated increased inflammation. Seventeen patients were treated over a three-month period with [immunotherapy](#), and in all cases with follow-up the neuropathy impairments improved.

"This is exciting for patients because it allows for appropriate identification and accurate treatment of postsurgical neuropathy. Without showing inflammation on the nerve biopsies, we would have been unable to know the cause of the neuropathy," says Nathan Staff, M.D., Ph.D., a Mayo Clinic neurologist and the first author of this study.

"It is logical for patients to believe that it was the surgeon's fault that they developed a neuropathy because it occurred after the surgery," says Dr Dyck. "However, in these cases, we have strong evidence that the [neuropathies](#) were not the surgeon's fault but were caused by the immune system attacking the nerves."

Provided by Mayo Clinic

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