Neuropathic pain

Neuropathic pain (NP) is defined as "pain arising as a direct consequence of any lesion or disease affecting the somatosensory system."[1,2] Although NP may be an idiopathic process reflecting abnormal sensory processing in the peripheral or central nervous system, it more often appears following physical insult or disease affecting the peripheral or central nervous system. It is likely that chronic peripheral neuropathy may lead to neuroplastic changes and affect the central nervous system. These functional and anatomical changes can exacerbate the overall experience of pain. As the changes become more chronic, co-morbid conditions such as sleep disorders, anxiety and depression can accompany the chronic pain, and further complicate treatment.

The prevalence of NP conditions is difficult to establish. There are many confounding factors that may lead to under-reporting of NP. In primary medical care settings, the prevalence has been reported to be between 2 and 11%.[3,4] Studies have focused on specific NP conditions, secondary to other pathological conditions. It has been shown that the about 26% of patients with type 2 diabetes can experience neuropathy. Cancer patients indicate a prevalence of 19–39. About 1% and 37% of chronic low back pain patients may have a neuropathic component related to it.[5-7] Even with high prevalence in chronic conditions, the overall numbers of NP conditions tends to be small. One of the reasons is the lack of identification, diagnosis, and treatment. There is no standard approach between health care providers for NP. NP can be localized to the craniofacial region such as in trigeminal and glossopharyngeal neuralgia, painful traumatic trigeminal neuropathy (PTTN), burning mouth syndrome, or may affect other areas of the body such as in case of diabetic neuropathy. In the orofacial region, NP mainly affects the trigeminal nerve and can be referred to as Neuropathic Orofacial Pain (NOP).

Peripheral NP can be a result of nerve damage. Different types of nerve damage such as crush, transection, partial transection, and inflammatory insult can induce various clinical pain presentations and further complicate the process of diagnosis and management. In the orofacial region, development of pain following nerve damage (i.e., PTTN) is around 3–5%, which is low when compared to other parts of the body, where an incidence of painful traumatic neuropathy is 5–17%.[8-11] PTTN secondary to dental procedures can be a major complication. Third molar extractions have been reported to cause altered sensations in 0.3–1% of cases.[12-14] Persistent pain after successful endodontics has been found to occur in 3–13% of the patients.[15-17] The incidence of neurosensory disturbance post implant can range anywhere from 0.6 to 36%.[18-21]

Causes of central pain may include trauma, cerebrovascular injuries, tumors, multiple sclerosis, and Parkinson's disease. NP can also be classified based on frequency into continuous or episodic. Episodic neuropathies are usually characterized by short, sudden, sharp, or electrical like paroxysmal pain. The pain is usually severe and sporadic in nature. Continuous NP is usually characterized by continuous dull pain of mild to moderate intensity with occasional paroxysms of pain.

There is presently no definitive cure to this condition, and the available treatment requires long-term prescription medications with significant side effects. In some cases, surgical procedures and adjunctive therapy are also recommended. Evaluation of sensory alterations can be performed using quantitative sensory testing which is a noninvasive assessment of normal and abnormal responses of the nervous system to various stimuli. Mapping and sketches of the affected area can help treatment decisions and management. The medications used for NP can include antidepressants, anticonvulsants, antiarrhythmics, opioids and nonopioid analgesics, and topical medications.[22] Adjunctive treatment can include but is not limited to a variety of options which include physical therapy, acupuncture, hypnosis, counseling, biofeedback, massage, relaxation, pressure, herbs, yoga, exercise, and electrotherapy. The prevailing "trial and error" approach to NP treatment includes a titration regimen of 3–8 weeks which is very often repeated several times before an effective medication for the individual patient is identified. As health care providers it is important to recognize NOP conditions to avoid unnecessary treatment and suffering.

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Conflicts of interest
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