

THE RICHEIMER PAIN UPDATE

from The Richeimer Pain Medical Group
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UNDERSTANDING NOCICEPTIVE & NEUROPATHIC PAIN

For the last 300 years, our understanding of pain has been dominated by the idea that the human body is a complex machine which is separate from the process of perception. However, pain is an experience and cannot be separated from the patient's mental state, including their environment and cultural background. These factors can be so critical that they can actually cause the brain to trigger or abolish the experience of pain, independent of what is occurring elsewhere in the body. Therefore, when assessing a complaint of pain, it is critical to also investigate the appropriate mental and environmental factors.

Pain experts have divided the physical causes of pain into two types: nociceptive and neuropathic pain. The differences are important for understanding the nature of the pain problem and especially for determining how to treat the pain.

1. NOCICEPTIVE PAIN - Examples include sprains, bone fractures, burns, bumps, bruises, inflammation (from an infection or arthritic disorder), obstructions, and myofascial pain (which may indicate abnormal muscle stresses).

Nociceptors are the nerves which sense and respond to parts of the body which suffer from damage. They signal tissue irritation, impending injury, or actual injury. When activated, they transmit pain signals (via the peripheral nerves as well as the spinal cord) to the brain. The pain is typically well localized, constant, and often with an aching or throbbing quality. Visceral pain is the subtype of nociceptive pain that involves the internal organs. It tends to be episodic and poorly localized.

Nociceptive pain is usually time limited, meaning when the tissue damage heals, the pain typically resolves. (Arthritis is a notable exception in that it is not time limited.) Another characteristic of nociceptive pain is that it tends to respond well to treatment with opioids.

2. NEUROPATHIC PAIN - Examples include post herpetic (or post-shingles) neuralgia, reflex sympathetic dystrophy / causalgia (nerve trauma), components of cancer pain, phantom limb pain, entrapment neuropathy (e.g., carpal tunnel syndrome), and peripheral neuropathy (widespread nerve damage). Among the many causes of peripheral neuropathy, diabetes is the most common, but the condition can also be caused by chronic alcohol use, exposure to other toxins (including many chemotherapies), vitamin deficiencies, and a large variety of other medical conditions--it is not unusual for the cause of the condition to go undiagnosed.

Neuropathic pain is the result of an injury or malfunction in the peripheral or central nervous system. The pain is often triggered by an injury, but this injury may or may not involve actual damage to the nervous system. Nerves can be infiltrated or compressed by tumors, strangulated by scar tissue, or inflamed by infection. The pain frequently has

burning, lancinating, or electric shock qualities. Persistent allodynia, pain resulting from a nonpainful stimulus such as a light touch, is also a common characteristic of neuropathic pain. The pain may persist for months or years beyond the apparent healing of any damaged tissues. In this setting, pain signals no longer represent an alarm about ongoing or impending injury, instead the alarm system itself is malfunctioning.

Neuropathic pain is frequently chronic, and tends to have a less robust response to treatment with opioids, but may respond well to other drugs such as anti-seizure and antidepressant medications. Usually, neuropathic problems are not fully reversible, but partial improvement is often possible with proper treatment.

3. MIXED CATEGORY PAIN - In some conditions the pain appears to be caused by a complex mixture of nociceptive and neuropathic factors. An initial nervous system dysfunction or injury may trigger the neural release of inflammatory mediators and subsequent neurogenic inflammation. For example, migraine headaches probably represent a mixture of neuropathic and nociceptive pain. Myofascial pain is probably secondary to nociceptive input from the muscles, but the abnormal muscle activity may be the result of neuropathic conditions.

And remember, treating the physical, as well as using the mind's ability to heal itself, will optimize the treatment process.

Until next time...Steven Richeimer, M.D.