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Itching back? Think of notalgia paraesthetica, a rare condition which can easily be treated

Abstract

Notalgia paraesthetica is a rare condition characterized by pain and itching in a limited area of the back, usually at the level between T2 and T6. It is caused by the impingement of the dorsal rami on the corresponding intercostal nerves. These rami pierce the paraspinal muscles which can be in spasm responding to pain originating in the vertebrae. The treatment should be directed to mobilization of the vertebrae and decreasing the muscle spasm. When these simple techniques are insufficient, the nerve has probably degenerated and the condition is irreversible. The patient thus should be treated as for painful neuropathy.

Key words: notalgia paraesthetica, pain, itching

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Introduction

Notalgia paraesthetica (NP) is a rare condition affecting the spine which results in burning pain, itching or numbness [1, 2]. The area affected is usually between the T2 and T6 vertebrae and typically only involves the paraspinal part of the dermatome, and only rarely the whole dermatome. NP is known to be a consequence of repetitive injuries, such as car accidents with whiplash, but may also follow unusual and violent movements and direct trauma to the back [3]. In most cases, this syndrome results from compression of the dorsal branch of the intercostal nerves. There are two types of neurons conveying itch [4]. The first involves mechano-insensitive, histamine-responsive fibres. Itch conveyed in this way is separate from the pain but is sensitive to antihistamines. However, it is now well-established that the tropical plant cowhage (*Mucuna pruriens*) evokes a histamine-independent

itch through its spiculae [5]. The active agent inducing the itch has been identified as mucunain protease, which activates host PAR-2 and PAR-4 receptors on the mechano-sensitive C-fibres [6–8]. This type of itch is not responsive to antihistamines and is often seen together with pain. This is the predominant mechanism of neuropathic itch. Lack of histamine at the onset of itch explains the lack of primary skin symptoms and inflammation.

Here we present a case of NP and explain the mechanism of this symptom and possible treatment modalities.

Case description

A 40-year-old healthy man suffered a whiplash injury after a head-to-tail car accident. He was a lean athlete, jogged every day and occasionally ran a full marathon. A couple of weeks after the accident he noticed itching under his right shoulder

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blade. The itch was intense and the patient could not sleep at night because of it. The itch did not disappear after the use of antihistamines. His General Practitioner prescribed 0.25% capsaicin cream to be applied daily, which diminished the itching only slightly. After its discontinuation, the itch returned. Seven months after the accident he sought help from a specialist. On examination there was found, on the right side of the spine at the level of T5, a 20 cm long and one dermatome wide patch of slightly darker skin with multiple scratch marks. In this area there was marked allodynia and hyperalgesia. His back was investigated while he was lying flat, face down. Each of the vertebrae was tested for its mobility. The T5 spinous process was tender on palpation and the vertebra was clearly less mobile than the other vertebrae. The patient was first referred for MRI of the thoracic spine, which revealed no abnormalities. The patient was placed on the couch, again flat and face down. The T5 vertebra was then compressed with a single high velocity thrust, while the patient exhaled air from his lungs. A clear "click" was heard but it was only minimally painful. One day later, the symptoms of pain and itch had disappeared. The patient was instructed to lie down daily on the floor for 15–20 minutes on a rolled towel. If this did not help, the patient would be referred to a chiropractor. However, this was not found to be necessary.

Discussion

Notalgia paraesthetica results from compression of the dorsal rami of the intercostal nerve. This usually takes place in the paraspinal muscles which are pierced by the dorsal rami on each level. This is also the reason why NP does not usually extend the whole length of the dermatome but is limited to the first part served by the dorsal ramus. The reason for compression is probably decreased mobility of the vertebrae, usually due to some degenerative changes in the vertebrae accompanied by unusual movement or trauma. Blocking of the vertebrae limits their mobility but is always accompanied by pain and increased tension of the paraspinal muscles.

Treatment should be directed to relieving muscle spasm through mobilization or manipulation of the thoracic vertebrae. In otherwise healthy people this can be done immediately after making the diagnosis and an MRI is not necessary, as it is usually normal or reveals common degenerative abnormalities of the vertebrae. Doctors attending a patient can try to manipulate the vertebrae themselves.

However, if the pain recurs the patient should be referred to a chiropractor. Manipulation of the vertebrae is one thing; decreasing the spasm of the muscles is another. When the muscle spasm persists, the vertebrae may easily become "fixed" again. Other modalities of treatment are also possible. TENS [9] but also injections of botulinum toxin [10] into the muscle in spasm have been tried and found to be successful. In the early stages, nerve compression may result in increased density of mechanosensitive, cowhage-sensitive and histamine-insensitive neurons in the skin neurons expressing more peripheral receptors [11]. This may explain the increased sun sensitivity of the skin and the darkening seen in our case. In this phase the patient can also be treated with capsaicin, which causes denervation of the skin [12]. Positive results are obtained in approximately 30% of patients. In later stages, the density of the neurons after persistent nerve compression is decreased [13] and this may explain the failure of capsaicin in some patients. In later, less readily-reversible stages of neuropathy, the treatment can include amitriptyline, oxcarbazepine¹⁴ or gabapentin¹⁵ and all other drugs used in the treatment of painful neuropathies.

Conclusion

Notalgia paraesthetica is a rare condition which can also affect healthy people. The mechanism of this recalcitrant symptom is now better elucidated and treatment is usually simple and effective.

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