Pain Associated with Heterotopic Ossification: Does It Have a Neurogenic Component as Well?

To the Editor,

Heterotopic ossification (HO) is the formation of the lamellar bone within the tissues where normally osseous tissue does not exist. Neurogenic HO is a frequent complication after spinal cord injury and traumatic brain injury and it is rarely seen after several neurologic disorders such as stroke, encephalitis, and multiple sclerosis (1). Pain, usually severe, is commonly associated with HO particularly in immature phases. Overall, HO is already a challenging condition, and pain associated with HO can result in a decreased quality of life (2).

Regarding the characteristics of the pain, nociceptive mechanisms already play an important role by insulting the adjacent soft tissues, causing inflammation, and triggering spasticity (2,3). Concerning the etiology of HO, neuropeptides, substance P, calcitonin gene-related peptide, prostaglandins, and bone morphogenic protein can cause some sensory and sympathetic changes within the peripheral nerves. Moreover, Haran et al reported that HO tissue has some nerves (4). From this point of view, a neuropathic mechanism might cause pain in patients with HO. However, to the best of our knowledge, neuropathic pain in HO has not been studied yet. Any sort of nerve entrapments can be another cause of pain in HO.

Non-steroidal anti-inflammatory drugs and bisphosphonates are the mainstay for the medical treatment of HO (5). Although non-steroidal anti-inflammatory drugs are taken in higher doses, pain remains a considerable problem in daily clinical practice. On the other hand, since the patients with HO have a neurologic insult (spinal cord injury, traumatic brain injury) as well, neuropathic pain can be attributed to these neurologic insults. As such, the possible neuropathic pain due to HO can easily be overlooked.

In short, herein we would like to draw attention to the fact that HO might cause neuropathic pain apart from nociceptive pain. However, the literature lacks sufficient data. Therefore, further studies concerning the association of neuropathic pain and morphologic and physiologic characteristics of the nerves in HO are awaited.

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