Phantom Extremity Pain Responding to Stellate Ganglion Blockage: Case Report

Stellat Ganglion Blokajına Yanıt Veren Fantom Ekstremite Ağrısı: Olgu Sunumu

Fantom Ekstremite Ağrısı / Phantom Extremity Pain

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Özet

Amputasyondan sonra var olmayan ekstremitede hissedilmeye devam eden ağrıya fantom ekstremite ağrısı denir. Fantom ektsremite ağrısının patofizyolojik mekanizması ve etiyolojisi kesin bilinmemekle birlikte hastaları fiziksel ve psikososyal yönlerden etkilemektedir. Bu yazıda medikal tedaviye yanıt vermeyen ve lidokain, bupivakain ve fentanil uygulanarak stellat ganglion blokajı yapılan ve ağrı şikayetlerinde gerileme gözlenen bir olgunun sunulması amaçlanmıştır.

Anahtar Kelimeler

Fantom Ekstremite Ağrısı; Stellat Ganglion; Sinir Blokajı

Abstract

Phantom extremity pain is that which continues to be felt in a non-existent extremity after amputation. The pathophysiological mechanism and etiology of phantom extremity pain are not exactly known, Phantom extremity pain affects the patients in physical and psycho-social aspects. This paper presents a patient with phantom extremity pain that had not responded to medical treatment. A stellate ganglion blockage was performed using lidocaine, bupivacaine and fentanyl and the patient's pain was observed to be reduced.

Keywords

Phantom Extremity Pain; Stellate Ganglion; Nerve Blockage

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Introduction

The pain defined as the actual or potential tissue damage or resulting in similar situations and sensory experience an unpleasant sensation by International Association for the Study of Pain [1]

Phantom extremity pain (PEP) is that continues to be felt in non-existent extremity after amputation. This condition, first described by French surgeon Ambros Pare in the 16th century, can be seen in 50-80 % of patients following the amputation of a limb [2, 3]. The pathophysiological mechanism and the etiology of the PEP are not exactly known, PEP affects the patients in both physical and psycho-social aspects.

This study presents a patient with PEP on which a stellate ganglion blockage was performed using lidocaine, bupivacaine and fentanyl.

Case Report

Following a severe injury cause by an electric shock which occurred 20 years earlier the arm of a 52 year-old male was amputated to the distal portion. He presented to our algology department in May 2011. The initial examination showed that the patient had no other diseases or medical conditions. His physical and neurologic signs were normal. The patient explained that he had five surgical procedures as a pain palliative and he had taken carbamazepine for a while but this had had reduced the pain. The patient's Visual Analog Scale (VAS) was about 9-10 out of 10 and he was taking nonsteroid anti-inflammatory medication. The patient was hospitalized for pain palliation and pregabalin and tramadole were administered. Since the patient's pain did not decrease a stellate ganglion blockage was performed by applying 2 ml 2 % lidocaine + 25 mcg fentanyl + 2 ml from 0.5 % isotonic bupivacaine to form a sympathetic blockage with anterior paratrachial approach. This process was carried out ten times every other day. On the third week of hospitalization the patient whose VAS was 0-3 was discharged with 600 mg/day pregabalin, 200 mg/day tramadole medical treatment. In the follow-up control one year after discharge from hospital, it was found that his VAS had been over 5 and during this period he had been diagnosed with major depression by our psychiatry department and he had been prescribed antidepressant medication. Stellate ganglion blockage was again performed and the patient's VAS decreased to 1-3. The patient is still being followed up at our polyclinic.

Discussion

Although post-amputation PEP is a common condition, there is still no special treatment program for clinicians to guide them in the treatment of PEP. Most of the pharmacological treatments have limited benefits and only a few have evidence-based effectiveness and reliability [4].

Opioids, tramadole, tricyclic antidepressant drugs, ketamine and sodium channel blockers are used for pharmacological treatment. In addition to neurectomy in patients who develop neurinoma there are other surgical invasive procedures such as nerve block, rhizotomy, spinal cord stimulation, deep brain stimulation and cortical stimulation. Furthermore, there are other treatment option such as mirror therapy, transcutaneous nerve stimulation and cognitive behaviorist pain treatment [5].

Peripheral and central neural mechanisms are proposed as one explanation of the formational mechanism of PEP. However, there are also multiple mechanisms including psychiatric disorders that are often considered to be responsible for the existence of PEP.

In neurinoma which are formed in nerve endings of the amputation stumps, expressions in sodium channels was said to increase and cause hyperexcitability and forming spontaneous bursting by Dickinson, and et al. [6].

In recent years, the sensitizing of the spinal cord and cortical reorganization have been the most commonly stated mechanism that explains the formational mechanism of PEP. During the reorganization, in cortical areas relating to the amputated extremity, the surrounding areas continue to exist in the primary somatosensory and motor cortex. Afferents of the neurons around stump can be considered to be partly responsible for cortical reorganization [7].

Although in literature there is no evidence that supports the forming of PEP psychogenic mechanisms, there are some opinions that anxiety and depression can increase PEP [8].

This paper presents a case of PEP that did not respond to pharmacological treatment, but the patient's e pain decreased after the application stellate ganglion blockage PEP. However, it was found that after a diagnosis of depression the PEP returned.

Since the patient was without pain for a period after the initial stellate ganglion blockage and again after the second intervention, we are of the opinion that this condition results from very complex mechanisms can be treated temporarily and this state of being well can be sustained with the help of periodic sympathetic blockage.

Competing interests

The authors declare that they have no competing interests.

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