CASE REPORT

Obturator Nerve Block for Post Herpetic Neuralgia at an Unusual Site: A Case Report

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ABSTRACT

Post Herpetic Neuralgia (PHN) is a debilitating complication of herpes zoster, the risk of which increases with age. It is the commonest long-term complicationwhich results after reactivation of varicella zoster virus (VZV). VZV establishes latency in the ganglia of dorsal root following a primary infection and may be reactivated with an acute phase causing pain and skin rash. Despite numerous treatment advances, many patients remain refractory to the current therapies and continue to have pain, physical and psychological distress. We present a case report of 45 years old woman who developed PHN in an unusual site and did not respond to traditional management strategies available. Obturator nerve block was used to treat her intense pain and mechanical allodynia. She responded well and tremendously improved.

Key Words:Neuropathic pain, Post Herpetic Neuralgia, Visual analogue scale (VAS), allodynia, hyperalgesia, Obturator nerve block, Pregabalin

INTRODUCTION:

In cranial nerves and ganglia of spinal roots, the reactivation of the varicella-zoster virus results in Herpes zoster (HZ). The post-herpetic neuralgia (PHN), which is the commonest complication, starts after one to six months of complete healing of skin rashes of HZ infection when thepatient experienced chronic neuropathic pain. The features of PHN are described by patients as superficially burning, lancinating and persistent deep cramping pain.12 Postherpetic neuralgia can occur with injury secondary to altered gene expression in the sensory nerves that can induce neurochemical, physiological, and/or anatomical modifications (such as afferent terminal sprouting).^{3,4} This can lead to a hyper excitable state of the neuron that is associated with

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<u>Correspondence to:</u> Dr. Muhammad Saleh Khaskhali Department of Anesthesiology, Surgical Intensive Care Unit and Pain Medicine. PUMHS Nawabshah-SBA Email: beesaleh@hotmail.com PHN.⁵ The immune system responds to the activation of the virus and produces antiinflammatory cytokines and chemokines, which can further damage the nerves of the dorsal root ganglia. Rowbotham et al., ⁶quantified the sensory presentations and proposed three subtypes based on his research: 1) The irritable nociceptive group, with mechanical allodynia and normal or hyperalgesic thermal sensation 2) The central reorganization group with mechanical allodynia and thermal sensory deficits and 3) The differentiation group with ongoing pain, without allodynia, and profound sensory loss. There are various risk factors for PHN including advanced age, greater acute pain, severe rash, prodromal pain, ophthalmic location, and possibly the female sex.

CASE REPORT:

A 45 year old lady, with diagnosis of Herpes Zoster 4 months back evolving to postherpetic neuralgia, referred by Dermatologist to Pain Management center PUMHS with complaints of severe pain and continuous burning since one month at genitofemoral area, medial aspect of left upper thigh and posteromedial surface of left knee and intense hypersensitivity to

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light tactile stimulation, such as clothing brushing against the skin. She visited dermatologist very frequently and was taking Carbamazepine 200 mg BID, Pregabalin 75 mg BID and also taking of Paracetamol 325 mg and tramadol 37.5 mg TID in combination, however without improvement, Patient referred persistent severe pain score = 10by the visual analogue scale (VAS) and burning with anelectric shock like pain which would worsen at night. On physical examination, she experienced mechanical allodynia and hyperalgesia up to the root of her thigh. There were few crust-type healed skin marks, restricted to theupper medial thigh and one mark on aninferolateral aspect of external genitalia (vulva) visible.

Treatment offered at pain center was Obturator nerve block with Nerve Stimulator technique and drugs used were 2% xvlocaine 80 mg and triamcinolone 40 mg to a total volume of 10 ml. There has been a clinical improvement with decreased pain intensity (VAS = 7) within 2-3minutes. Medication dosage revised as Carbamazepine is reduced to 100 mg BID, Pregabalin increased to 100 mg BID Acetaminophen and tramadol reduced to BID. Follow up visits planned and discussed with the patient. She is called for the second visit after one week. When she reported 50-60 % reduction in pain and touch of clothes was tolerable. Block repeated with the same technique and drugs doses. The patient reported almost 100% pain relief immediately (VAS < 2). Medications again revised as Carbamazepine and acetaminophen and tramadol combination stopped. Pregabalin continued in the same dose and she is called to visit after one week. On her third visit, she reported herself painfree.Pregabalincontinued till her next visit after one week. On the fourth visit, the patient was free of pain and we started tapering of pregabalin and stopped after two weeks. The patient was maintained under observation with weekly visits to the outpatient setting for three months.

DISCUSSION:

Herpes Zoster is a self-limited disease, however, there may be complications and permanent sequelae. In the prodromal period, its diagnosis is difficult because it may take up to three weeks for the appearance of skin lesions. This delays the beginning of the treatment. It affects especially chest and face and lower limbs are a more uncommon location of the disease.

The International Association for the Study of Pain has given the definition of Post Herpetic Neuralgia (PHN) as the pain of prolonged duration which starts after healing of acute herpes zosterinfection and is associated with the degeneration of skin.Dworkin defined the term in1994 as chronic dermatomal pain which remains there for at least 90 days after the manifestation of the acute herpes zoster rash.^{8,9}The aim of therapy for PHN is to decrease the morbidity rate by using of tricyclic antidepressants, anesthetics, anticonvulsants, corticosteroids, analgesics, and antiviral agents. Recently a vaccine has been approved which will be helpful in preventing the outbreaks of HZ and PHN. It was demonstrated in a recent trial that for neuropathic pain the Gabapentin and Nortriptyline were found more effective when administered in combination as compared with monotherapy.¹⁰

Another study found that a single 60minute treatment with the high-concentration capsaicin patch NGX-4010 reduced PHN for up to 12 weeks regardless of concomitant systemic neuropathic pain medication use.¹¹ Despite all of the currently available conservative therapeutic options, a substantial number of patients become refractory to these treatments and require surgical procedures such as neurolytic nerve blocks, peripheral neurectomy, dorsal root entry zone lesions, sympathectomy, trans-spinal ganglionectomy and prefrontal lobotomy.¹² Onofrio BM *et al.* found that a long-term success rate of 30% was found with dorsal rhizotomy to treat post-herpetic neuralgia.¹³

Other therapies include, neuromodulation/ spinal cord stimulation, transcutaneous electrical nerve stimulation (TENS), acupuncture, physical therapy, psychological intervention, Gunns I/M stimulation, vincristine iontophoresis, and current perception threshold analysis, for evaluating the symptoms of PHN and determining the

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appropriate strategy for such patients.

However, the role of interventional pain management techniques for PHN is still disputed.¹³ Commonly used interventions are epidural injections,¹⁴ paravertebral nerve blocks,¹⁵ sympathetic nerve blocks, intrathecal steroids, and pulsed radiofrequency.^{16,17}

Obturator Nerve Block:

Main contraindications of obturator nerve block include Patient refusal, coagulopathy, hematoma or infection at the block site, inguinal lymphadenopathy, and pre-existing obturator neuropathy. A landmarkof the block using Labat's classical approach¹⁸is, pubic tubercle. The patient lay supine, with the limb to be blocked at 30degree abduction. After identification of the pubic tubercle, a long (10-cm) block needle is inserted 1.5 cm inferior and 1.5 cm lateral to the tubercle. The needle is advanced posteriorly until bone is contacted.

Redirecting laterally and caudally, the needle is advanced an additional 2-4 cm until a motor response (thigh adduction) is elicited and maintained below 0.5 mA. Following careful aspiration for the nonappearance of blood, 10-5 ml of local anesthetic is injected. Other approaches includepsoas compartment block, three in one block, iliofacial block techniques. Block evaluation is done by the absence of motor response. Complications are though rare including perforation of rectum, bladder or spermatic cord, intra-neuronal injection, and unintentional intravascular injection into obturator vessels resulting in hematoma formation or local anesthetic toxicity.

The effectiveness of nerve block remains in 40-65 % cases of PHN, which persists more than a month, but as the duration rises the efficacy reduces and it is not effective when the duration is more than a year. The effectiveness is more marked in younger age and in the case where the treatment starts earlier.¹⁹

CONCLUSION:

PHN treatment difficulties are considerable for the personal and social life of patients Because they affect sleep and the ability to work and perform physical activities, thus affecting their quality of life. So, one must pay attention to signs and symptoms in unusual locations for HZ since early diagnosis and treatment are critical in the attempt to optimize pain approach during the acute phase and to prevent its chronicity. In our case, the anatomic HZ manifestation in an unusual area was critical for the late diagnosis, which has prevented the treatment with antiviral drugs in the acute phase, which accelerates skin rash healing, decrease pain intensity and the incidence of PHN. The face and chest dermatomes are generally affected by HZ infection, but for the prevention of complications the other rare anatomic sites may be observed for in time detection of illness and to provide early treatment.

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