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CASE REPORT

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The neuropathic itch: Don't scratch your head too hard!

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Abstract

Postherpetic complications can sometimes result in significant debility. A multidisciplinary approach is crucial in deciding the appropriate treatment strategy in these patients.

KEYWORDS

itch, postherpetic, sequela

1 | INTRODUCTION

Postherpetic neuralgia (PHN), defined as the persistence of neuropathic pain beyond 3 months of the initial shingles episode, is a common sequel of herpes zoster infection. Postherpetic itch (PHI) is not systematically studied but appears to be equally common sequelae. In a study by Oaklander et al,[1] of 113 adults with recent shingles 17% reported postherpetic itch. Both PHN and PHI disappear over a few weeks to months and usually respond to symptomatic management. The itch can be of varying intensity. There are only a few cases, including a classical case report by Oaklander in 2002, where the itching sensation is very intense and the patient scratched the affected area repeatedly producing self-induced injury producing local ulcer that reached the bone.[2] We are reporting one such case of severe postherpetic itching resulting in a large scalp defect, due to its rarity, and we will discuss the treatment challenges involved.

2 | CASE REPORT

A 47-year-old male patient was present with prior history of gout, pancreatitis, coronary artery disease, ischemic cardiomyopathy, prostatic cancer in remission, and multiple myeloma, primary amyloidosis for which he was receiving treatment with bortezomib, cyclophosphamide, and dexamethasone. He presented with herpes zoster ophthalmicus rash involving the left forehead, in the area of the ophthalmic nerve distribution, and was treated with oral valacyclovir for 4 weeks. He returned the clinic 2 weeks after completion of his treatment with a large, deep, crater-like ulcer over left side forehead and scalp (Figure 1). On further questioning, the patient gave a history of compulsive scratching in the affected areas due to constantly severe, relentless itching, particularly at night. He noticed a mild oozing and blood staining of his pillow for 1 month but did not seek any medical attention. He denied any specific visual or hearing difficulties. Ophthalmic nerve and systemic examination were unremarkable. Patient had poor health literacy, though he overall appeared to have normal psychological status.

The ulcer was situated on the frontal area of the scalp, on left side, measuring ~15 cm × 10 cm. The depth varied from a few mm to about 1 cm with exposure of the underneath skull bone at its deepest portion. There was minimal whitish purulent discharge. CT scan confirmed the ulcer to reach up to the outer layer of skull bone, but the bone was intact and healthy (Figure 2). The biochemical parameters were within normal limits. He was admitted to the hospital for wound care and intravenous antibiotics. Blood cultures were persistently positive for methicillin-resistant *Staphylococcus aureus*. He was managed with intravenous vancomycin, gabapentin, wound debridement, and scalp flap rotation surgery to cover the large scalp defect. We started local calamine and oral

FIGURE 1 A large ulcer in the scalp as a result of incessant scratching from postherpetic itch in a dermatomal distribution. Also note, ulceration involves the upper eyelid

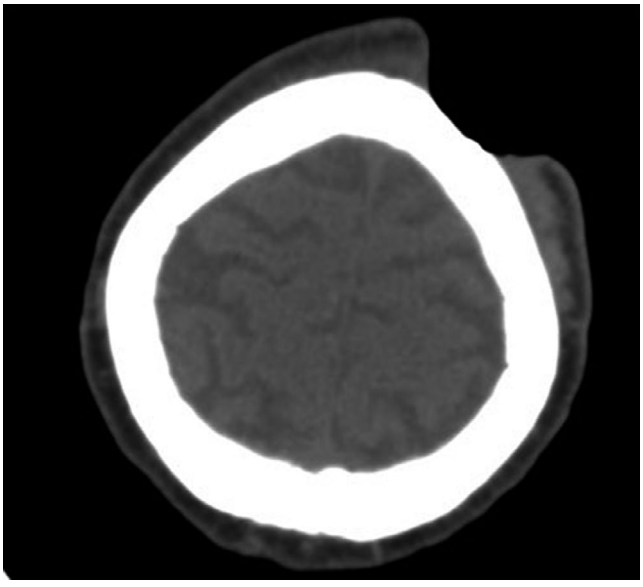

FIGURE 2 CT scan showing a large defect in the scalp but not involving the bone

gabapentin at a lower dose and titrated the dose to 1 g a day, which was effective.

3 | DISCUSSION

Postherpetic neuralgia is the persistence of neuropathic pain beyond 3 months after the initial shingles episode, which can occur in about 10%-15% cases of unvaccinated individuals. Postherpetic itch (PHI) is not uncommon sequel of herpes zoster infection that can occur in about 17% of patients after an infection with shingles.[1] The prevalence is greater when the lesions are in face compared with other areas of the body. Both PHN and PHI may occur together or alone with varying degrees of severity.[3] In another study of 600 patients, PHI alone or along with PHN was noted in 50% cases of either sex and higher age is not associated with more frequent occurrence unlike PHN.[1] In a clinical study of 100 patients with PHN, Mittal et al reported PHP in 53% patients of whom 16.94% had severe pruritus. These authors also observed that those with facial HZ had more severe itching (71.4%).[4] The mechanism for PHN and PHI is poorly understood.[5] It is proposed that analogous to PHN, PHI can be due to injury to neurons that normally mediate itch sensations. Oaklander et al have conducted sensory testing and skin biopsies in the itchy and normal skin in a case of intractable itch after herpes zoster infection and proposed that electrical hyperactivity of the hypo-afferented central itch-specific neurons, selective preservation of peripheral itch fibers from neighboring unaffected dermatomes, and/or imbalance between excitation and inhibition of second-order sensory neurons are the possible mechanisms for the neuropathic itch.[2]

The above presentation is akin to trigeminal trophic syndrome that results from trigeminal nerve affection due to herpes zoster, stoke, trauma, etc In this condition, there is paresthesia that compels the patients to reflexively scratch the affected area and self-induced ulceration. Several such cases have been reported in the past including a recent case reports by Niharika et al and Bradburn et al. Most of them present with nonhealing ulcers confined to the area of face and scalp innervated by trigeminal nerve and give a prior history of HZ infection in the same dermatome.[6,7]

There is no proven specific treatment for PHI, and it may be more difficult than management of PHN, often calls for an individualized approach.[5] Multiple therapies had been tried with variable success for PHI. Capsaicin, topical anesthetics blockade, botulin, mu-opioid receptor blockade, antihistamines,

and NSAIDs are generally tried. Opiates that are generally beneficial for PHN may not be helpful for PHI and may be counterproductive. Gabapentin was also reported to give good relief in some cases.[8] Recently, a case was reported that was poorly responding to usual drugs but addition of topical amitriptyline/0.5% ketamine gel gave good symptomatic relief.[9] Novel strategies such as local sympathetic bloc, cognitive manipulation, perception alteration, mirror scratching, and pulsed radiofrequency have shown promising results in some patients.[3,10-12] Elkersh described a case where high epidural infusion of bupivacaine and clonidine effectively controlled in an intractable postherpetic itch (associated with pain).[13]

In a 10-year-old child, the postherpetic itching was refractory to all conventional therapies. Peterson et al had given serial stellate ganglion blockade with bupivacaine, which provided significant improvement that was long-lasting. The authors felt its benefit is comparable with radiofrequency or chemical neurolysis of sympathetic ganglion.[14] In another recent study, Shimada et al[15] reported successful use of pregabalin 25 mg daily with prompt relief from the severe itching that was not responding to antihistamines. Ishikawa et al[16] studied PHI in acute, subacute, and chronic stages using Pain Detect Questionnaire and an itch-intensity score and tried to correlate with neuropathic pain and found that these two sequelae have different mechanisms, needing different therapeutic approaches.

4 | CONCLUSION

Postherpetic itch, though not uncommon, is not well described in literature. Though in most cases PHI is short-lived responding to symptomatic medications, an occasional itch may be too severe leading the patient to scratch the area impulsively and repetitively causing deep ulceration into the tissues beneath. Early symptom control may be attempted with varied success.

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CONFLICT OF INTEREST

None declared.

AUTHOR CONTRIBUTION

SP and JBI: prepared the manuscript. GV: supervised, reviewed, and edited the manuscript.

DATA AVAILABILITY STATEMENT

Data sharing not applicable—no new data generated.

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