Postherpetic pruritus in a child with retinoblastoma

Sinem Akgül[1], Serhan Küpeli[2], Bilgehan Yalçın[2], H. Ahmet Demir[2]
Münevver Büyükpamukçu[2]

Departments of [1]Pediatrics, Faculty of Medicine and [2]Pediatric Oncology, Institute of Oncology, Hacettepe University, Ankara, Turkey

SUMMARY: Akgül S, Küpeli S, Yalçın B, Demir HA, Büyükpamukçu M. Postherpetic pruritus in a child with retinoblastoma. Turk J Pediatr 2009; 51: 86-88.

Herpes zoster is a painful neurocutaneous disease caused by the reactivation of the varicella zoster virus, and it can develop any time after a primary infection, which usually occurs during childhood. A variety of immunocompromised patient populations are known to be at increased risk for herpes zoster. Postherpetic pruritus is a serious complication, which may last after the infection, and has the potential to cause injury and disability. The medical literature on postherpetic pruritus is very limited. This is a case report of a six-year-old child who developed postherpetic pruritus lasting three months, which responded to topical urea treatment.

Key words: postherpetic pruritus, retinoblastoma, topical urea.

Herpes zoster is a painful neurocutaneous disease caused by the reactivation of the varicella zoster virus, and it can develop any time after a primary infection[1,2]. A variety of immunocompromised patient populations are known to be at increased risk for herpes zoster[3,4]. Common complications of herpes zoster are secondary bacterial infection, depigmentation and scarring, but the best-known and most studied complication is postherpetic neuralgia (PHN)[1,2]. However, along with PHN, patients with herpes zoster may develop a neuropathic itch that may or may not accompany pain and can be seen preherpetic, herpetic or even postherpetic. There are some reports of severe disabling postherpetic pruritus (PHP), which may continue long after the herpes zoster attack[5-8]. The medical literature on PHP is very limited. We thus present a child with PHP lasting three months, which responded to topical urea treatment.

Case Report

A six-year-old girl was first seen in our department in June 2005 with a complaint of leukocoria in her right eye. With a clinical and radiological diagnosis of retinoblastoma, the stage according to Reese-Ellsworth was group V. The patient was given eight courses of chemotherapy consisting of cisplatin, etoposide, vincristine and cyclophosphamide. Three months after the cessation of chemotherapy, the patient experienced recurrent disease in the right eye and an orbital exenteration was performed. Histopathological examination revealed retinoblastoma with choroidal and optic nerve invasion and positive surgical margins. Examination of cerebrospinal fluid was positive for blasts, and magnetic resonance imaging showed extensive cranial and spinal seeding. The patient was then started on a chemotherapy protocol consisting of vincristine, cyclophosphamide, doxorubicin and DTIC. Cranial (3960 cGy) and spinal (3600 cGy) external radiotherapy was delivered. Eight days after the completion of radiotherapy, in July 2006, she was admitted to the hospital for neutropenic fever, pain and an eruption of clustered red papulovesicles around her right ankle located to one dermatome. She also had a history of childhood chickenpox, and thus was diagnosed with herpes zoster. She was treated with intravenous acyclovir for seven days, but four days later the papulovesicles appeared again; she was treated with acyclovir intravenously for another seven days and for another 10 days peroral (p.o.) after discharge from the hospital.

The patient was seen 10 days after being discharged (30 days after the eruption) and was found to have disseminated pruritus. Hydroxyzine HCl was administered for five days (p.o.) but her itching continued. Clemastine hydrogen fumarate was added to her treatment, but again the itching continued. When admitted to the hospital again in September 2006 for neutropenic fever, a topical cream containing 10% urea was added to her treatment. The patient was prescribed to use the emulsion all over her body once a day. Two weeks later, the parents and the patient stated that after one week of topical treatment with urea, pruritus was significantly relieved and by the end of the second week she had stopped using both antihistamines.

The PHP lasted for three months in this patient. Despite systemic chemotherapy, the patient died at the end of September 2006 because of progressive and resistant retinoblastoma. Thus, it was not possible to follow our results to see if the pruritus would have returned after stopping treatment.

Discussion

The most common presentation of herpes zoster is pain of variable severity. Together with localized pain, many other symptoms can be seen, such as localized itching, malaise, hyperesthesia, headache, tenderness, low-grade fever, and lymphadenopathy[1].

Both pain and pruritus are activated by superficial C fibers, and signals are received by specialized nerve endings localized close to the dermo-epidermal junction[7]. Herpes zoster leads to damage of the lower and middle dermal nerve fibers and after this neural damage has occurred, this may lead to chronic pruritus in some patients[6]. There must be other underlying factors to trigger the itching process; in our patient, this might have been due to the chemotherapy and radiotherapy given during treatment. Radiation therapy, extensive spinal involvement and chemotherapy might have aggravated the pruritus in this patient.

Chronic pruritus may cause significant disability and suffering and when compared to neuropathic pain, as seen in some cases, neuropathic itch can be more difficult to treat[5-8]. The common choice of drug for itching is antihistamines, but neuropathic itch does not usually respond to antihistamines, nor to other antipruritic medications[7,8]. The treatment modalities for treating PHN compared to PHP are quite wide[2]. However, when these drugs were tried on patients with PHP, the same response was not gained. Oaklander et al.[6] reported a case in whom the itch could not be relieved even after many different treatments including serotonin-specific re-uptake inhibitors as well as other medications (e.g. gabapentin, diphenhydramine, phenytoin and nortriptyline).

Although there are a limited number of studies, neuropathic itch is an important complication of herpes zoster. In one study by Özdemir et al.[7], PHP was found in 4% of all herpes zoster patients. Pruritus may last for a long time after the infection and has the potential to cause injury and disability[7,8].

Reports of research and investigation of the causes, prevalence, risk factors and especially the treatment of neuropathic itch are very few[6-7]. We found no studies on the effects of urea on postherpetic itching in our literature search. Topical urea or carbamine penetrates and rehydrates the stratum corneum and its antipruritic activity is based on its local anesthetic effects. Urea has been shown to be effective in eczematous skin, atopic dermatitis, ichthyosis, contact eczema, psoriasis and pruritus[9-11].

Postherpetic pruritus is a serious complication that may last after the infection and has the potential to cause injury and disability. Why it does not occur in all patients remains unknown. Herpes zoster, when seen in a child, is usually accompanied with a serious underlying condition, such as immunodeficiency, or oncological or hematological malignancy[12]. Thus, these patients are already fighting with their primary illness and the complications of therapies given, and the aim should be to try and minimize any extra complications like PHP. Pruritus is a complication that can be very distressing for both the child and parents. Thus, more studies are needed to increase treatment choices in refractory cases.

REFERENCES

1. Leung AK, Robson WL, Leong AG. Herpes zoster in childhood. Pediatr Health Care 2006; 20: 300-303.
2. Niv D, Maltsman-Tseikhin A, Lang E. Postherpetic neuralgia: what do we know and where are we heading? A focused review. Pain Physician 2004; 7: 239-247.
3. Peter K, Wung MD, Janet T, et al. Herpes zoster in immunocompromised patients: incidence, timing, and risk factors. Am J Med 2005; 118: 1416.

4. Sara LT, Hall AJ. What does epidemiology tell us about risk factors for herpes zoster? Lancet Infect Dis 2004; 4: 26-33.
5. Oaklander AL, Bowsher D, Galer B, et al. Herpes zoster itch: preliminary epidemiologic data. J Pain 2003; 4: 338-343.
6. Oaklander AL, Cohen SP, Raju SV. Intractable postherpetic itch and cutaneous deafferentation after facial shingles. J Pain 2002; 96: 9-12.
7. Özdemir M, Tüzün Y. Post herpetic pruritus. Int J Dermatol 2004; 43: 779.
8. Liddell K. Post-herpetic pruritus. Br Med J 1974; 4: 165.
9. Kuster W, Bohnsack K, Rippke F, et al. Efficacy of urea therapy in children with ichthyosis. A multicenter randomized, placebo controlled, double blind semilateral study. Dermatology 1998; 196: 217-222.
10. Freitag G, Hoppner T. Results of postmarketing drug monitoring survey with a polidocanol-urea preparation for dry itching skin. Cur Med Res Opin 1997; 13: 529-537.
11. Loden M, Anderson AC, Anderson C, et al. A double-blind study comparing the effect of glycerin and urea on dry, eczematous skin in atopic patients. Acta Derm Venereol 2002; 82: 45-47.
12. Brodell RT, Zurakowski JE. Herpes zoster can occur in healthy children too. Postgrad Med 2004; 115: 63-65.