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CASE REPORT

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The Uncommon Localization of Herpes Zoster

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ABSTRACT

Introduction: Herpes zoster is an acute, cutaneous viral infection caused by the reactivation of varicella-zoster virus (VZV) that is the cause of varicella. It is an acute neurological disease which can often lead to serious postherpetic neuralgia (PHN). Different nerves can be included with the skin rash in the area of its enervation especially cranial nerves (CV) and intercostal nerves. **Case report:** In this report we present a patient with herpes zoster which involved ulnar nerve with skin rash in the region of ulnar innervations in women with no disease previously diagnosed. The failure of her immune system may be explained by great emotional stress and overwork she had been exposed to with neglecting proper nutrition in that period. **Conclusion:** Herpes zoster may involve any nerve with characteristic skin rash in the area of its innervations, and failure in immune system which leads reactivation of VZV may be caused by other factors besides the underlying illness.

Key words: herpes zoster, ulnar localization.

1. INTRODUCTION

Herpes zoster is an acute, cutaneous viral infection caused by the reactivation of varicella-zoster virus (VZV) that is the cause of varicella (1). Reactivation of varicella-zoster virus (VZV) that has remained dormant within dorsal root ganglia, often for decades after the patient's initial exposure to the virus in the form of varicella (chickenpox), results in herpes zoster (shingles) (2). It is usually a self-limited dermatomal rash with pain; but can be far more serious and lead to postherpetic neuralgia (PHN) (3). Those with no previous exposure to VZV develop the clinical syndrome of varicella; those with circulating varicella antibodies develop a localized recrudescence, zoster. Zoster probably results most often from a failure of the immune system to contain latent VZV replication (4, 5). Whether other factors, such as radiation, physical trauma, certain medications, other infections, and stress can trigger zoster, is not fully clear (5).

The incidence of zoster is inversely correlated with the host's immune response (4, 5, 6). However, many patients with zoster have normal immunity. Zoster occurs when VZV antibody titer and cellular immunity drop to levels no effective in preventing viral invasion (6, 7). VZV infection is an acute neurologic disease. When VZV infection resolves, many individuals continue to suffer pain-a condition known as postherpetic neuralgia (PHN) (7).

1.1. Signs and symptoms

The clinical manifestations of herpes zoster can be divided into the 3 phases: **a)** Pre-eruptive phase (preherpetic neuralgia) which is characterized by sensory phenomena along 1 or more skin dermatomes, lasting 1-10 days (average 48 hours), phenomena usually are noted as pain or, less commonly, itching or paresthesia. Pain may simulate headache, iritis, pleurisy, brachial neuritis, cardiac pain, appendicitis or other intra-abdominal disease, or sciatica that can result in incorrect tentative diagnoses. The skin rash helps clarify the diagnosis. Other symptoms may be present such as malaise, myalgia, headache, photophobia, and, uncommonly fever (1-7).

b) Acute eruptive phase is marked by patchy erythema, occasionally accompanied by indurations, in the dermatomal area, regional lymphadenopathy; at this stage or subsequently, grouped herpetiform vesicles developing on the erythematous

base, cutaneous findings typically appear unilaterally, stopping abruptly at the midline of the involved dermatome; vesicles initially are clear but eventually cloud, rupture, crust, and involute. There is slow resolution of the remaining erythematous plaques, usually without visible squeals. Scarring can occur if deeper epidermal and dermal layers have been compromised by excoriation or secondary infection. Almost all adults experience pain. Pain may remain the same as in prodrome or may change in character and intensity; patients describe it as burning, throbbing, or stabbing; it may be severe, mild, constant, rare, or felt as another sensation such as itching. Some patients experience pain without a vesicular eruption (i.e. zoster sine herpete). Symptoms commonly resolve over 10-15 days. Complete healing of lesions may require up to a month or more (1-7).

c) Chronic phase (PHN) is characterized by: persistent or recurring pain lasting 30 or more days after the acute infection (9-45% of cases). Pain usually is confined to the area of original dermatomal involvement. The pain can be severe and incapacitating; can persist for weeks, months, or years which is especially common in the elderly (>60 years). The reason for development of PHN is not fully understood. PHN is observed more frequently after cases of herpes zoster ophthalmicus and in upper-body dermatomal involvement. Less common postherpetic squeals include hyperesthesia or hypoesthesia or anesthesia (1-7).

1.2. Forms of herpes zoster include the:

Herpes zoster oftalmicus, Herpes zoster of maxillary branch of cranial nerve (CN) V, herpes zoster of mandibular branch of CN V, herpes zoster oticus (Ramsay Hunt syndrome), glossopharyngeal and vagal herpes zoster, herpes occipitocollaris (vertebral nerves C2 and C3 involvement), herpes zoster encephalomyelitis, disseminated herpes zoster, unilateral herpes zoster involving multiple dermatomes, recurrent herpes zoster, herpes zoster involving urinary bladder, bronchi, pleural spaces, or gastrointestinal tract, herpes zoster with motor complications (1-7).

1.3. Diagnosis

Diagnosis of herpes zoster is based primarily on the history and physical findings-specifically, the characteristic location and appearance of the skin eruption in association with localized pain. Laboratory studies for VZV include the: direct fluorescent antibody (DFA) testing of vesicular fluid or a corneal lesion, polymerase chain reaction (PCR) testing of vesicular fluid, a corneal lesion, or blood, Tzanck smear of vesicular fluid. In most patients, confirming the diagnosis via laboratory testing usually has no utility. In selected patients, the presentation of herpes zoster can be atypical and may require additional testing (8-10). Varicella-zoster virus (VZV) can be cultured; its growth rate is usually too slow to be useful to diagnosis (9). Herpes zoster is seen approximately 7 times more frequently in patients with HIV infection so HIV test should be done (4). Skin biopsy is seldom necessary.

1.4. Management

The goals of therapy for herpes zoster are: to shorten the clinical course, provide analgesia, prevent complications and decrease the incidence of PHN (11-15).

Ideally, antiviral therapy should be initiated within 72 hours of symptom onset but should be considered regardless of the time of presentation (12). The most used is oral Acyclovir and its derivates. For immunocompetent patients, a 7 to 10-day course of acyclovir is appropriate; longer courses may be needed in immunocompromised patients who sometimes need intravenous therapy (14). Once PHN has developed, various treatments are available: nonsteroidal anti-inflammatory drugs (NSAIDs), neuroactive agents (e.g. antidepressives- TCAs), anticonvulsant agents (e.g. gabapentin, pregabalin), narcotic and nonnarcotic analgesics–systemic and topical (14, 15). Steroid treatment for herpes zoster is controversial. Steroids should not be given without antiviral therapy (11).

2. CASE REPORT

A middle-aged female clinical doctor with no previous data of serious ill conditions had got over the chicken pox in early childhood (when she was five years old). She had no feeling of any health disorder but these days in the beginning of November of 2015 year she had too much work in her workplace in the hospital: in a short time several nights on duty with big number of seriously ill patients. In her private life she had a very big emotional stress–some financial problems of buying new apartment with neglecting proper nutrition in that period.

Around 10th of November she began to feel fatigue, anorexia, general weakness, irritability, mild depression, which she explained that she was overworked. On the 12th of November when she went to sleep she felt the discomfort and mild pain beside the spine in the level of right scapula. She had difficulties in falling asleep with a number of awakenings during the night with feeling of discomfort and mild pain in the right shoulder, upper arm and right elbow. In the morning 13th of November she noticed the red skin indurated papules the size of a few millimeters to half a centimeter in diameter in the palmar side in the root of ring finger. During the day a few indurated papules appeared in the border between the palmary and dorsal side of the right hand in the area of innervations of the ulnar nerve. On the 14th of November a couple of the same indurations appeared in the palmary side of right hand in the root of forearm, and in the region of pinkie finger. In the next few days (4 to 5 days) skin of the ulnary side of the palm of the right hand became erythematous and grouped herpetiform vesicles developed hour by hour, day after day and almost complete clinical picture was developed on the 17th of November. The vesicles were cloudy, some of them with red border, some of them merged in blisters more than 2 centimeters in diameter. That day she went to doctor dermatologist who characterized the appearance as hemorrhagic form of herpes zoster and therapy was prescribed: Acyclovir tbl 5x 800mg two days and 5x600 mg 4 days four days, broad–spectrum antibiotic, vitamins B12 and B1, B6, analgesics and Acyclovir cream locally several times on day. The entire time patient felt fatigue, general weakness, discomfort and pain in most expressed in elbow and in ulnar side of forearm, ulna-

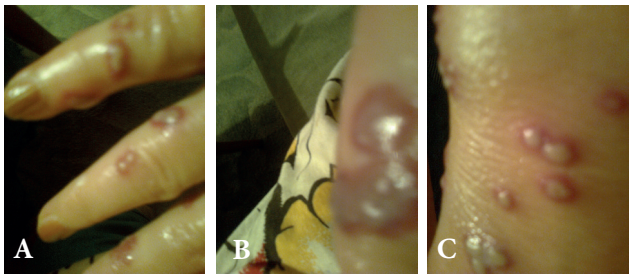

Figure 1. a) Vesicles on the three lateral fingers of right hand. b) Confluented vesicles on the lateral side of right hand. c) Vesicles on the region of ulnaro-carpal joint of right hand

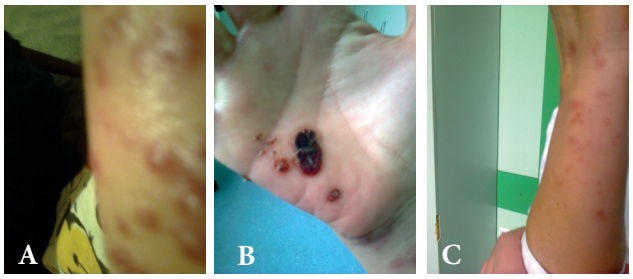

Figure 2. Vesicles on the ulnar side of right forearm. b) Crusta on the ulnar side of right palm. c) Scars on the ulnar side of right forearm

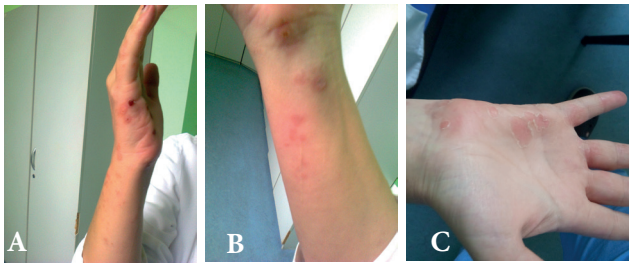

Figure 3. a) Scars on the ulnar side of right hand. b) Scars on the ulnar side of right forearm. c) Skin laesions of right hand palm after 45 days of first eruption of herpetic vesicles

ro-carpal joint and in the palmary and dorsal side of the right hand all in projection of the branching of ulnar nerve. The vesicles were staggered and grouped also in the projection of ulnar nerve innervations. The pain may be described as burning but no narcotics were needed. It might be reduced by no steroidal anti-inflammatory drugs (ibuprofen) 3 to 4 tablets per day. During the first three days of therapy some new vesicles erupted. About 10 days after first eruption some vesicles started converting into crusts with no new vesicle eruption. After vesicular involution, there was slow resolution of the remaining erythematous plaques, but with visible squeals. On the control examination (10 day after first examination) the dermatologist characterized illness as gangrenous form of herpes zoster with recommendation to patient to examine her immune system and to use panthenol ointment–for epithelialization and skin regeneration long time and eozine (antiseptics) locally for five to six days. She has done blood testing (ESR-erythrocyte sedimentation rate, FBC–whole blood count, liver and kidney laboratory tests, rheumatic tests, OraQUICK HIV test, urine examinations, chest x- ray, ultrasound examination of abdomen and pelvis. All examinations were in normal rate. From day to day she felt better and better but 30 days after the begging of illness she still have crusts in the places of vesicles, the largest one on the ulnar side of the palm of right hand with mild pain in involved area. Two months after first vesicular eruption there are sequels in the form of the pink stains in the places of previous vesicles with mild hyperesthesia in involved area and very mild occasional pain in there especially in the evening.

The appearance of skin manifestations in first seven days is presented in the figures 1, 2, 3.

3. DISCUSSION

Herpes zoster is an acute, cutaneous viral infection caused by the reactivation of varicella-zoster virus (VZV) that is the cause of varicella. VZV infection is an acute neurologic disease. It often leads to postherpetic neuralgia (PHN) when many individuals especially older (>60 years) continue to suffer a serious pain. Zoster probably results from a failure of the immune system to contain latent VZV replication. Whether other factors can trigger zoster has not been determined with certainty although many patients with zoster apparently have normal immunity.

In this study we present a case of female doctor who prior this illness had had no problems with her immune system but it is obviously that in this period it came to intensive decline of the immune system that resulted in this severe form of the disease. Only explanation for this decline of her immune system is her overwork–over strain, great emotional stress she was exposed to with sleep disorders because of stress and eating disorders from the same reason.

Herpes zoster is acute neurological disease which can include different nerves with appropriate skin manifestations in their areas of innervations. The most common involved nerves are cranial nerves (first of all V (fifth), e.g. n.trigeminus with its branches–first of all ophtalmucus), intercostal nerves. In this report we show the uncommon localization of herpes zoster–ulnar side of right hand and forearm in the anatomic region of innervations corresponding to ulnar nerve. Although patients usually suffer from serious pain, this patient did not have so strong pain, she could relieve of pain by nonsteroidal anti-inflammatory drugs and she has not developed postherpetic neuralgia. Also, the failure of her immune system was not the result of underlying disease which compromised immune system but a result of other reasons.

4. CONCLUSION

Herpes zoster may involve any nerve in human body with characteristic skin rash in the area of its innervations. It does not have to be a consequence of serious underlying diseases; the failure of immune system may be the result of overwork, emotional stress or inappropriate nutrition.

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