Case Report: 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 re-crudeescence, 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 (pre-herpetic 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 derma-
tome; vesicles initially are clear but eventually cloud, rup-
ture, crust, and involute. There is slow resolution of the
remaining erythematous plaques, usually without visible
squeals. Scarring can occur if deeper epidermal and der-
mal layers have been compromised by excoriation or sec-
ondary 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 el-
derly (>60 years). The reason for development of PHN is
not fully understood. PHN is observed more frequent-
ly after cases of herpes zoster ophthalmicus and in up-
per-body dermatomal involvement. Less common pos-
therpetic squeals include hyperesthesia or hypoesthesia
or anesthesiia (1-7).

1.2. Forms of herpes zoster include the:
Herpes zoster ofthalmicus, Herpes zoster of maxillary
branch of cranial nerve (CN) V, herpes zoster of mandibu-\nlar branch of CN V, herpes zoster oticus (Ramsay Hunt syn-
drome), glossopharyngeal and vaginal herpes zoster, herpes
occipitotemporalis (vertebral nerves C2 and C3 involvement),
herpes zoster encephalomyelitis, disseminated herpes zos-
ter, 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 charac-
teristic location and appearance of the skin eruption in as-
sociation with localized pain. Laboratory studies for VZV
include the: direct fluorescent antibody (DFA) testing of
vesicular fluid or a corneal lesion, polymerase chain re-
action (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 fre-
quently 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 complica-
tions and decrease the incidence of PHN (11-15).

Ideally, antiviral therapy should be initiated within 72
hours of symptom onset but should be considered re-
gardless 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 avail-
able: nonsteroidal anti-inflammatory drugs (NSAIDs),
nootropic agents (e.g. antidepressives- TCAs), anti-
convulsant agents (e.g. gabapentin, pregabalin), narcot-
ic 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 emotion-
al stress—some financial problems of buying new apart-
ment 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 dis-
comfort 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 No-
vember 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 ulnar side of the palm of the
right hand became erythematous and grouped herpeti-
form 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 appear-
ance as hemorrhagic form of herpes zoster and thera-
py 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-
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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 sequel 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 ophthal-macus), 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 reliefe 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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