Case Report

A Case of Diagnostic Dilemma

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Abstract

Immune suppressed individuals are at increased risk of acquiring herpes zoster and zoster related complications. Thus, it is important to treat them immediately with antiviral drugs. However, treatment in most immune-suppressed individuals becomes a challenge, due to atypical clinical symptoms. We report a patient, in whom, diagnosis of zoster was missed due to ambiguous clinical history.

ABBREVIATIONS

HZ: Herpes Zoster; VZV: Varicella-Zoster Virus; PCR: Polymerase Chain Reaction

INTRODUCTION

Following primary infection with Varicella-Zoster Virus (VZV), the virus remains latent in spinal and cranial sensory ganglia. Reactivation of VZV results in Herpes Zoster (HZ) or “shingles”. Protection against reactivation of VZV depends on the cell-mediated immunity acquired after primary infection. However, elderly individuals and immune-suppressed patients are at increased risk of acquiring HZ. HZ is identified with its distinctive dermatomal presentation. Atypical presentation of zoster is common in immunocompromised individuals, when diagnosis and management becomes a challenge.

We report a patient, in whom the clinical symptoms were typical of HZ. Nevertheless, we had difficulties in managing this patient, due to a misleading clinical history.

CASE PRESENTATION

A 30-year-old female, presented with punched-out ulcers and crusty skin lesions on her right scapula, lateral aspect and beneath her right breast. It started as a “throbbing” pain for 4 days, on her right scapular region following yoga training. It was suspected as a muscle spasm by an orthopaedic surgeon. Hence, she was commenced on Diclofenac gel. Subsequently, she developed redness, irritation and small fluid-filled blisters on the areas where she applied the gel. She visited the emergency department in a tertiary hospital, where it was suspected as an irritant contact dermatitis to Diclofenac gel. She was advised to apply calamine lotion and a steroid ointment. After a week, she visited our clinic with punched-out ulcers and crusty skin lesions on the above-mentioned areas. In year 2010, she had a renal transplant. Since then, she has been on low-dose prednisolone.

Clinical examination, revealed grouped crusty skin lesions and multiple small punched-out ulcers on the right shoulder blade (lower aspect), on the lateral aspect and beneath her right breast. The lesions were non-tender.

DISCUSSION

In HZ, 70-80% of individuals will present with dermatomal pain in the prodromal stage, which typically lasts for 2-3 days [1]. Usually, the HZ rash appears on the area of prodromal pain after 2-3 days. However, prolonged pain (lasting > 7 days) in the prodromal stage is not uncommon [1]. Prolonged pain without skin lesions, around thoracic region is often diagnosed as pleurisy, myocardial infarction (MI), gastritis or cholecystitis [1]. HZ skin lesions starts as erythematous maculopapular rash which further develops to form fluid-filled blisters or vesicles. The HZ skin lesions share common clinical features with zosteriform herpes simplex, contact dermatitis, eczema and blistering skin disorders [1,2].

Individuals at increased risk of visceral and cutaneous dissemination with zoster, include patients with malignancy, HIV, organ transplant recipients and patients receiving systemic steroids [1]. Hence, it is crucial to treat HZ early in them. Ideally, antiviral therapy is recommended within 48-72 hours of symptoms to prevent complications [1,3]. However, treating HZ in immune-suppressed individuals is a challenge, as atypical presentation of zoster is not uncommon, which often results in delayed treatment. In such patients, Tzank smear from vesicles, skin biopsy and direct immunofluorescence (most sensitive) are valuable to identify HZ [1-3]. Intravenous acyclovir remains the treatment of choice for severely immunocompromised patients, at a dose of 10 mg/kg every 8 hours [1,3]. Oral antivirals can be commenced once the infection is under control. For less severe immune-suppressed individuals, oral antivirals such as acyclovir (800 mg 4 times daily), valacyclovir (1000 mg 3 times daily) or famciclovir (500mg 3times daily) are sufficient with clinical observation [1,3]. The effectiveness of HZ vaccine in elderly and immune-suppressed adults are still under study [4].

In a trial with 38546 patients (aged 60years and older), the HZ vaccine demonstrated reduction in shingles by 51% and post herpetic neuralgia by 61%. The zoster vaccine reduced morbidity from HZ and post herpetic neuralgia. It is now approved for

immunocompromised patients and elderly individuals in Canada [5,6].

In our patient, the pain, which lasted for 3 days, was diagnosed as a muscle spasm. Subsequently, skin lesions after application of diclofenac gel, was considered as irritant contact dermatitis. When she presented to us, the lesions were in crusting stage, thus making it difficult to arrive at a definitive diagnosis. Considering her immunocompromised status and dermatomal pattern of skin lesions, we concluded it as HZ. It was uncertain if serology or other investigations would help with the diagnosis, in the crusting stage. It might be challenging to interpret the serology results in immune-suppressed individuals. Similarly, it was uncertain to us, whether to commence her on antivirals, to prevent recurrence and visceral infection. It is reported that when the vesicles lesions are present, antivirals commenced after 72 hours are still effective [7]. In our patient, in addition to crusted skin lesions there were few punched-out ulcers. Hence, we commenced her on acyclovir 800 mg five times daily for 7 days.

This report aims to generate awareness about appropriate interpretation of HZ lesions by physicians, to avoid diagnostic and a therapeutic dilemma. The prodromal stage in zoster can mimic other problems such as MI, duodenal ulcer or muscle spasm. But, zoster should be a prime differential when the skin lesions appear in a dermatomal distribution, especially in immunocompromised patients. In atypical presentation, direct immunofluorescence should be considered as it is most sensitive to detect herpes zoster. Recent studies have demonstrated that combining serology test and polymerase chain reaction (PCR) to identify VZV DNA in serves as a tool to identify zoster in prodromal stage [8]. However, availability of PCR in every setting is questionable.

In spite of major advances in treatment for HZ, we physicians frequently face uncertainties, in managing HZ in immune-suppressed individuals. Treatment protocol for “missed” HZ in immune-suppressed individuals remains a “grey area”. More studies are required to understand the efficacy of antivirals after 72 hours, in such patients. Further research is required to demonstrate the effectiveness of HZ vaccine in pre and post organ- transplant recipients. We recommend that ongoing research should enlighten on management protocol for “missed” HZ, especially in elderly (>60 years) and immunodeficient individuals.

REFERENCES