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Atypical Presentation of Herpes Zoster Infection Following Fludarabine Treatment for Chronic Lymphocytic Leukemia: A Case Report

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Herpes zoster (zona) is an infection with acute vesicular eruption due to the varicella zoster virus. A painful skin rash characterizes herpes zoster, with dermatomal distribution in a limited area on one side of the body. A 49-year-old Caucasian male with chronic lymphocytic leukemia presented with sudden onset of painful vesicles on the right abdomen. He was receiving fludarabine for the treatment of Chronic lymphocytic leukemia. The patient was neutropenic and diagnosed as zona zoster based on history and physical examination; acyclovir treatment was initiated. After 3 days of the treatment he developed florid disseminated erythematous vesicles over his entire body, including the face and scalp. Tzanck smear showed varicella zoster. Despite acyclovir treatment diffuse infiltration was observed in the lungs of the patient, with hyperthermia and dyspnea. Pneumonia was consisted with thoracic computed tomography. The patient's hyperthermia did not respond to teikoplanin, meropenem and intravenous immunoglobulin. He died.
Key Words: Herpes Zoster; Zona; Infection; Fludarabine; Chronic Lymphocytic Leukemia.

Kronik Lenfositik Lösemide Kullanılan Fludarabin Tedavisinden Sonra Gelişen Atipik Herpes Zoster (Zona) Enfeksiyonu: Olgu Sunumu

Herpes zoster (zona), varisella zoster virüsünün neden olduğu akut veziküler erüpsiyon ile seyreden bir infeksiyondur. Dermatomal dağılımla sınırlı, tek taraflı ve ağrılı döküntülerle karakterizedir. 49 yaşında, Kafkasyalı, erkek hastada kronik lenfositik lösemi nedeni ile fludarabin tedavisi alırken karının sağ tarafında ağrılı veziküller oluştu. Nötropenik olan hastaya anamnez ve izik muayene ile zona tanısı kondu ve asiklovir tedavisi başlandı. Tedavinin 3. gününde hastanın yüz ve kafa derisi dahil tüm vücüdunda yaygın eritematöz veziküller gelişti. Tzanck testi ile varisella zoster olduğu gösterildi. Asiklovir tedavisine rağmen hastanın akciğerinde diffüz infiltrasyon izlendi, hipertermi ve dispne meydana geldi. Toraks tomoğrafisi pnömoni ile uyumlu idi. Hastanın hipertermisi teikoplanin, meronepem ve intravenöz immünglobuline cevap vermedi. Hasta öldü.
Anahtar Kelimeler: Herpes Zoster; Zona; Infeksiyon; Fludarabin; Kronik Lenfositik Lösemi.

Introduction

Herpes zoster is an acute vesicular eruption due to the varicella zoster virus. It is the primary cause of latent infection in posterior ganglions and may lead to herpes zoster infection with reactivation in adults.[1]

Herpes zoster infection is generally unilateral; however, disseminated infection has also been reported in immunosuppressed patients after vaccination and fludarabine.[2,3] Herein, we present a patient with atypical herpes zoster and disseminated infection following fludarabine treatment for Chronic lymphocytic leukemia.

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Case

A 49-year-old Caucasian male with chronic lymphocytic leukemia presented with sudden onset of painful vesicles on the right abdomen. He was receiving fludarabine for the treatment of Chronic lymphocytic leukemia. The patient was neutropenic and diagnosed as zona zoster based on history and physical examination; acyclovir treatment was initiated. After 3 days of the treatment he developed florid disseminated erythematous vesicles over his entire body, including the face and scalp (Figures 1).

Tzanck smear showed multinuclear giant cells. (Figure 2). Herpes zoster vesicles erupted over the entire body during 3 days of acyclovir treatment. Despite acyclovir treatment diffuse infiltration was observed in the lungs of the patient, with hyperthermia and dyspnea (Figure

3). Pneumonia was observed with thoracic computed tomography. The patient's hyperthermia did not respond to teikoplanin, meropenem and intravenous immunoglobulin, dyspnea increased, and he died.

Figure 1. Disseminated papules and vesicles on abdomen and arm.

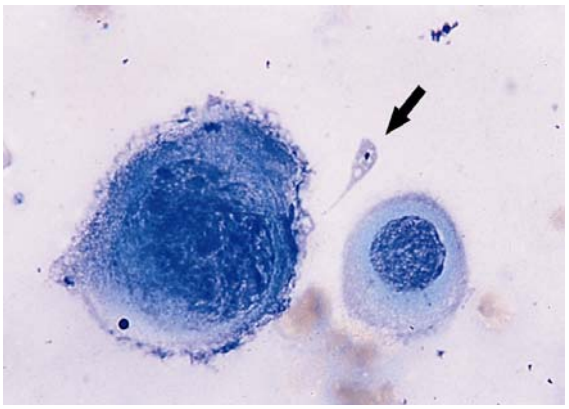

Figure 2. Multinuclear giant cells on tzanck smear.

Figure 3: Bilateral diffuse infiltrations on lungs.

Discussion

While varicella zoster usually involves only one dermatome in the bodies of immunocompromised patients, it may disseminate over the entire body. Fludarabine is a nucleoside analog used for the treatment of Chronic lymphocytic leukemia. Immunosuppression is known side effect of fludarabine treatment. Following fludarabine administration, immunosuppression along with prolonged and profound lymphopenia which predisposes patient's to opportunistic infections including varicella zoster reactivation has been reported.[3] CLL is characterized by immune system dysregulation.[4] Both quantitative and qualitative defects in immune effector cells result in abnormal cellular and humoral-mediated immune responses.[5]

T cell, natural killer cell, neutrophil functions, and the monocyte/macrophage lineage are impaired. As a result, hypogammaglobulinemia develops.

The presented case had Chronic lymphocytic leukemia. The patient presented with pain and sudden onset of vesicles on the right abdomen following fludarabine treatment. Tzanck smear showed varicella zoster. Although Tzanck test results can be positive in patients with herpes simplex, herpes zoster, and varicella infection, in the presented case dermatomal distribution of the eruption confirmed the diagnosis of herpes zoster. Herpes zoster was diagnosed based on clinical examination and Tzanck smear.

Despite acyclovir treatment, the patient developed lesions over his entire body and died. Disseminated herpes zoster can result as mortal in immunosuppressed patients and may not respond to acyclovir treatment. Monitoring for resistance to acyclovir, consideration of the use of antiviral drugs such as foscarnet, treating secondary bacterial infections, and early administration of IVIG can be life-saving measures.

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