

NOTES

Characteristics of radiological changes in lungs during varicella zoster viral infection

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ABSTRACT

The objective of this research was to analyse the varicella patients' data in order to determine the following: general frequency of pneumopathies and types of lung changes according to X-ray presentation and the changes on the computed tomography. It examined 101 patients with the clinical presentation of varicella and some of the X-ray entities of varicella pneumopathies. Radiological techniques included chest X-ray and CT scans. Familiarity with clinical, laboratory and radiological characteristics of the disease may be of utmost importance for early recognition.

Key words: varicella, radiological characteristics

INTRODUCTION

Varicella pneumopathies take a significant place among complications that arise in the course of varicella-zoster viral infection (1-4). After all, pulmonary complications in the course of varicella represent one of the most common causes of lethal outcome (5). However, of all varicella pneumopathies, the primary varicella pneumonia takes the most prominent place due to its significance and severity. It is a pneumonia caused by direct influence of the Varicella-Zoster virus (VZV) itself (6). It seems that lung affection by VZV occurs much more frequently than previously thought (haemotogenically nonet-heless), usually during the secondary viraemia

(7). Not unlike other viruses, direct influence of VZV instigates inflammatory process primarily in the lung interstitium (interstitial type of pneumonia) (8). On average, Varicella-Zoster virus pneumonia (VZVP) occurs once in 400 cases of varicella, with a mortality rate of 2.15 - 50%. The published incidence rates range from 5 - 50% (9). Primary varicella pneumonia radiologically presents in a manner similar to other atypical pneumonia where inflammatory process occurs primarily in the lung interstitium (inhomogeneous opacities with poor demarcation, accompanied with the presence of pulmonary markings - the so called "ground glass"). The changes can present as nodular or reticular opacities in both lungs, inhomogeneous opacities or diffuse alveolar infiltration (10). Sometimes, however, they can present in the form of disseminated bronchopneumonic foci (nodules). With the progression of the disease, nodules grow and merge together, producing extensive infiltrates, esp. in the vicinity of hilus and base of a lung (11). The chest CAT scan in varicella patients shows uneven ground-glass attenuations and confluent lesions (12).

The objective of our research was to determine the overall incidence of pneumopathy in varicella patients and their distribution by age and gender, as well as types of lung changes according to radiographic appearance and CAT scan findings. The paper will mainly appeal to the practicing physicians, and its results may lead physicians to consider even the gravest forms of the disease.

PATIENTS AND METHODS

In the retrospective-prospective research, the analysis included patients with clinical diagnosis of varicella and some of the radiographic entities found in varicella pneumopathies (increased pulmonary markings, localised bronchopneumonic infiltrate, diffuse bronchopneumonic infiltrates and atypical pneumonia), treated at the Infectious Diseases Clinic, Clinical Centre of Kragujevac, during the 2002-2006 period. Approval of the Ethics Committee of the Clinical Center of Kragujevac as well as a written consent from the patients were obtained for the research. All analysed patients were admitted during the rash stage of the disease. Varicella was diagnosed using the epidemiological

