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CASE REPORT – OPEN ACCESS

A Case Report of Varicella Pneumonia in an Immunocompetent Adult

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ABSTRACT

Background: Chickenpox is a mild, highly infectious viral disease seen in childhood. However, the course tends to be severe in adults and immunosuppressive individuals.

Case Report: A 40-year-old man with no known history of chronic disease presented to our hospital emergency department with widespread eruptions over the entire body and cough. Varicella pneumonia was diagnosed based on the patient being in contact with his children who had shortly previously contracted chickenpox, typical cutaneous lesions, and the clinical and thoracic computerized tomography findings. The patient was treated with acyclovir and antibiotics in terms of secondary bacterial infection. Complete healing was achieved after 7 days of treatment.

Conclusion: This case is presented to draw attention to pneumonia, a severe complication of chickenpox.

Keywords: Chickenpox, immunocompetent, pneumonia

INTRODUCTION

Chickenpox is a benign, viral infection transmitted through droplets or direct infection, caused by the varicella zoster virus (VZV), a DNA virus, and frequently seen in childhood. Following an incubation period, it progresses with fever and vesiculopustular eruptions on the body (1). About 90% of cases are seen before the age of 10. However, an increased incidence in adults has been observed in recent years. In contrast to childhood, the course tends to be severe in adults and immunosuppressed individuals (2). Chickenpox has a low mortality rate in immunocompetent patient. In contrast, it is life threatening in immunocompromised patients (3). The most common complication of chickenpox is secondary bacterial infection of cutaneous lesions. However, the most frequent complication in adults in particular is varicella pneumonia, involving a mortality rate of 10–30% (4). The incidence of varicella pneumonia is 25 times higher in healthy adults than in children (1). Varicella infection in an immunocompetent male patient is represented in this case report.

CASE REPORT

A 40-year-old man with no known history of chronic disease presented to our hospital emergency department with widespread eruptions over the entire body and cough. We learned from the patient's history that the fever had first begun 6 days previously, followed by eruptions over the entire body 2 days later. We also learned that antipyretics had been prescribed at the infectious diseases clinic of an external center to which he presented with these symptoms, and that two of his children had contracted chickenpox approximately 2 weeks previously. The patient presented to our hospital emergency department since the fever and eruptions failed to improve, and due to the onset of respiratory difficulty, cough and phlegm.

At physical examination, the patient's general condition was good, and he was conscious, oriented, and cooperative. Body temperature was 37.4°C, heart rate was 110/min and rhythmic, blood pressure was 123/69, respiratory rate was 18/min, and oxygen saturation was 94%. Diffuse maculopapular and papulopustular lesions were present on the patient's head, trunk, and extremities (Fig. 1). Diffused rhonchi were determined in the right lung.

At laboratory examinations, leukocyte count was 8400/mm^3, hemoglobin 14.4 g/dl, platelet count 163,000/mm^3, aspartate aminotransferase 51 U/L, alanine aminotransferase 112 U/L, gamma-glutamyl transferase 127 U/L, lactate dehydrogenase 348 U/L, total bilirubin 0.4 mg/dl, direct bilirubin 0.14 mg/dl, and C-reactive protein 4.14 mg/dl. At blood gas analysis, PCO_2 was 31.9 mmHg, PO_2 63.2 mmHg, HCO_3 25.1 mmol/lt, pH 7.47, and O_2 SAT 94%. Serological tests revealed negative VZV immunoglobulin (Ig)M

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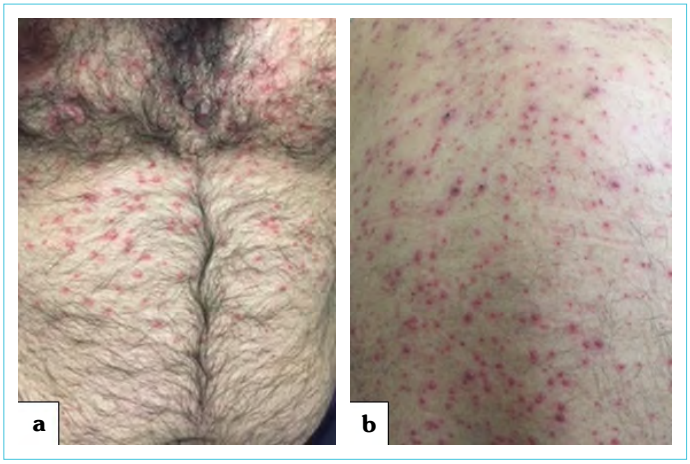

Figure 1. Our cases' multiple erythematous, maculopapular, and papulopustular lesions. (a) Trunk, (b) back region

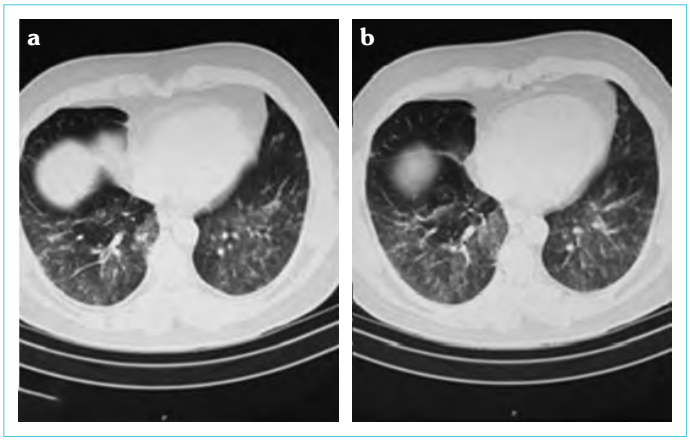

Figure 2. Pneumonic infiltration and ground-glass areas in the bilateral inferior zones at thoracic CT

and positive VZV IgG. Pneumonic infiltration and ground-glass areas in the bilateral inferior zones were present at thoracic computerized tomography (CT) (Fig. 2). Varicella pneumonia was diagnosed based on the patient being in contact with his children who had shortly previously contracted chickenpox, typical cutaneous lesions, and the clinical and CT findings.

The patient was started on intravenous acyclovir at 750 mg once every 8 h for varicella pneumonia, 40 mg 1×1 methylprednisolone, and ampicillin-sulbactam at 2 g once every 6 h for secondary bacterial infection. The lesions dried and the symptoms resolved, and the patient was discharged in a healthy condition on the 7th day.

DISCUSSION

Chickenpox is a mild childhood disease also seen in 10–20% of adults (1, 2). Known risk factors for adults include smoking, advanced age, pregnancy, chronic lung disease, advanced age, and immunosuppression (1). One study reported that pneumonia developed among adult chickenpox cases in 36.8% of smokers and in approximately 3% of non-smokers (5). We think that the absence of any of these risk factors in our case, despite the diffuse cutaneous eruptions, contributed to the positive course of the disease.

Chickenpox-related complications include secondary bacterial skin infection (50%), pneumonia (13.5%) and neurological complications (8.4%) in children and pneumonia (43.5%), thrombocytopenia (22.2%), and secondary skin infections (14.8%) in adults (6). Varicella pneumonia is a complication with a severe course and high mortality. Pneumonia generally emerges 1–6 days after the onset of eruptions and progresses with symptoms such as tachypnea, tight chest cough, respiratory difficulty, fever, pleuritic chest pain, and hemoptysis. Chest symptoms can also appear before the emergence of cutaneous eruptions (5). Typical chickenpox eruptions have emerged first followed by respiratory system symptoms in many case reports (7, 8). Fever and eruptions on the entire body also emerged first in the present case, followed by respiratory system symptoms. Respiratory symptoms in the present case commenced 4 days after typical cutaneous eruptions.

The presence of VZV IgM antibodies in serum confirms the diagnosis of chickenpox in patients with typical cutaneous eruptions. Areas of diffuse nodular or patch-type infiltration can be seen on X-ray in VZV pneumonia. Diffuse or patch-type nodular infiltration and a ground-glass appearance around the nodules are present in the bilateral lungs at CT (9). VZV IgM was negative and IgG was positive in our case. However, varicella pneumonia in the present case was diagnosed based on the history of chickenpox in the children, the presence of typical chickenpox lesions on the body, and a ground-glass appearance compatible with pneumonia at CT. In addition, it was thought that VZV IgM antibodies could not be detected because the antibody test was performed in the late stage of the disease.

Various studies have suggested that starting acyclovir therapy in the early period reduces mortality in varicella pneumonia (6, 8, 10). However, studies also suggest that corticosteroid use in addition to existing treatment is controversial (10). However, in addition to acyclovir therapy, our patient was also started on 40 mg/day methylprednisolone and ampicillin-sulbactam therapy for secondary bacterial infection seen in the cutaneous lesions. Complete healing was achieved following 7-day treatment.

CONCLUSION

Since varicella pneumonia can be fatal in adults, this entity should be considered in adult patients with respiratory symptoms such as cough, respiratory difficulty, chest pain, tachypnea, and hemoptysis in addition to chickenpox symptoms, and patients should be started on acyclovir therapy in the early period.

Informed Consent: Written informed consent was obtained from patients who participated in this study.

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Conflict of Interest: The authors have no conflict of interest to declare.

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