Varicella-zoster virus pneumonia
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Clinical

A 36-year-old man presented to the emergency department with fever and progressive skin rashes for 3 days, followed by cough and dyspnoea for 1 day. During this period he had contact with his 18-month-old son who had developed chickenpox. His medical history was unremarkable and he had no past history of varicella-zoster virus (VZV) infection or vaccination, and no risk factors for HIV. He was febrile (39°C) and skin examination revealed numerous characteristic varicella skin eruptions: polymorphic rashes with vesicles and pustules over face, trunk and extremities.

Biochemical studies showed elevated liver transaminase levels (aspartate aminotransferase [AST] 61 IU/L; alanine aminotransferase [ALT] 62 IU/L) and peripheral blood haemogram showed lymphocytosis (lymphocyte count 7296 cells/mm$^3$). The initial chest radiograph (Figure 1) revealed diffuse nodular infiltrates in combination with a fine reticular pattern, compatible with interstitial pneumonitis. There was no evidence of encephalitis, nephritis or myocarditis.

The patient received intravenous acyclovir administration for the clinical diagnosis of VZV infection complicated with pneumonia. After hospitalisation, fever and respiratory symptoms gradually improved, and the skin eruptions became crusty. A follow-up chest radiograph 1 week later (Figure 2) revealed nearly total resolution of pulmonary infiltrates.

Figure 1. Initial chest radiograph

Figure 2. Follow-up chest radiograph 1 week later
Discussion

Pneumonia is a serious complication of VZV infection and occurs primarily in adults. In VZV infection, pregnancy, chronic lung disease, a history of smoking, an immunocompromised status, a close contact with chickenpox, a greater number of skin lesions and acute respiratory symptoms are associated with an increased risk of developing pneumonia.¹

Varicella pneumonia is usually a clinical diagnosis based on the presence of a typical rash associated with bilateral pulmonary infiltrates and microbiological confirmation is not usually necessary in typical cases.²,³ The most common radiological pattern observed is bilateral reticulonodular pattern followed by patchy airspace consolidations.²,³ After the introduction of acyclovir, the average fatality rate of VZV complicated by pneumonia decreased from 19% during the 1960s and 1970s to 6% during the 1980s and 1990s.¹

Performing chest radiographs in all adults with VZV infection and recognising the characteristic radiological features of varicella pneumonia, irrespective of whether or not they have respiratory symptoms, is important for the diagnosis and institution of early antiviral treatment to reduce the risk of a fatal outcome.¹,²

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References: