

Varicella-zoster virus pneumonia presenting as diffuse alveolar haemorrhage in a patient with a history of systemic lupus erythematosus

Nouran Eshak ¹, Mahmoud Abdelnabi ^{1,2}, Kenneth Nugent,¹ John Pixely¹

¹Internal Medicine Department, Texas Tech University Health Sciences Center, Lubbock, Texas, USA

²Cardiology and Angiology Unit, Clinical and Experimental Internal Medicine Department, Alexandria University Medical Research Institute, Alexandria, Egypt

Correspondence to

Dr Mahmoud Abdelnabi; mahmoud.hassan.abdelnabi@outlook.com

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DESCRIPTION

A young man in his 20s with a history of systemic lupus erythematosus (SLE) was admitted a month ago for acute kidney injury secondary to lupus nephritis. He received pulse corticosteroids and two doses of cyclophosphamide a month apart and required maintenance haemodialysis. He presented again with shortness of breath and haemoptysis. He was tachypneic with a respiratory rate of 30/min, hypoxaemic with an O₂ saturation of 72%, and required supplemental O₂ with a non-rebreather mask. He had not missed any dialysis sessions in the 1 week since discharge. In the emergency department, the initial laboratory workup was significant for leucocytosis with white cell count of $17 \times 10^9/L$, and normocytic anaemia with haemoglobin of 90 g/L, his chest X-ray (CXR) showed complete opacification of the right hemithorax and extensive left lung opacities (figure 1). CT chest without contrast showed extensive bilateral infiltrates and a moderately large right effusion with right lower lobe atelectasis (figure 2). Right pleurocentesis was done, with the removal of 1 L of pleural fluid, which was transudative.

He was placed on BiPAP but required intubation for continued hypoxaemia and increased work of breathing. Bronchoscopy revealed blood clots at the carina and on the right and left main bronchi. On bronchoalveolar lavage (BAL), bloody non-clearing secretions were obtained; these findings

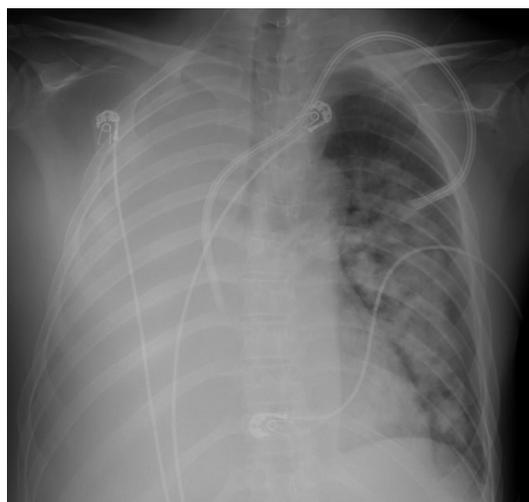


Figure 1 CXR showed complete opacification of the right hemithorax and extensive left lung opacities. CXR, chest X-ray.



Figure 2 CT showed large right pleural effusion and extensive left lung opacities.

were consistent with diffuse alveolar haemorrhage (figure 3). He was given 1 g methylprednisolone empirically for lupus pneumonitis. Viral panel done on the BAL was positive for varicella-zoster virus (VZV) PCR. He was diagnosed with VZV pneumonitis, corticosteroids were quickly tapered down, and acyclovir 5 mg/kg intravenous was started daily for 7 days. His follow-up CXR (figure 4) showed marked improvement of pulmonary infiltrates; he was extubated and discharged on prophylactic acyclovir and trimethoprim-sulfamethoxazole.

Alveolar haemorrhage is a rare but life-threatening presentation in patients with SLE.¹ It is usually attributed to lupus pneumonitis; however, when a patient has been on long-standing immunosuppressive therapy, an infectious aetiology should be considered, and BAL with cultures and viral PCR should be performed. VZV pneumonia is usually associated with underlying medical conditions or immunosuppression, but it can occur in healthy young individuals, especially pregnant women. Respiratory disease severity, early bacterial coinfection and other organ failures are independent risk factors for morbidity and mortality. Treatment is mainly supportive with antiviral therapies. Adjunctive corticosteroid therapy is controversial.²



Figure 3 Non-clearing bloody secretions obtained by BAL. BAL, bronchoalveolar lavage.



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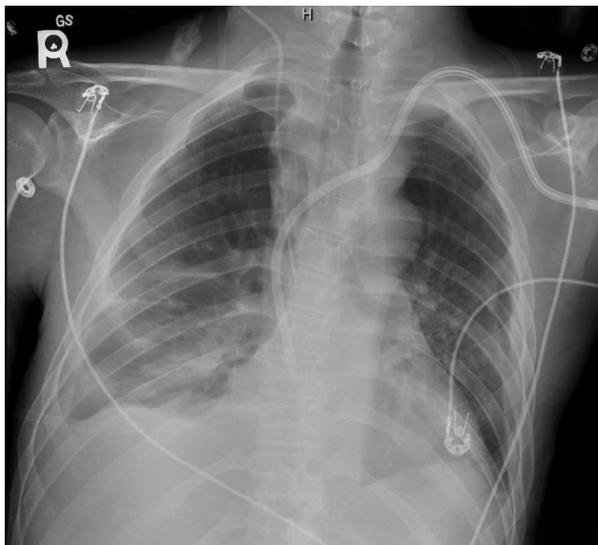


Figure 4 Follow-up CXR showed marked improvement of pulmonary infiltrates. CXR, chest X-ray.

Twitter Mahmoud Abdelnabi @M_H_Abdelnabi

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Competing interests None declared.

Learning points

- ▶ Varicella-zoster virus pneumonia is usually associated with underlying medical conditions or immunosuppression, but healthy young individuals also develop this pneumonia.
- ▶ Respiratory disease severity, early bacterial coinfection and other organ failures on intensive care unit admission are independent risk factors for invasive mechanical ventilation.
- ▶ The mainstay of treatment is supportive treatment and antiviral therapy while the use of adjunctive steroid therapy is controversial.

Patient consent for publication Consent obtained directly from patient(s)

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Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

ORCID iDs

Nouran Eshak <http://orcid.org/0000-0003-0479-543X>

Mahmoud Abdelnabi <http://orcid.org/0000-0001-8016-9049>

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