Dear Editor,

Organizing pneumonia is characterized by fibroblastic proliferation in the distal airways with an inflammatory response in different pulmonary situations.\(^1\) Cytomegalovirus (CMV)-associated organizing pneumonia was very rarely reported and only limited to post-transplant recipients.\(^2\) Ventilator-associated CMV pneumonia of immunocompetent patients has been described.\(^3,4\) However, CMV organizing pneumonia has not been mentioned in these patients.

A 64-year-old diabetic man had acute respiratory failure and was admitted to an intensive care unit on September 5, 2012. His blood urea nitrogen was 215 mg/dL; creatinine 15.47 mg/dL; K 6.55 mEq/L; white blood cell count 15,900/μL; hemoglobin 11.3 g/dL; and platelet count 98,000/μL. The patient received continuous veno-veno hemofiltration followed by maintenance hemodialysis. The institutional review board of the Chi Mei Medical Center, Taiwan approved the study of the patient (no. 10111-014) with informed family consent.

On September 8, a chest radiograph showed predominately right lung infiltrates (Fig. 1A). The sputum culture yielded carbapenem-resistant \textit{Acinetobacter baumannii} (CRAB). The patient received 1 week of cefpirome plus sulbactam and a subsequent 2 weeks of ceftazidime plus colistin. However, right pneumonia became more extensive (Fig. 1A). The antibiotic therapy was replaced by meropenem plus colistin. On October 17, parenteral ganciclovir was added as delayed resolution of pneumonia (Fig. 1A) and the patient tested positive in a CMV-polymerase chain reaction (PCR) of blood and endobronchial sputum. However, CMV pneumonia has not been mentioned in these patients.

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A right lung biopsy by means of video-assisted thoracoscopic surgery was performed on October 25. The resected lung tissue culture did not yield any bacterial organism. The lung tissue pathology reported organizing pneumonia as alveolar spaces were filled with fibrin and foamy histiocytes. Because CMV pneumonia was not mentioned, ganciclovir therapy was de-escalated to valganciclovir. However, the blood CMV-PCR obtained on November 8 remained positive. The pneumonia persisted without significant resolution (Fig. 1C). At this time point, we requested additional CMV immunohistochemical staining on the initial lung biopsy. CMV pneumonia was then confirmed by the presence of enlarged cells with eosinophilic inclusion bodies, which was positive for CMV immunohistochemical stain (Fig. 1D).

On November 12, the patient died in septic shock due to double lumen-associated enterococcal bacteremia. Final needle necropsy of the right lung revealed CMV pneumonia, suggesting poor therapeutic response to ganciclovir (100 mg every other day) for 10 days and subsequent 2-week valganciclovir therapy (450 mg p.o. every other day). The results of sputum and resected lung tissue cultures for \textit{Mycobacterium tuberculosis} were no growth.

The poor antiviral effects in our case may be due to early de-escalation of parenteral ganciclovir to oral valganciclovir when CMV was missed in the initial biopsies. A longer duration of parenteral ganciclovir induction therapy for 2–3 weeks may be required to treat severe CMV pneumonia with slow resolution or persistent viremia on treatment.\(^5\)

In conclusion, earlier diagnosis and prompt antiviral therapy for ventilator-associated CMV organizing pneumonia should be emphasized. CMV immunohistochemical staining improves the diagnostic yield of CMV tests on the biopsies.

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Figure 1. (A) Ventilator-associated pneumonia with delayed resolution for more than 1 month. (B) The computed tomography of the chest showing multiple poorly enhanced consolidative patches with air bronchograms particularly on the right lung and pleural effusion on the left side. (C) The pneumonia showing untoward response to ganciclovir therapy (left), becoming organizing pneumonia (middle), and persistence without significant change (right). (D) Open biopsy from the right lung (C, middle) showing organizing pneumonia and an enlarged cell with eosinophilic inclusion body (left, arrow), which is positive for Cytomegalovirus (CMV) immunohistochemical staining (right, arrow).
Conflicts of interest

All authors declare no conflicts of interest.

References


Wen-Liang Yu*
Department of Intensive Care Medicine,
Chi Mei Medical Center, Tainan City, Taiwan

Department of Medicine, Taipei Medical University,
Taipei City, Taiwan

Chin-Ming Chen
Department of Intensive Care Medicine, Chi Mei Medical Center, Tainan City, Taiwan

Department of Recreation and Health Care Management,
Chia Nan University of Pharmacy and Science,
Tainan City, Taiwan

Wen-Ying Lee
Department of Pathology, Chi Mei Medical Center,
Tainan City, Taiwan

Department of Pathology, Taipei Medical University,
Taipei City, Taiwan

*Corresponding author. Department of Intensive Care Medicine, Chi Mei Medical Center, Number 901 Zhonghua Road, Yongkang District, 710 Tainan City, Taiwan.
E-mail address: yuleon_md@yahoo.com.tw (W.-L. Yu)

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