

Viral Pneumonia: Coinfection of Cytomegalovirus and Herpes Simplex Virus

Key words: viral pneumonia, cytomegalovirus, herpes simplex virus, herpes simplex virus hepatitis, cutaneous T-cell lymphoma

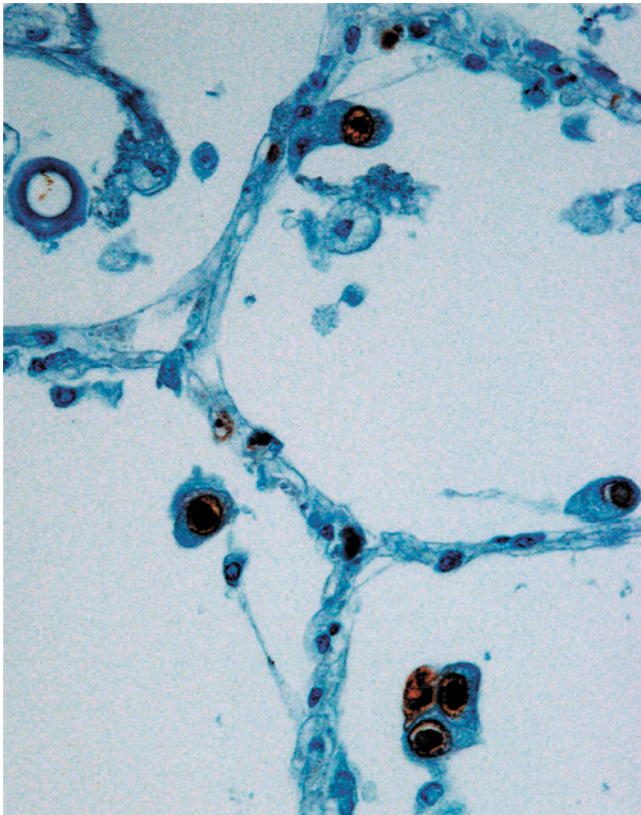


Figure 1. Lung showing swollen alveolar epithelial cells with intranuclear CMV inclusions (anti-CMV immunostaining).

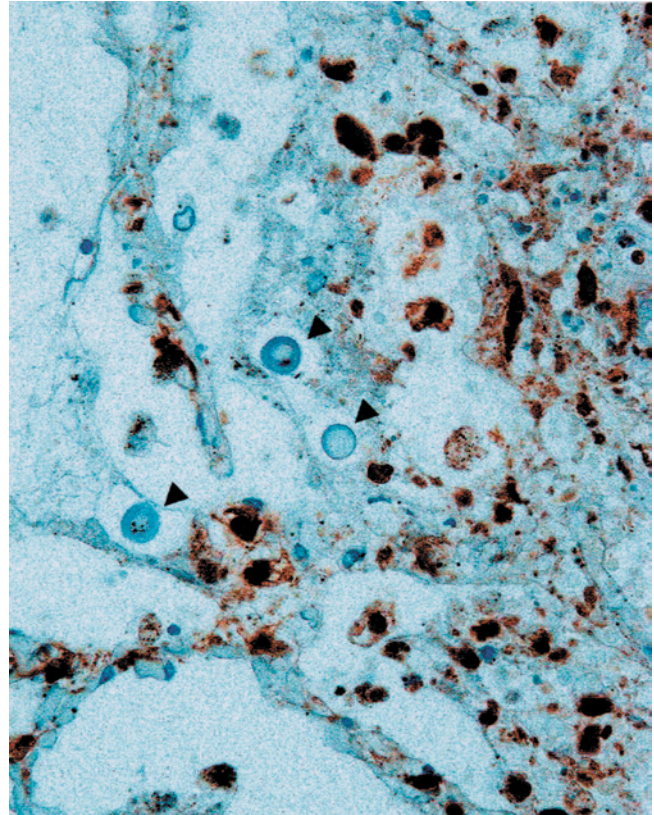


Figure 2. Lung showing a cluster of HSV-infected cells along with cryptococci (arrowheads) (anti-HSV immunostaining).

A 66-year-old woman with cutaneous T-cell lymphoma was admitted because of a high fever. For the previous 2 years, she had been treated with various chemotherapeutic regimens with partial remission. On admission, she had pigmented skin lesions, cervical and axillary lymphadenopathy, and genital ulcers. Laboratory data included erythrocyte sedimentation rate 118 mm/h, C-reactive protein 14.2 mg/dl, hemoglobin 7.4 g/dl, leukocyte count $2,300/\text{mm}^3$ with 42% neutrophils and 28% lymphocytes, platelet count $161,000/\text{mm}^3$, lactic dehydrogenase 705 IU/l, and soluble IL-2 receptor 20,500 U/ml. Serology for HTLV-I antibody was negative. She was treated with antibiotics and high-dose methylprednisolone. However, her clinical condition gradually worsened with severe hepatic dysfunction, hypoxemia, and disseminated intravascular coagulation, causing death 1 month after admission. Chest radiograph obtained 2 days before death demonstrated patchy and reticular infiltrates. Postmortem examination revealed residual lymphoma cells in several organs. The liver showed a typical feature of herpes simplex virus (HSV) hepatitis (Pathol Int 51: 288-292, 2001). The lungs were coinfecting with cytomegalovirus

(CMV) and HSV, as defined by immunohistochemistry using antibodies to each virus: a diffuse distribution of CMV-infected alveolar epithelial cells with characteristic intranuclear inclusions was found (Fig. 1), while clusters of HSV-infected cells were scattered in the lungs (Fig. 2). In addition, there was a focal infection of *Cryptococcus neoformans*. Given the genital herpes of the patient, HSV which was reactivated in the genitalia is likely to have disseminated to the liver and lungs. Since the anti-HSV used was cross-reactive with HSV-1 and HSV-2, it is unknown which of these viruses was the culprit. CMV, HSV, and *C. neoformans* are all opportunistic pathogens. Of these, HSV is the most uncommon cause of pneumonia but should be anticipated in immunosuppressed patients, especially in those with mucocutaneous herpes. Technically, however, the intranuclear inclusions of HSV are not as conspicuous as those of CMV on hematoxylin-eosin-stained sections and may be overlooked unless stained immunohistochemically.

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