Cerebral Air Embolism Caused by Persistent Cough

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An 80-year-old man presented with a 10-day history of fever and productive cough. A laboratory investigation revealed leukocytosis and chest computed tomography (CT) showed consolidation on the right upper lobe (Picture 1). The patient was treated with broad-spectrum antibiotic therapy but the clinical course was complicated by hemoptysis and persistent cough. One week after his admission, he coughed and suddenly developed hypoxia and hypotension. Subsequently severe neurologic deficits developed (Glasgow Coma Scale score, 3; no light reflex). He had quadriplegia with decreased reflexes and conjugate eye deviation toward the right. Brain CT and magnetic resonance imaging demonstrated diffuse cerebral air embolism (Picture 2, 3). The patient died two days after the diagnosis.

Cerebral air embolism can be a potentially lethal complication. It is often caused iatrogenically when positive-
pressure maneuvers are performed (1, 2). We suspect that the patient’s air embolism was caused by coughing which could have led to positive pressure pushing air into the pulmonary vein, which was permeable due to the infection.

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References