Melanoptysis: An Unusual Complication in Fiberoptic Bronchoscopy

To the Editor:

Melanoptysis may occasionally present as a complication of coal worker pneumoconiosis in the form of an isolated cough or as a severe attack, with sputum in small or massive amounts that can lead to severe acute respiratory failure and death. To date, only 1 case associated with a complication of fiberoptic bronchoscopy has been reported. We report the first case to be published initially in Spanish.

The patient was a 77-year-old man referred to our department because of an abnormal chest radiograph taken when he consulted for urinary symptoms. He was an active smoker of 52 pack-years who had worked in the iron and steel industry in Russia for 45 years and had been diagnosed with silicosis in 1970 (no clinical or radiographic reports were provided). The physical examination showed blood pressure of 170/80 mm Hg, a respiratory rate of 15 breaths/min, an axillary temperature of 39°C, and a heart rate of 100 beats/min. Lung auscultation revealed diminished vesicular sounds and vocal fremitus in both hemithoraces with rhonchi that could be cleared by coughing. The patient had a distended bladder with overflow incontinence. Noteworthy laboratory findings were recorded in the arterial blood gas analysis (with an inspired oxygen fraction of 0.21): pH of 7.46, PaCO₂ of 34 mm Hg, PaO₂ of 83 mm Hg, and bicarbonate of 24 mmol/L. Chest radiography showed loss of volume in the right hemithorax, an interstitial nodular pattern in the middle and upper lung fields, areas of emphysema, signs of air trapping, a right parahilar mass measuring 5 × 4.5 cm, and another mass of similar characteristics in the left apex (Figure 1a). The chest computed tomography scan also showed enlarged hilar and subcarinal lymph nodes of 1 cm or more and calcified retrocaval precarinal nodes. Lung function tests showed a forced vital capacity (FVC) of 4270 mL (101%), forced expiratory volume in 1 second (FEV₁) of 2580 mL (88%), FEV₁/FVC of 60 (85%), diffusing capacity of lung for carbon monoxide (DLCO) of 76%, and a ratio of DLCO to alveolar volume of 73%. Fiberoptic bronchoscopy showed anthracotic pigmentation in both bronchi of the upper and intermediate lobes, distortion of the bronchial tree, scar lesions, and mucosal irregularity on the bifurcation ridge of the middle lobe bronchus. Microbiology and pathology of the bronchial aspirate and brushing were negative.

A second fiberoptic bronchoscopy using radiological imaging techniques was performed to rule out the presence of cancer. Following a transbronchial biopsy of the posterior segment of the right upper lobe, the patient produced more than 100 mL of a dark dense fluid, indicative of melanoptysis, which required aspiration and repeated lavage until it stopped (Figure 1b). The transbronchial biopsy showed lymph node silicosis and macrophages with anthracotic pigmentation. Melanoptysis (a total of 200 mL) subsided spontaneously in the next 24 hours with no evidence of cavitation on the radiograph taken after the fiberoptic bronchoscopy. At 8 months of follow-up, the patient had presented no new episodes of melanoptysis and showed no radiographic changes.

Melanoptysis (from the Greek melas, meaning black, and ptyasma, meaning “spit”—pthisia atra in Latin) consists of the expulsion or expectoration of black sputum made up of large quantities of carbon dust together with cholesterol crystals, collagen fibers, bronchial secretions, and, occasionally, blood. This symptom can appear in both simple and complicated pneumoconiosis. It is most frequently associated with the cavitation of conglomerate masses in progressive...