

39 Hemoptysis

Carolyn M. D'Ambrosio

Hemoptysis is the expectoration of blood from the respiratory tract. Bleeding from the gastrointestinal tract (hematemesis) or nasal cavities (epistaxis) can mimic hemoptysis. Once established as hemoptysis, the degree of blood that is being expectorated (volume and frequency) is the next step as massive or life-threatening hemoptysis (>400 mL of blood in 24 h or >150 mL at one time) requires emergent intervention. This chapter will focus predominantly on non-life-threatening hemoptysis. The source of the bleeding as well as the cause are the next steps when approaching a patient with hemoptysis.

ANATOMY AND PHYSIOLOGY OF HEMOPTYSIS

Hemoptysis can arise from anywhere in the respiratory tract, from the glottis to the alveolus. Most commonly, bleeding arises from the bronchi or medium-sized airways, but a thorough evaluation of the entire respiratory tree is important.

The dual blood supply of the lungs makes it unique. The lungs have both the pulmonary and bronchial circulations. The pulmonary circulation is a low-pressure system that is essential for gas exchange at the alveolar level; in contrast, the bronchial circulation originates from the aorta and, therefore, is a higher-pressure system. The bronchial arteries supply the airways and can neovascularize tumors, dilated airways of bronchiectasis, and cavitory lesions. Most hemoptysis originates from the bronchial circulation, and bleeding from the higher-pressure system makes it more difficult to stop.

ETIOLOGY

Hemoptysis commonly results from infection, malignancy, or vascular disease; however, the differential for bleeding from the