Delayed massive hemoptysis after endobronchial ultrasound-guided transbronchial needle aspiration

Dear Editor,

A 78-year-old man with a history of hypertension, obstructive sleep apnea, and deep venous thrombosis of the left lower extremity (on therapeutic anticoagulation) presented with hemoptysis 8 days after undergoing endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) for incidental mediastinal and hilar adenopathy. The procedure was uneventful, with no active bleeding at the end of the procedure. His anticoagulation had been held for the bronchoscopy, after which he was instructed to resume an enoxaparin-to-warfarin bridge. He had been taking both anticoagulants as directed when he developed spontaneous bright red hemoptysis of approximately two tablespoons. He had no hemoptysis before this. He had tolerated the bronchoscopy well without complications. Six passes each had been performed on enlarged lymph nodes in stations 4R, 7, and 11Rs with a 19-gauge needle.

On presentation, he was afebrile with heart rate 82/min, blood pressure 153/91 mmHg, respiratory rate 20/min, and SpO2 99% on room air. He was in no respiratory distress. Chest radiograph showed bilateral hilar fullness consistent with prior imaging but was otherwise unremarkable. The international normalized ratio was 1.66, and the platelet count was 242,000/μL. He had approximately 4 more tablespoons of bright red hemoptysis while in the emergency department, and he was admitted to the intensive care unit for close observation.

Over the following several hours, his hemoptysis persisted, totaling nearly 200cc of bright red blood. During this time, he was given 50 mg intravenous protamine, 10 mg intravenous Vitamin K, and two units of fresh frozen plasma without improvement. He began developing respiratory distress and hypoxia. Given his worsening clinical status and the failure of conservative measures to resolve his hemoptysis, he was intubated and bronchoscopy was performed. Bright red blood was found in both lungs. After clearing the airways, the bleeding source was identified at the TBNA site of the 4R lymph node. Aliquots of cold saline did not reduce the oozing of blood nor did topical epinephrine. Pending the arrival of thermal ablative therapies from the operating room, direct pressure was held over the bleeding site with the tip of the bronchoscope. This stopped the bleeding, and no further interventions were needed. Repeat bronchoscopy approximately 6 h later confirmed resolution. The following day, a temporary inferior vena cava filter was placed. Anticoagulation was resumed 14 days later, and he has had no further hemoptysis since then. Ultimately, cytologic studies revealed only signs of benign reactive lymph nodes without malignancy.

Delayed massive hemoptysis after EBUS-TBNA has never been reported. Lesser but still significant bleeding (i.e., requiring intervention) during EBUS-TBNA has been reported but is exceedingly rare, with an estimated rate of 0.2% or less.[1-3] In our case, resumption of therapeutic anticoagulation was likely a contributing factor, but it is unusual that the patient had been on dual blood thinners for 8 days before bleeding seemed to occur. Current EBUS-TBNA guidelines do not give a recommendation on when to resume anticoagulation after this procedure.[4] What may have contributed to bleeding was the use of a 19-gauge needle for TBNA and that six passes were performed at a given lymph node. Guidelines recommend either a 21- or 22-gauge needle but do not comment on the larger 19-gauge needle. Guidelines also recommend 3 or more passes per lymph node in cases of suspected lung cancer but do not suggest a maximum number of passes nor are there data examining any correlation between number of needle passes and bleeding risk.[4]

A second unique aspect of our case was the manner in which bleeding was treated. Bronchoscopy was performed in the intensive care unit where thermal ablative therapies are not immediately available as they are in the bronchoscopy suite; tools such as these can easily stop mucosal bleeding from a biopsy site. Pending the arrival of this equipment to the bedside, and given the failure of topical iced saline and epinephrine, direct pressure was held over the site with the tip of the bronchoscope. This led to complete cessation of oozing, with no further interventions needed. Rigid bronchoscopy can be used in various ways to address bleeding, including by direct tamponade, but, to our knowledge, there are no reports of direct tamponade by a flexible bronchoscope.[5]

Declaration of patient consent

The author certifies that he has obtained all appropriate patient consent forms. In the form the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his names and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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