Diagnosis of Pulmonary Embolism

Lynn M. Cloutier, RN, MSN, ACNP, AOCN®

Case 1: A 77-year-old Caucasian woman with a probable diagnosis of ovarian cancer developed an acute onset of shortness of breath two days after being discharged for a workup of symptomatic ascites. Her medical history was significant for hypertension and atrial fibrillation, and she was taking therapeutic doses of coumadin. She presented to the emergency department; was found to have a large, left pleural effusion; and was admitted to the hospital. A thoracentesis removed 2.1 L of fluid. The patient's respiratory distress improved; however, she experienced a second episode of sudden onset shortness of breath prior to her anticipated discharge. She was afebrile, with a room air pulse oximetry of 80%, pulse of 121 beats per minute, and respiratory rate of 28. A chest x-ray (CXR) showed only a small pleural effusion remaining on the left. An electrocardiogram (EKG) showed atrial fibrillation. A chest computed tomography (CT) was performed and showed bilateral pulmonary emboli.

Case 2: A 57-year-old, obese, African American woman with newly diagnosed endometrial cancer presented to clinic with a palpable left supraclavicular lymph node. A CXR revealed mediastinal adenopathy, and a chest CT was performed to further delineate the size of the mass and evaluate for metastases. The CT revealed a Hampton's hump and also was positive for pulmonary embolism (PE). The patient's vital signs were normal, and she did not have any respiratory symptoms. An ultrasound of her lower extremities was negative for deep vein thrombosis (DVT).

Case 3: A 31-year-old Caucasian woman receiving chemoradiation for cervical cancer was admitted to the hospital with diffuse abdominal pain that occurred two days after completion of brachytherapy with after-loading tandem and ovoids, a treatment requiring complete bed rest for 48 hours. On admission, further review of systems was negative; however, the patient mentioned that she lived in a two-story house and had shortness of breath after climbing stairs—a symptom she attributed to her body habitus and anemia. Her height was 162.5 cm, and her weight was 135.9 kg. During the patient's hospitalization, she developed a rapid heart rate of 139 beats per minute. An EKG showed sinus tachycardia, and a CXR revealed atelectasis and diminished lung volumes. Laboratory evaluation revealed leukocytosis with a white blood cell count of 21.5/mm^3, and a cardiac panel was negative. Her room air pulse oximetry was 100%. Following a diagnosis of pneumonia, the patient developed respiratory distress, was intubated, and was transported to the intensive care unit. Continued workup with a chest CT revealed bilateral pulmonary emboli and pulmonary metastases.

Case 4: A 58-year-old Caucasian woman with a history of cervical cancer underwent surgical debulking after an aborted pelvic exenteration. She developed a wound dehiscence and pelvic abscesses postoperatively. A pelvic drain was placed, and she was admitted to the hospital for IV antibiotic therapy. During her hospitalization, she developed a second surface abscess and a CT of the abdomen and pelvis was performed to delineate the extent of the abscess and to reassess the initial abscess. The CT showed an incidental finding of a pulmonary embolus in the right lower lobe, which was confirmed by chest CT. The patient was completely asymptomatic. She never displayed shortness of breath, she did not require oxygen, and her pulse rate was normal.

These patients all have a diagnosis of cancer or an anticipated diagnosis of cancer and a diagnosis of PE. Their cases are more different than similar, which illustrates how the presentation of PE is sometimes unusual, often varied, and usually found incidentally.

Discussion and Analysis

PE is an extremely common and highly lethal condition that is a leading cause of death in all age groups and the first- or second-most common cause of unexpected death in most age groups.

Lynn M. Cloutier, RN, MSN, ACNP, AOCN®, is a nurse practitioner at the University of Texas M.D. Anderson Cancer Center in Houston.

Digital Object Identifier: 10.1188/07.CJON.343-348