Deep Vein Thrombosis in the Patient With Cancer

Deena Damsky Dell, BC, AOCN®

Case Study

Ms. L, age 76, was diagnosed in January 1998 with locally advanced (III-B) breast cancer that was estrogen/progesterone recepto-negative and positive for the HER2/neu oncogene. After undergoing a left mastectomy, she received adjuvant chemotherapy with doxorubicin and cyclophosphamide. In 1999, disease recurrence on the chest wall was treated with paclitaxel and trastuzumab, followed by palliative radiation therapy to the chest wall. A left partial acromioplasty was performed in February 2000 to manage extension of the disease from the chest wall. The patient then remained stable until this morning when she awoke with chills and a fever of 102°F. She reported that she had experienced progressive shortness of breath over the past week, which increased dramatically over the past two days to the point where she is dyspneic at rest. She has no cough and says that she stays in bed or on the sofa all day.

Physical examination reveals an awake, alert, anxious, slightly confused patient short of breath at rest. Her vital signs are: temperature = 101.6°F; pulse = 120/minute and regular; respiratory rate = 30/minute; and blood pressure = 190/95 mm/Hg. Her oxygen saturation is 86% on room air and 92% on two liters of oxygen per nasal cannula. She has decreased breath sounds at the right base. Her abdomen is soft and non-tender with normoactive bowel sounds. Pitting edema (grade 2 out of 4) is evident bilaterally in both ankles and to the knee on the right. The right leg also is pink and warm to the touch. She has grade 2 (out of 4) pulses in both upper and lower extremities. No cyanosis or clubbing of the fingers or toes exists. Ms. L’s current medications include levothyroxine sodium, dexamethasone, clorazepate dipotassium, and ranitidine hydrochloride. The results of the diagnostic studies follow.

- White blood count 2,600/mm³
- Hemoglobin 7.5 g/dL
- Platelets 117,000/mm³
- Blood urea nitrogen 10 mg/dL
- Creatinine 0.5 mg/dL
- Prothrombin time 10 seconds
- International normalized ratio (INR) 0.97 (normal value 0)
- Activated partial thromboplastin time 41.9 seconds
- D-dimer assay > 1,000 ng/ml (normal range 0.00–500.00)
- Venous doppler (also called a duplex scan): Positive for bilateral deep vein thrombosis (DVT)
- Ventilation/perfusion lung scan: Indeterminate
- Chest x-ray: Consolidation at the right apex

Cultures of blood, urine, and sputum are obtained. The results of the diagnostic studies follow.

Discussion

Question 1: The correct response is choice D. Inherited or acquired abnormalities of the hematopoietic system and cancer are considered to be persistent risk factors for the development of thromboembolic disease (Alatri, Carnovali, & Prandoni, 2000). For this reason, treatment recommendations for patients with cancer include continuing DVT treatment until no evidence of the disease exists and not limiting treatment to 6–24 weeks for a first DVT as is recommended for patients with nonmalignant disease (Bauer, 2000).

Cancer and its treatment can affect all three arms of Virchow’s triad, which include

Deena Damsky Dell, BC, AOCN®, is a clinical nurse specialist at the Fox Chase Cancer Center in Philadelphia, PA.