Thromboembolic Disorders in Cancer

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Thrombosis is a major complication of cancer. Multiple precipitating factors, including tumor procoagulants, cancer treatment with surgery and chemotherapy, and immobility, contribute to its incidence. Understanding the etiology, clinical manifestations, diagnostic tests, and interventions for prevention and treatment is important for oncology nurses providing care to this complex group of patients.

Case Study

M.J., age 62, presented to the emergency department with complaints of shortness of breath without chest pain that was exacerbated with exertion but unrelieved by rest or analgesics. She also noticed some increasing ecchymosis in her left foot over the past few weeks with no history of injury. M.J. was taking warfarin after being diagnosed two months earlier with extensive deep vein thrombosis (DVT) of her left lower extremity. On examination, she had 2+ pitting edema in the left lower extremity extending from the foot to the knee and fairly extensive ecchymosis over her left lateral foot. Her breath sounds were clear but diminished in the lower lobes with an oxygen saturation of 94% on room air. A computed tomography (CT) pulmonary angiogram revealed extensive pulmonary emboli (PE) that involved the left and right lower lobes. Her D-dimer assay was markedly elevated in the lower lobes with an oxygen saturation of 94% on room air. A computed tomography (CT) pulmonary angiogram revealed extensive pulmonary emboli (PE) that involved the left and right lower lobes. Her D-dimer assay was markedly elevated in the lower lobes with an oxygen saturation of 94% on room air.

Venous thromboembolic disease includes superficial and DVT, PE, and thrombosis of venous access devices. This disease affects 15% of patients with cancer and is the second leading cause of death in hospitalized patients with cancer (Haire, 2000). Thromboses also have been found postmortem in up to 50% of patients with metastatic cancer (Walsh-McMonagle & Green, 1997). In one study of women with stage II breast cancer receiving chemotherapy, the rate of thrombosis was 5%–13%, with the highest rates observed in postmenopausal women (Rickles & Levine, 2001). The addition of tamoxifen to chemotherapy increases the risk for venous thrombosis over chemotherapy alone (Saphner, Tormey, & Gray, 1991).

Key Words: neoplasms, venous thrombosis, anticoagulants

Complex factors, including substances in cancer cells, cancer treatment effects, and venous stasis associated with chronic illness, blood vessel wall injury, and immobility, interact to place patients with cancer at risk for thrombosis. This article describes the etiology, clinical manifestations, diagnostic tests, and treatments for venous and pulmonary emboli associated with cancer. It explores the nurse’s role in assessing patients who are at risk, managing symptomatic thrombosis and primary and secondary prevention of emboli, and administering anticoagulant therapy. As growing numbers of patients are treated in outpatient settings, oncology nurses play a critical role in the coordination of care for patients at risk for thrombosis. A nursing care plan summarizes key nursing strategies for assessment and intervention.

Incidence

Despite ongoing anticoagulation therapy, M.J. developed symptoms of vascular insufficiency of her lower extremities. A bilateral venous duplex scan demonstrated extensive thrombus in her right popliteal, femoral, and common femoral veins and partial thrombus in her left common femoral and popliteal veins. Because the thrombosis progressed despite warfarin and enoxaparin therapy, a continuous infusion of IV heparin was initiated. Following hospitalization, M.J. was discharged on a continuous heparin infusion at a dose of 1,800 units per hour.

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