CHAPTER 33 / Nursing Care of Clients with Peripheral Vascular and Lymphatic Disorders

CHART 33–3 NANDA, NIC, AND NOC LINKAGES

The Client with Venous Thrombosis

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- Initiate oxygen therapy, elevate the head of the bed, and reassure the client who is experiencing manifestations of pulmonary embolism. **Oxygen therapy and elevating the head of the bed promote ventilation and gas exchange in those alveoli that are well perfused, helping maintain tissue oxygenation.** Reassurance helps reduce anxiety and slow the respiratory rate, promoting greater respiratory depth and alveolar ventilation.

Using NANDA, NIC, and NOC

Chart 33–3 shows links between NANDA nursing diagnoses, NIC (McCloskey & Bulechek, 2000), and NOC (Johnson et al., 2000) for the client with venous thrombosis.

**Home Care**

Treatment measures for venous thrombosis may be initiated and carried out on an outpatient basis or continued for an extended period of time following hospital discharge. Include the following topics when teaching for home care.

- Explanation of the disease process
- Treatment measures, including laboratory tests and their purposes, medications and adverse effects that should be reported
- Appropriate methods of heat application
- Prescribed activity restrictions
- Measures to prevent future episodes of venous thrombosis
- The importance of follow-up visits and laboratory tests as scheduled

Refer clients for community nursing services for continued assessment and reinforcement of teaching. Provide referrals for assistance with ADLs and home maintenance services as indicated. Consider referral for physical therapy if needed.

Nursing Care Plan

A Client with Deep Vein Thrombosis

Mrs. Opal Hipps, age 75, lives alone with her dog, Chester, in her family home in the suburbs. She retired from her job as a postal clerk 10 years ago and now spends a lot of time reading and watching television. Over the past week she has developed a vague aching pain in her right leg. She ignored the pain until last night when it developed into a much more severe pain in her right calf. She noticed that her right lower leg seemed larger than the left, and it was very tender to the touch. After seeing her physician and undergoing Doppler ultrasound studies, Mrs. Hipps is admitted to the hospital with the diagnosis of deep vein thrombosis in the right leg. She is placed on bed rest, and intravenous heparin. Michael Cookson, RN, is assigned to admit and care for Mrs. Hipps.

**ASSESSMENT**

Mr. Cookson notices that Mrs. Hipps was admitted 14 months ago for repair of a fractured femur. Mrs. Hipps says, “This business about a blood clot really has me worried.” She also tells Mr. Cookson that she is worried about who will care for her dog while she is in the hospital. Physical findings include: height 62 inches (157 cm), weight 149 lb (68 kg), T 99.2 F (37.3°C); vital signs within normal limits otherwise. Her left leg is warm and pink, with strong peripheral pulses and good capillary refill. Her right calf is dark red, very warm, and dry to touch. It is tender to palpation. The right femoral and popliteal pulses are strong, but the pedal and posterior tibial pulses are difficult to locate. The right calf diameter is 0.5 inch (1.27 cm) larger than the left.

(continued)
Nursing Care Plan

A Client with Deep Vein Thrombosis (continued)

DIAGNOSIS
Mr. Cookson makes the following nursing diagnoses for Mrs. Hipps.
- Pain related to inflammatory response in affected vein
- Anxiety related to unexpected hospitalization and uncertainty about the seriousness of her illness
- Ineffective tissue perfusion: Peripheral related to decreased venous circulation in the right leg
- Risk for impaired skin integrity related to pooling of venous blood in the right leg

EXPECTED OUTCOMES
The expected outcomes of the plan of care are that Mrs. Hipps will:
- Verbalize relief of right leg pain by day of discharge.
- Verbalize reduced anxiety by the second day of her hospitalization.
- Demonstrate reduced right leg diameter by 0.25 inch (0.64 cm) by the fifth day of hospitalization.
- Maintain intact skin in the right foot throughout the hospital stay.

PLANNING AND IMPLEMENTATION
The following interventions are planned and implemented for Mrs. Hipps.
- Elevate legs, maintaining slight knee flexion, while in bed.
- Apply warm, moist compresses to right leg using a 2-hour-on, 2-hour-off schedule around the clock.
- Administer prescribed analgesics and evaluate effectiveness.
- Spend time with Mrs. Hipps to explain venous thrombosis and its treatment.
- Arrange for a friend or neighbor to care for Mrs. Hipps's dog.
- Apply antiembolism stockings as ordered; remove for 30 minutes every 8 hours.
- Monitor laboratory values to assess effect of anticoagulant therapy; report values outside desired range.
- Assist with progressive ambulation when allowed.
- Inspect legs and feet and record findings every 8 hours.

EVALUATION
Seven days after admission, the pain in Mrs. Hipps's right leg has subsided and the diameter of her right calf is equal to her left calf. Mrs. Hipps admits to Mr. Cookson that her fears really relate to a cousin who was hospitalized for a similar problem and had his leg amputated. After talking about her condition and the steps she can take to prevent its recurrence, she is much less anxious. Before discharge, Mr. Cookson reviews instructions for antiembolism stockings, daily walking, warfarin schedule, and scheduled follow-up appointment. Her neighbor, Kate, came to pick her up. As Mr. Cookson was helping Mrs. Hipps into the car, Kate handed her a small brown dog and said, "I took good care of Chester for you, but he's missed you." Mrs. Hipps smiled, and assured Mr. Cookson that she would call the number he provided if she had any questions.

Critical Thinking in the Nursing Process
1. Describe the pathophysiologic reasons for the pain in Mrs. Hipps's right leg.
2. How would you respond if Mrs. Hipps tells you she does not have the money to buy the prescribed anticoagulant when she goes home?
3. How would you change your teaching and discharge planning if Mrs. Hipps had difficulty caring for herself?
4. Design a plan of care for Mrs. Hipps for the diagnosis, Activity intolerance.

See Critical Thinking in the Nursing Process in Appendix C.

THE CLIENT WITH CHRONIC VENOUS INSUFFICIENCY

Chronic venous insufficiency is a disorder of inadequate venous return over a prolonged period. Deep vein thrombosis is the most frequent cause of chronic venous insufficiency. Other conditions, such as varicose veins or leg trauma, may contribute; in some instances, it develops without an identified precipitating cause (Braunwald et al., 2001; Tierney et al., 2001).

PATHOPHYSIOLOGY
Following DVT, large veins may remain occluded, increasing the pressure in other veins of the extremity. This increased pressure distends the veins, separating valve leaflets and impairing their ability to close. DVT also damages valve leaflets, causing them to thicken and contract. The result is impaired unidirectional blood flow and deep vein emptying (Porth, 2002).

When venous valves are incompetent, the muscle-pumping action produced during activity cannot propel blood back to the heart. Venous blood collects and stagnates in the lower leg (venous stasis). Venous pressures in the calf and lower leg increase, particularly during ambulation. This increased pressure impairs arterial circulation to the lower extremities as well. The body’s ability to provide sufficient oxygen and nutrients to the cells and remove metabolic waste products diminishes. Eventually, there is so little oxygen and nutrients that cells begin to die. The skin atrophies, and subcutaneous fat deposits necrose. Breakdown of red blood cells in the congested tissues causes brown skin pigmentation (Porth, 2002). Venous stasis ulcers develop. Congested tissues impair the body’s ability to increase the supply of oxygen, nutrients, and metabolic energy to heal the ulcer. As a result, the condition worsens and, over time, the ulcers enlarge. The congested venous circulation also prevents the blood from mounting effective inflammatory and immune responses, significantly increasing the risk for infection in the ulcerated tissue (McCance & Huether, 2002).