

Arterial Disorders NCLEX Review

Arterial Disorders "*Think of a Dying Garden*"

When your patient suffers from arterial disease, blood return is not the issue. Instead, we have a problem with the flow – blood that can't get down to the area in question. As a result, the surface will look more like a "barren wasteland." Think of it as a garden: if you can't transport water and nutrients to the plants (in this case, tissues), everything will dry up and die.

Causes: partial stenosis or complete occlusion (Atherosclerosis)

- Reynaud disease
- Buerger disease

Signs and symptoms:

- Intermittent claudication
- Dusky, purplish (grayish-blue) discoloration of feet (dependent)
- White/pale (elevated)
- Lower back, buttock discomfort
- Loss of hair, shiny skin (lower ex)
- Low BP on lower ex
- Thickened toenails
- Ulcers on legs

Deep, pale (*common: toes, feet, other skin areas*)

- Venous refiling (dependent)
- Decreased or absent pedal pulse
- Numbness, cold, tingling in extremity

Interventions:

- Elevate the feet at rest (not at the level of the heart)
- Monitor peripheral pulses
- Smoking cessation
- Administer anticoagulants, vasodilators and anti-platelet medications
- Individualized exercise program
- Avoid crossing legs
- Avoid exposure to cold
- NEVER apply direct heat

Procedures:

- Percutaneous transluminal angioplasty
- Endarterectomy

- Amputation

Venous Disorders "It's About Pooling Blood"

- Varicose veins

When your patient has venous insufficiency, what's going on? It's not a problem with blood flow, it's a problem with blood return. When the blood can't get back up to the heart, it pools in the lower leg.

Causes: Thromboembolism, varicose, chronic venous insufficiency

Signs and symptoms:

- Discoloration of the lower extremity, stasis dermatitis
- Edema over the tibia
- Ulcers
- Tenderness in legs
- Positive **Homan's sign**

Arterial vs. Venous

	Arterial	Venous
Pain	Intermittent claudication	Aching: cramping
Pulse Assessment	Diminished	Normal or diminished
Ulcer	Deep, pale (<i>toes, feet, other skin areas</i>)	Superficial, pink (<i>inner/outer ankle</i>)
Skin	Dependent rubor/dusky pallor upon elevation; shiny, skin; cool or temperature, mild edema	red; Thick and tough, brown pigment, cool, may have edema

Risk reduction:

- Monitor peripheral pulses
- Administer anticoagulants
- Management of body weight
- Physical exercise
- Smoking cessation
- Avoid extreme temperatures
- SCDs, TED hose
- Elevate the legs
- Educate patient regarding thrombectomy

Aortic Aneurysm

- An aortic aneurysm is an abnormal dilation of the arterial wall caused by localized weakness and stretching in the medial layer or wall of the aorta.
- Located anywhere along the abdominal aorta.
- Goal of treatment: limit the progression of the disease by modifying risk factors, controlling the BP to prevent strain on the aneurysm, recognizing symptoms early, and preventing rupture.

Assessment:

Thoracic aneurysm

- Pain extending to neck, shoulders, lower back, or abdomen
- Syncope
- Dyspnea
- Increased pulse
- Cyanosis
- Hoarseness, difficulty swallowing (pressure from the aneurysm)

Abdominal aneurysm

- Prominent, pulsating mass in the abdomen, at or above the umbilicus
- Systolic bruit over the aorta
- Tenderness on deep palpation
- Abdominal or lower back pain

Rupturing aneurysm

- Severe abdominal or back pain
- Lumbar pain radiating to the flank and groin
- Hypotension
- Increased pulse rate
- Signs of shock
- Hematoma at flank area

Interventions:

- Monitor vital signs.
- Obtain information regarding back or abdominal pain
- Question the client of the pulsation in the abdomen.
- Check peripheral circulation, including pulses, temperature, and color.
- Observe for signs of rupture
- Note any tenderness over the abdomen.
- Monitor for abdominal distention
- Nonsurgical interventions
- Modify risk factors.
- Instruct the client regarding the procedure for monitoring BP.
- Regular HCP visits to follow the size of the aneurysm.
- Severe back or abdominal pain or fullness, soreness over the umbilicus, sudden

development of discoloration in the extremities, or a persistent elevation of BP? **notify the HCP immediately.**

Instruct the client with an aortic aneurysm to report immediately the occurrence of chest or back pain, shortness of breath, difficulty swallowing, or hoarseness.

Venous Thrombosis

- Thrombophlebitis: inflammation
- Phlebothrombosis: without inflammation
- Phlebitis: associated with invasive procedures
- Deep vein thrombophlebitis: more serious due to respiratory compromise
- Venous stasis, HF, immobility
- Hypercoagulability disorders
- Injury to the venous wall
- Post ortho and abdominal surgery
- Pregnancy
- Ulcerative colitis
- Use of contraceptives
- Certain malignancies
- Fractures, injuries of the pelvis or lower ext

Risk factors:

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Phlebitis

- Red, warm area radiating up the vein and extremity
- Pain
- Swelling

Interventions:

- Apply warm, moist soaks
- Assess for signs of complications such as tissue necrosis, infection, or pulmonary embolus.

Deep Vein Thrombosis

- Calf or groin tenderness, pain with/without swelling
- Positive Homan's sign

- Warm skin, tender to touch

Interventions:

- Bed rest
- Leg elevation 10 to 20 minutes every few hours
- AVOID using knee gatch or pillow under the knees
- Do not massage
- Ant embolic stockings (knee-knee, thigh-thigh)
- Moist compress (intermittent or continuous)
- Monitor for warmth and edema
- Measure/record circumference of thighs and calves\
- Monitor for shortness of breath and chest pain
- Thrombolytic therapy - initiated within 5 days after the onset
- Heparin therapy – monitor APTT
- warfarin when DVT resolves – monitor PT and INR

Client education:

- Hazards of anticoagulation therapy
- Recognize bleeding
- Avoid constrictive activities
- Elevate extremity 10-20 mins every few hours
- Progressive exercise program
- Inspect legs for edema, measure
- Antiembolism stockings
- Avoid smoking
- Avoid OTC
- Medic-Alert bracelet

Embolectomy

Removal of an embolus from an artery, using a catheter. Patch graft may be required to close the artery.

Preoperative Interventions:

- Obtain a baseline vascular assessment.
- Anticoagulants as prescribed.
- Thrombolytics as prescribed.
- Place a bed cradle on the bed.
- Avoid bumping or jarring the bed.
- Maintain the extremity in a slightly dependent position.

Postoperative Interventions:

- Assess cardiac, respiratory, and neurological status.
- Monitor affected extremity for color, temperature, and pulse.
- Assess sensory and motor function of the affected extremity.

- Monitor for signs and symptoms of new thrombi or emboli.
- Administer oxygen as prescribed.
- Monitor pulse oximetry.
- Monitor for complications caused by reperfusion of the artery, such as spasms and swelling of the skeletal muscles.
- Monitor for signs of swollen skeletal muscles: as edema, pain on passive movement, poor capillary refill, numbness, and muscle tenseness.
- Maintain bed rest initially, with the client in a semi-Fowler's position.
- Place a bed cradle on the bed.
- Check the incision site for bleeding or hematoma.
- Administer anticoagulants as prescribed
- Monitor laboratory values related to anticoagulant therapy.
- Instruct the client to recognize the signs and symptoms of infection and edema.
- Instruct the client to avoid prolonged sitting or crossing the legs when sitting.
- Instruct the client to elevate the legs when sitting.
- Instruct the client to wear antiembolism stockings as prescribed and how to remove and reapply the stockings.
- Instruct the client to ambulate daily.
- Instruct the client about anticoagulant therapy and the hazards associated with anticoagulants.

Vena Cava Filter and Ligation of Inferior Vena Cava

Insertion of an intracaval filter (umbrella) that partially occludes the inferior vena cava and traps emboli to prevent pulmonary emboli

Ligation: Suturing or placing clips on the inferior vena cava to prevent pulmonary emboli; done via abdominal laparotomy

Preoperative Intervention:

- D/C anticoagulant (may cause bleeding)

Postoperative interventions:

- Administer oxygen as prescribed.
- Maintain a semi-Fowler's position.
- Avoid hip flexion.
- Provide activity as prescribed.
- Check the insertion site for bleeding or hematoma and signs or symptoms of infection.
- Assess for peripheral edema.
- Maintain antiembolism stockings as prescribed.
- Monitor laboratory values related to anticoagulant therapy.
- Instruct the client to recognize the signs and symptoms of infection and edema.
- Instruct the client to avoid prolonged sitting or crossing the legs when sitting.
- Instruct the client to elevate the legs when sitting.
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Hypertension

Assessment:

- Headache, dizziness, flushing
- Anginal pain
- Intermittent claudication
- Retinal hemorrhages
- Severe headaches
- Polyuria, nocturia, protein and RBCs in urine
- Dyspea upon exertion (left-sided heart failure)
- Edema in extremities (right-sided heart failure)

Hypertension stages:

Stage one: persistent elevation of SBP between 130-139 mmHg or diastolic BP between 80-89 mmHg

Stage two: SBP of at least 140 mmHg or diastolic BP of at least 90 mmHg

Risk factors:

- Family history
- Obesity
- Physical inactivity
- ETOH
- Renal and cardiovascular disease
- Stress
- Age

Implementation

- Administer antihypertensive medications
- Education
- Lifestyle modification
- Stress reduction
- Exercise
- Weight control