

Identifying Non-Pressure Wounds - Vascular Reference Sheet

Vascular Ulcer Definition- Because both arterial and venous ulcers typically occur on the lower leg, differentiating between them can be challenging for woundcare practitioners. A careful and accurate assessment of the vascular status is essential when a resident presents with a chronic wound on the lower leg or foot. However, they have very different pathophysiologies and management pathways. cornerstone of venous ulcer management. Noninvasive diagnostic options for arterial assessment include manual palpation of pulses, Doppler examination, venous duplex ultrasonography, and plethysmography. The following information on the distinguishing characteristics of arterial and venous ulcers is to assist the practitioner in making management decisions.

Arterial

Description

Arterial ulcers result from an inadequate blood supply due to peripheral vascular disease, diabetes mellitus, trauma, or advanced age. Pain, with exercise, at night, or while one is resting, is often the most distinguishing characteristic of arterial ulcers. Determining the anklebrachial index (ABI) will give an indication of a resident's ability to heal. However, diabetic residents may have falsely elevated ABI results secondary to vessel calcification.

Characteristics

Present almost anywhere on the leg; usually distal to impaired arterial supply, between toes or tips of toes, over phalangeal heads, around lateral malleolus, or at sites subjected to trauma or rubbing of footwear.

Wound margins are even, sharply demarcated, and punched out.

Wound may be superficial or deep.

Wound beds may be pale, gray or yellow with no evidence of new tissue growth; necrosis or cellulitis may be present; commonly accompanied by dry necrotic eschar and exposed tendons.

Have minimum exudate.

Periwound tissue may appear blanched or purpuric and is often shiny and tight; loss of hair at ankle or foot.

Usually very painful; pain is often relieved by dependent leg position and aggravated by elevation.

Treatment

Arterial ulcer treatments vary, depending on the severity of the arterial disease. Non-invasive vascular tests provide the physician with the diagnostic tools to assess the potential for wound healing. Depending on the resident's condition, the physician may recommend invasive testing, endovascular therapy or bypass surgery to restore circulation to the affected leg.

The goals for arterial ulcer treatment include:

- * Providing adequate protection of the surface of the skin
- * Preventing new ulcers
- * Removing contact irritation to the existing ulcer
- * Monitoring signs and symptoms of infection that may involve the soft tissues or bone

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Venous

Description

Venous ulcers result from valve incompetence in perforating veins, a history of deep vein thrombophlebitis and thrombosis, a failed calf pump, obesity, age, or pregnancy in women with a family history of venous ulcers.

Healing is best expedited by increasing venous return, decreasing edema, appropriate compression, and proper skin and wound management.

Characteristics

Occur anywhere between the knee and the ankle, with medial and lateral malleolus the most common sites.

Usually are superficial.

Wound beds vary in appearance, frequently ruddy, beefy red, granular tissue; calcification in wound base is common; a superficial fibrinous gelatinous necrosis may occur suddenly with healthy appearing granulation tissue underneath.

Have moderate to heavy exudate.

Tend to be large with irregular margins.

Surrounding skin is characterized by hyperpigmentation, dermatitis, and lipodermatosclerosis.

May be painless; however, pain varies unpredictably and often is relieved with leg elevation.

Treatment

Venous ulcers are treated with compression of the leg to minimize edema or swelling. Compression treatments include wearing compression stockings, multilayer compression wraps, or wrapping an ACE bandage or dressing from the toes or foot to the area below the knee. The type of compression treatment prescribed is determined by the physician, based on the characteristics of the ulcer base and amount of drainage from the ulcer.

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Diabetic

Description

Neurotrophic ulcers are usually located at increased pressure points on the bottom of the feet. However, neurotrophic ulcers related to trauma can occur anywhere on the foot. They occur primarily in people with diabetes, although they can affect anyone who has an impaired sensation of the feet.

Characteristics

The base of the ulcer is variable, depending on the patient's circulation.

It may appear pink/red or brown/black.

The borders of the ulcer are punched out, while the surrounding skin is often calloused.

Neuropathy and peripheral artery disease often occur together in people who have diabetes. Nerve damage (neuropathy) in the feet can result in a loss of foot sensation and changes in the sweat-producing glands, increasing the risk of being unaware of foot calluses or cracks, injury or risk of infection. Symptoms of neuropathy include tingling, numbness, burning or pain.

Treatment

Treatment for neurotrophic ulcers includes avoiding pressure and weight-bearing on the affected leg. Regular debridement (the removal of infected tissue) is usually necessary before a neurotrophic ulcer can heal. Frequently, special shoes or orthotic devices must be worn.

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Mixed Venous / Arterial

Description

These will have signs and symptoms associated with both venous and arterial disease. Mixed arterial and venous insufficiency may be seen in approximately 7% of leg ulcers.

Characteristics

Mixed arterial/venous ulcers with an ABPI of between 0.5 - 0.8 may be treated with reduced compression of 15-25 mmHg.

Referral is also appropriate if the ulcer fails to progress to healing. Mixed ulcers with ABPI of <0.5 must not be treated with compression and require urgent vascular referral.

Treatment

Patients with peripheral arterial disease need to be educated on lifestyle modification to reduce risks associated with atherosclerotic disease. This includes education on: smoking cessation, the benefits of exercise and the importance of a well balanced low fat diet. Aspirin daily and statins to reduce cholesterol may be considered in medical therapy.

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