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Vascular Diseases Quiz – Case 38

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A 72-year-old patient presented with varices of both legs and a wound on the medial side of his left lower limb. The patient explained that during the last couple years the wound appeared at the same spot and with much difficulty it healed, only to repeat this cycle at different periods of time. It seems that the wound treatments and dressings that have been prescribed to him did not actually help. At its worst, this wound is described by the patient as a well-defined "crater" on his skin. The patient was also worried that his skin color was darker than before and the left leg seemed always swollen compared to the contralateral limb.

A. What is causing this skin discoloration and this non-healing crater-like wound?
   1. Erysipelas
   2. Eczema
   3. Venous insufficiency
   4. Skin fungus
   5. Other

B. What is the name of this type of wounds?
   1. Rash
   2. Hives
   3. Ulcer
   4. Mycosis
   5. Other

C. What is(are) the proper diagnostic tool(s) for this condition?
   1. Skin biopsy, duplex ultrasound study and venography
   2. Duplex ultrasound study, venography and intravenous ultrasound (IVUS)
   3. Skin biopsy and duplex ultrasound study
   4. Duplex ultrasound study, and either venography or IVUS
   5. None of the above.

Figure 1. Healing venous ulcer. Skin discoloration is evident.

Comment

This patient presented with varices, chronic discoloration, mild edema and a non-healing ulcer of the left lower limb caused by chronic venous insufficiency. The presence of the non-healing ulcer could potentially be the result of deep veins occlusion. In this case, the diagnosis is reached by a combination of duplex ultrasound study (US) of the superficial veins along with either IVUS or venography aiming in the study of the deep veins of the limb. Using superficial vein US scanning as the only diagnostic tool could result in missing the occlusion of the deep veins and proceeding to treating the superficial veins for insufficiency.

The role of IVUS or venography is to describe the status of the deep veins and localize the presence and the exact point of occlusion. In iliac or femoral vein occlusion, IVUS has demonstrated better results over venography. Despite the advantages of IVUS and venography (either ascending or descending), disadvantages also exist. Both methods are invasive and venography employs contrast that could lead to kidney injury in some patients. Venography also

exposes patients to radiation. Coaxial tomography (CT) and magnetic resonance imaging (MRI) could also assist in diagnosing deep vein occlusion. The risk of contrast-induced kidney injury and the use of radiation are the disadvantages of CT, but CT is useful in patients planned to undergo venous stenting of the ilio-caval system. MRI is expensive, limited to few centers and gadolinium could cause nephrosclerosis in some patients. MRI protocols for venous occlusion are also not widely used in many centers.

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Answers: *Venous insufficiency, ulcer, Duplex ultrasound study, and either venography or IVUS*