



# Case #133

NAME Educational Activities Committee

Case provided by:

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A 66-year-old man was found deceased on his couch. Autopsy revealed steatohepatitis, pulmonary emphysema, right ventricular hypertrophy and dilatation, and minimal atherosclerotic disease. The heart weighed 540 grams. Gross examination of the lower extremities revealed the findings shown in the photo.

What's the mechanism for the appearance of the legs?

- A. Arterial insufficiency causing tissue ischemia, inflammation and necrosis
- B. Venous hypertension causing capillary leakage, inflammation, and poor oxygen delivery
- C. Lymphatic obstruction leading to protein-rich edema
- D. Peripheral neuropathy causing repeated unnoticed trauma

**Answer...**

**Answer B: Venous hypertension causing capillary leakage, inflammation, and insufficient oxygen delivery (correct: 65.27%)**

Venous stasis ulcers on the legs are a result of a series of cascading complications often arising from venous hypertension. Chronic venous hypertension leads to increased hydrostatic pressure in capillaries, causing extravasation of red blood cells and proteins. This results in edema, hemosiderin deposition (hyperpigmentation), inflammation, and tissue breakdown, which explains the areas of ulceration on the back of the legs and ankles. This process also inhibits oxygenation and increases inflammation and vessel damage. These features are classic for venous stasis ulcers, making venous hypertension the most accurate explanation for the combination of swelling, discoloration, and ulceration. The autopsy also showed changes that can occur in right-sided heart failure which is commonly correlated to elevated central venous pressure.

Other responses...

## A. Arterial insufficiency causing tissue ischemia, inflammation and necrosis (incorrect: 25.23%)

Arterial ulcers are usually well-demarcated and distal (toes, lateral malleolus) without significant hyperpigmentation and swelling. Other findings in arterial insufficiency include loss of hair of distal extremities, muscle wasting, and foci of atherosclerosis/stenosis which would inhibit blood flow to the extremities

(image from <https://provascularmd.com/arterial-ulcer-treatment/>)



## C. Lymphatic obstruction leading to protein-rich edema (incorrect: 7.48%)

Lymphedema produces persistent swelling and thickened skin but does not usually cause hemosiderin deposition (which is from blood elements), hyperpigmentation, or venous-type ulcers

*(image from <https://dermnetnz.org/topics/lymphoedema>).*



## **D. Peripheral neuropathy causing repeated unnoticed trauma (incorrect: 2.02%)**

Neuropathic ulcers occur on pressure points of the feet, are often deep, punched-out, and result from loss of protective sensation. They do not produce edema, hemosiderin staining, or the lower leg ulcers typical of venous stasis. Peripheral neuropathy is commonly seen in diabetics

*(image from <https://enablepodiatry.com.au/services/foot-ulcers/>)*



# REFERENCES

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