



## IMAGE IN CARDIOLOGY

# Vasopressor-induced peripheral skin necrosis after shock



## Necrose periférica cutânea induzida por vasopressores após o choque

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A 69-year-old man with a previous history of hypertension and occlusive peripheral arterial disease underwent emergent cardiac surgery for an acute ascending aorta dissection. During the immediate postoperative period the patient was hemodynamically unstable in the first 48 hours in the intensive care unit and needed high-dose vasopressor infusions (noradrenaline and adrenaline) for hemodynamic support. After 96 hours of continuous infusion of vasopressor drugs, ecchymosis and peripheral areas of cyanosis appeared in both hands and feet. The lesions worsened progressively, leading to dry gangrene and necrosis (Figure 1A and B). Once the necrosis was delimited, the patient underwent surgical amputation of all ischemic lesions (Figures 1C and D). He subsequently required intense rehabilitation treatment to improve resilience and basic abilities.

Vasopressor drug therapy is frequently required to achieve hemodynamic stability and support the patient in life-threatening situations such as shock. Particularly in critically ill patients and when there are risk factors such as obesity, renal insufficiency or peripheral occlusive disease, continuous high-dose infusion of vasopressors can induce subcutaneous ischemia and peripheral vasoconstriction. Factors presumed to lead to skin necrosis following vasopressor use include extravasation, peripheral administration and high-dose infusion. Skin necrosis appears in different areas depending on the vasopressor agent used. While vasopressin induces skin necrosis at the extravasation sites or on the muscular parts of the limbs, noradrenaline skin necrosis typically appears on the tips of the fingers and toes, as in the case reported herein. Especially for at-risk patients, extra vigilance and close monitoring for signs of inadequate skin perfusion are required.

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**Figure 1** (A and B) Severe dry necrosis extending to both hands and feet; (C and D) postoperative result after extensive amputation.

### Ethical disclosures

**Protection of human and animal subjects.** The authors declare that the procedures followed were in accordance with the regulations of the relevant clinical research ethics committee and with those of the Code of Ethics of the World Medical Association (Declaration of Helsinki).

**Confidentiality of data.** The authors declare that they have followed the protocols of their work center on the publication of patient data.

**Right to privacy and informed consent.** The authors have obtained the written informed consent of the patients or subjects mentioned in the article. The corresponding author is in possession of this document.

### Conflicts of interest

The authors have no conflicts of interest to declare.