Spontaneous cutaneous cholesterol embolism

Nicolas Kluger¹, Sylvie Fabré², Luc Durand³, Bernard Guillot¹

1. Université Montpellier I, Service de Dermatologie, Hôpital Saint-Eloi, CHU de Montpellier, 80, avenue Augustin Fliche, F-34295 Montpellier, France
2. Université Montpellier I, Service d’Immunom-Humatologie, Hôpital Lapeyronie, CHU de Montpellier, 371 avenue du Docteur Gaston Giraud, F-34090 Montpellier, France
3. Université Montpellier I, Service d’Anatomo-pathologie, Hôpital Gui de Chauliac, CHU de Montpellier, 80 avenue Augustin Fliche, F-34295 Montpellier, France

Correspondence :
Nicolas Kluger, Service de dermatologie, Hôpital Saint-Eloi, CHU de Montpellier, 80, avenue Augustin Fliche, F-34295 Montpellier cedex 5, France.
nicolaskluger@yahoo.fr

A 68-year-old man with a history of spondylarthiritis, diabetes mellitus, and hypercholesterolemia was referred for the sudden onset of painful lesions of the lower limbs, ten days before the consultation. Examination revealed a bilateral violaceous macular rash forming open rings in a net-like pattern on the lateral side of both feet and knees, blue toes, and a necrotic lesion of the left third toe (figure 1). Peripheral pulses were present. The appearance suggested livedo reticularis. The patient had no other symptoms and denied any recent cardiovascular procedure or anticoagulant or fibrinolytic therapies. Laboratory findings revealed only mildly elevated C reactive protein (8 mg/L, N < 5 mg/L). A skin biopsy from the most infiltrated part of the livedo confirmed the diagnosis of cholesterol embolism (CE): cholesterol crystals were found within the lumens of arterioles in the deep reticular dermis, without vasculitis (figure 2). Magnetic resonance angiographic imaging showed an ulcerated atheromatous plaque on the abdominal aorta as the potential origin of embolization. Treatment with oral antiplatelet and vasodilating agents was initiated.

Figure 1
Blue toes (left). Infiltrated violaceous rash in an open ring pattern, suggestive of livedo reticularis (right)
Commentaires

Embolization of cholesterol crystals from atherosclerotic plaques to small arterioles (100-200 μm) occurs mostly in male patients, older than 60 years, with multiple risk factors for atherosclerosis, and often after invasive cardiovascular procedures or the onset of anticoagulant or fibrinolytic therapies [1–3]. However, spontaneous embolization may occur without any precipitating factor, as in our case. Cutaneous manifestations (purpura, cyanotic extremities, and acquired livedo reticularis) occur in 90% of cases [1]. Livedo results from a decreased vascular flow into the cutaneous venous plexus that becomes visible because of either increased amounts of desaturated venous blood or venodilation due to the occlusion of deep dermal small arteries. Livedo usually affects the feet and legs, but may appear on buttocks, trunk, or upper extremities. CE may spread to other organs (kidneys, eyes, central nervous system, heart, lungs, muscles, or gastrointestinal tract), depending on the location of the culprit plaque, and can lead to gangrene, acute renal failure or worsening of renal function, intestinal ischemia, or cardiac failure. Mortality is approximately 60% [1]. Findings supportive of a diagnosis of CE include an elevated erythrocyte sedimentation rate, eosinophilia, and elevated creatinine levels. Ophthalmologic examination finds asymptomatic retinal crystals in less than 25% of the cases. Cholesterol clefs in small arteries or arterioles of the biopsy from an affected organ (skin, kidney, muscle) confirm the diagnosis [1–3]. Sudden onset of livedo reticularis and/or blue toes with or without a precipitating factor indicates the need for a deep skin biopsy including the deep dermis and hypodermis, to search for cholesterol crystals. Physicians should choose to biopsy the most recent and/or infiltrated/necrotic lesion [4].

Conflicts of interest : none.

References