

## Cholesterol Crystal Embolism in a Patient with Suspected Vasculitis

ISMAIL SARI, MD, Specialist of Internal Medicine, Department of Internal Medicine, Division of Rheumatology; UGUR PABUCCUOGLU, MD, Professor of Pathology, Department of Pathology; NURULLAH AKKOC, MD, Professor of Internal Medicine, Department of Internal Medicine, Division of Rheumatology, Dokuz Eylul University School of Medicine, Izmir, Turkey. Address reprint requests to Dr. N. Akkoc, Dokuz Eylul Universitesi Tip Fakultesi, Ic Hastaliklari AD, Romatoloji BD, 35340 Inciralti, Izmir, Turkey. E-mail: nurullah.akkoc@deu.edu.tr

A 66-year-old woman with impaired renal function and multiple areas of necrotic painful ulcerations on her lower extremities was admitted to our department. She had undergone angiography 50 days prior to admission because of unstable angina pectoris. Three days after this procedure she developed erythematous skin lesions on the lower extremities, and her initial creatinine of 0.8 mg/dl increased to 3.2 mg/dl. A skin

biopsy had been performed that led to a diagnosis of livedoid vasculitis, and she started taking oral prednisolone. Despite this therapy her skin lesions progressed to large necrotic ulcers and she was referred to our department. Her medications included metoprolol, candesartan, atorvastatin, acetylsalicylic acid, and clopidogrel. On examination she had multiple painful necrotic areas on gluteal regions and thighs



Figure 1. Multiple necrotic areas due to cholesterol crystal embolism.

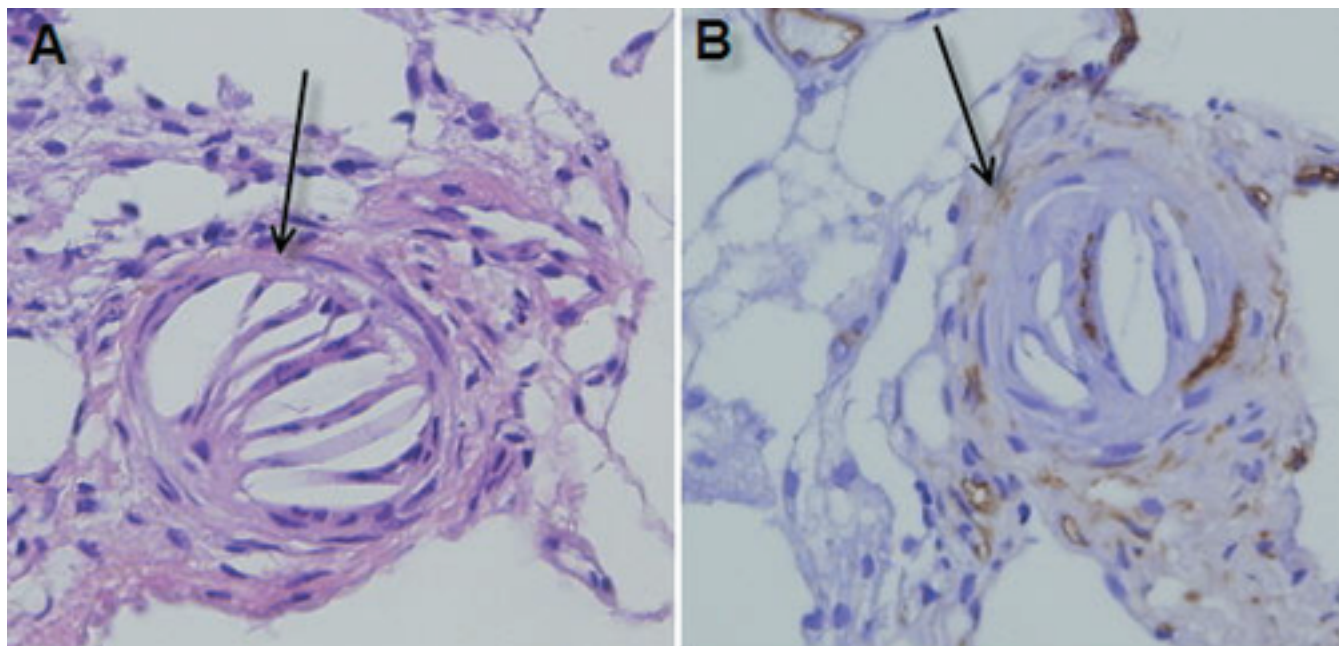


Figure 2. Cholesterol clefts within arterioles. Both arrows indicate multiple cholesterol clefts within arterioles. A. H&E, magnification  $\times 400$ ; B. Vessels are immunohistochemically stained for antibodies to CD34; magnification  $\times 400$ .

(Figure 1) and blue discoloration of the right and left fifth toes. Peripheral pulses were normal. Laboratory investigations revealed leukocytosis ( $15.6 \times 10^9/l$ ) with marked neutrophilia but no eosinophilia, thrombocytosis ( $520 \times 10^9/l$ ), elevated erythrocyte sedimentation rate (58 mm/h), and increased C-reactive protein (27 mg/l). Serum creatinine was 2.7 mg/dl. Urinalysis was normal. On immunological testing, she was positive for perinuclear antineutrophil cytoplasmic antibodies. A repeated skin biopsy revealed cholesterol clefts within arterioles (Figure 2), and cholesterol crystal embolism

was diagnosed. She was maintained on prednisolone and atorvastatin. On the 10th day of hospitalization she developed right-side chest pain, pink frothy sputum, dyspnea, tachypnea and tachycardia. Blood gases showed hypoxia and hypocapnia. A ventilation/perfusion scan revealed perfusion defects in the right lower lobe with normal ventilation. A venous Doppler ultrasonography study of the legs yielded normal findings. Pulmonary embolism probably due to cholesterol crystal embolism was diagnosed. She died 2 days after the pulmonary embolism. An autopsy could not be performed.