Upper limb arterial calcification has not been addressed in patients without end-stage renal disease and diabetes mellitus. An 88-year-old woman with a 15-year history of rheumatoid arthritis receiving steroid therapy and anti-tumor necrosis factor-α antibody was referred to the present institution for the diagnosis and treatment of gangrene in the left lower leg. Although popliteal and brachial artery pulses were present, foot and radial pulses were absent, suggesting crural and forearm artery occlusive disease. X-ray imaging showed extensively diffuse calcification in the radial and ulnar arteries as well as in the crural artery (Figure). On laboratory testing, lupus anticoagulant (LA) was positive, with dilute Russell’s viper venom time (1.43, normal range <1.3), positive anticardiolipin antibodies (IgG) (10 U/mL, normal range <10 U/mL), and positive anti-β2-glycoprotein I antibodies (3.7 U/mL, normal range <3.5 U/mL). Furthermore, the cross-mixing test exhibited an inhibitor (LA) pattern. Other biochemical, immunological and serological tests were unremarkable without evidence of end-stage renal disease (estimated glomerular filtration rate 34 mL/min/1.73 m², serum creatinine 1.16 mg/dL) or diabetes mellitus. Given clinical features such as skin infarction, sensory and motor disturbance and exudative pleuritis in this patient, multidisciplinary discussion led to a diagnosis of peripheral gangrene due to rheumatoid vasculitis, complicated by antiphospholipid syndrome.
Peripheral gangrene encompasses a broad spectrum of disorders including atherosclerosis, thromboembolism, connective tissue disease, vasculitis, thrombophilia, Buerger’s disease, Raynaud’s disease, and drug-induced vasospasm, blood dyscrasias, myeloproliferative disorders, and sepsis. Upper limb arterial calcification is uncommon compared with lower limb arterial calcification, but is an indicator of non-atherosclerotic peripheral artery disease, such as vasculitis, in patients without end-stage renal disease and diabetes mellitus. According to the literature, high levels of autoantibodies and inflammatory cytokines, as seen in rheumatoid arthritis, can change vascular cellular characteristics, involving substantial biological modifications ranging from genetic alterations to a metamorphosis. As a result, clinical or subclinical vasculitis can present with arterial calcification. Therefore, in the present patient with longstanding rheumatoid arthritis, the extensive calcification in the forearm artery as well as in the crural artery was indicative of a systemic vasculitis such as rheumatoid vasculitis. This report illustrates the important implications of upper limb arterial disorders, even in octogenarian patients.

Disclosures

The authors declare no conflict of interest.

References