HIV-associated vasculitis. Part II: histologic and angiographic diagnostic reconfirmation after an uncontrolled HIV infection and fatal outcome

Sirs,

While small-vessel vasculitis associated with probable aetiology are mainly associated with hepatitis C virus (HCV) infection (1), secondary vasculitis involving medium-sized vessels include hepatitis B virus (HBV)- and human immunodeficiency virus (HIV)-associated vasculitis (2). Mesenteric and renal microaneurysms are typical lesions of polyarteritis nodosa (PAN) and secondary vasculitis that can regress after appropriate treatment (3, 4).

We recently reported the case of a 42-year-old man with a long-lasting active HIV infection (with severe CD4+ cell depletion and high viral load) presenting with recurrent episodes of abdominal pain, finally diagnosed with HIV-associated vasculitis (3). Abdominal CT-angiography showed multiple microaneurysms, stenoses and occlusions of intrarenal arteries, irregular lesions of mesenteric arteries, fusiform dilatations of hepatic branches, and splenic and kidney infarctions. After high doses of glucocorticoids and antiretroviral therapy, the patient experienced a good clinical and serologic response. Mesenteric ischaemia led to subsequent surgical small intestine resections with histopathology confirming occlusive vasculopathy changes without signs of active vasculitis. A CT-angiography sixteen months later showed persistence of fusiform dilatations of intrahepatic artery branches but complete resolution of intrarenal microaneurysms. The patient remained stable thereafter.

In the extended study after long-term disease remission, we report a HIV-associated vasculitis relapse with concomitant increase in viral load.

Three years after the initial diagnosis of HIV-associated vasculitis (age 45), and after six months of abandonment of antiretroviral drugs, the patient sought medical attention because of progressive abdominal pain. Laboratory results revealed high acute phase reactants levels, low $CD4^+$ cell counts (39 cells/mm^3) and increased viral load (8,020 copies/mL). Screening for opportunist infections was negative. An abdominal CT-angiography showed dilations and stenoses along the right hepatic artery and multiple and prominent vascular aneurysms of the hepatic and renal arteries, with new renal ischaemic lesions. Aneurysms of the inferior mesenteric and left lumbar arteries were also detected. Mesenteric arteries persisted with unchanged chronic stenotic lesions (Fig. 1). An ultrasound for a palpable mass of right underarm area revealed a right axillary artery fusiform aneurism. After diagnosing a vasculitic flare secondary to an uncontrolled HIV infection, high doses of glucocorticoids and antiretroviral therapy were again started with an initial viral load reduction (99 copies/mL). However, the patient presented with poor pain control caused by intestinal ischaemia and ileal perforation requiring new (25 cm) ileocolic resection and jejunostomy. The patient died four months after the initial visit because of a severe intra-abdominal sepsis with multi-organ dysfunction. Histopathological examination of the resected intestine

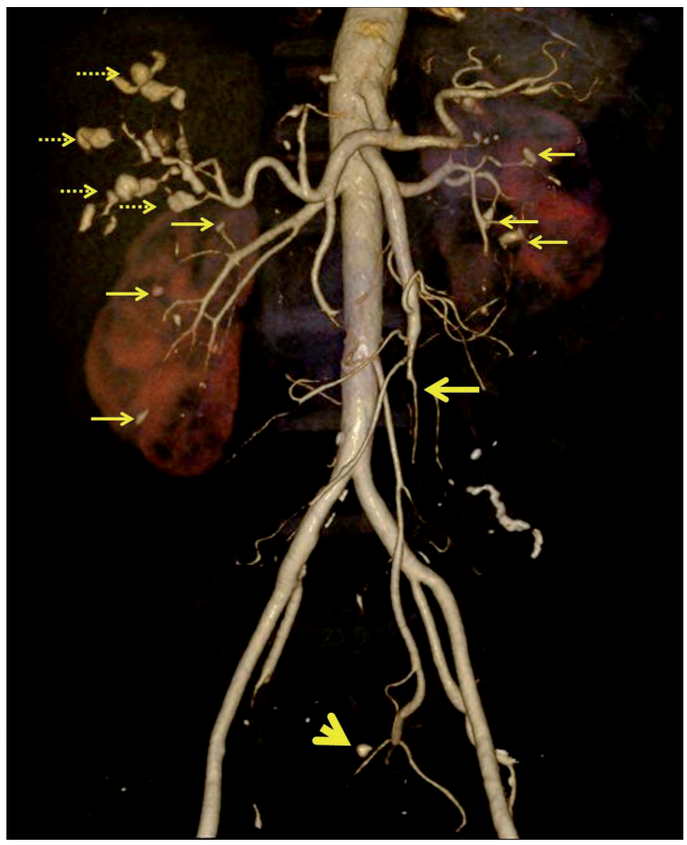

Fig. 1. 3D reconstruction of a CT angiography of the abdominal aorta and its main branches. Multiple and prominent vascular aneurysms of the hepatic (dashed arrows) and bilateral intrarenal arteries (narrow long arrows). A well-defined aneurysm can be seen involving the inferior mesenteric artery (short arrow). The superior mesenteric artery persisted with previous stenotic lesions (wide long arrow).

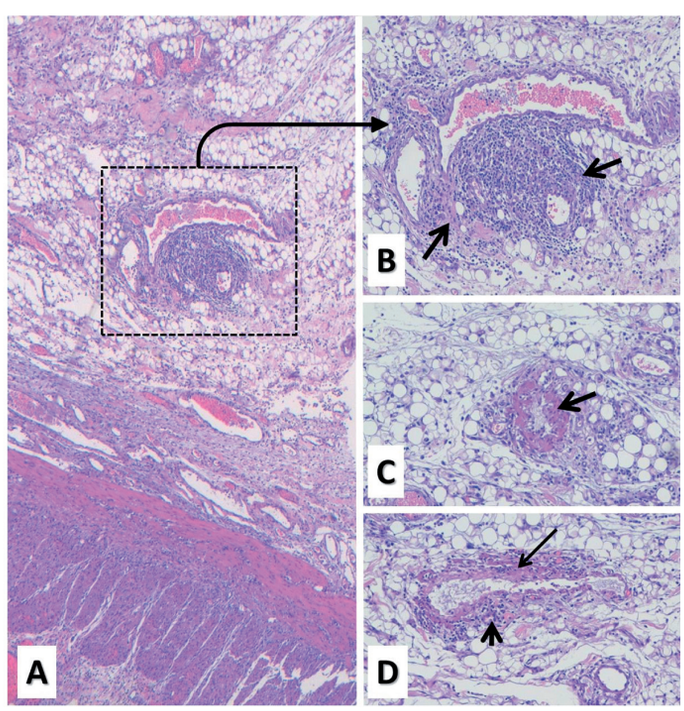

Fig. 2. Histology of vascular changes in the resected intestinal segment.
A: A small artery of the ileal serosa shows a lymphocytic vasculitis with destruction of the vessel wall.
B: Dense lymphocytic infiltrates (arrows) are seen in detail.
C-**D**: Necrotising vasculitis of different small-sized arteries with lymphocytic infiltrates (short arrow) and fibrinoid necrosis (long arrows).
Original magnification: x40 (**A**); x100 (**B**-**C**-**D**).

showed transmural necrotic changes and signs of active vasculitis involving small arteries (Fig. 2).

In HIV-associated vasculitis, the deposit on the vessel wall of immunoglobulins, complement and immune complexes directed against the HIV virus itself or other opportunistic infections, together with a direct role of the viral invasion of the vascular cells or an inflammatory reaction to HIV particles have been considered to play a role in its pathogenesis (5, 6).

With this extended report, the effect of an active HIV infection on the development of HIV-associated vasculitis has been evidenced on two separate occasions in the same patient. The initial regression of vascular aneurysms occurred after starting antiretroviral and glucocorticoid therapy and was accompanied by an optimal viral control (3). However, a new viral load increase was followed by a more severe and widespread vasculitis, histologically proved in the small intestine and angiographically involving hepatic, renal, inferior and superior mesenteric, lumbar and axillary arteries.

As a conclusion, HIV-associated vasculitis is a secondary systemic vasculitis in which disease remission relies in controlling HIV infection. Once viral load is low or undetectable, the risk of active vasculitis is almost absent and previous aneurysms may also regress. However, when disease is in remission, the lack of control of HIV infection may lead to a vasculitis relapse with severe or fatal consequences.

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