A 32-year-old man infected with HIV presented to the emergency department of our hospital reporting pain, coldness, paresthesias, and cyanosis in both feet and hands. The symptoms had started 3 days before, with lower extremities claudication at 200 m, which progressed to rest pain the day of admission; it was worse on the right foot. He was on chronic antiretroviral therapy with 300 mg QID tenofovir (Viread), 300 mg BID abacavir (Ziagen), and two 200/50 mg BID lopinavir/ritonavir (Kaletra). His CD4 cell count was 245 cells/mm and his HIV viral load was 45 copies/mL. When directly interviewed, the patient remembered that he had taken a single dose of ergotamine (1 mg) for migraine 24 hours before the onset of symptoms. He denied any recent drug intake. On examination, his 4 extremities were cold, cyanotic, and pulseless (Figure 1A). Only femoral pulses were weakly palpable. Plethysmography revealed bilateral multilevel ischemia, with severe proximal disease and flat curves at popliteal and distal levels (Figure 2A). Lower limb computed tomographic angiography showed diffuse arterial narrowing from the external iliac arteries to the distal, consistent with severe and diffuse spasm (Figure 3A). A similar pattern was seen in the upper extremities.

Antiretroviral drugs were withdrawn, and the patient was started on therapeutic intravenous administration of heparin, morphine, and sodium nitroprusside infusion, with no evident response. An arteriography was then performed, confirming the presence of diffuse arterial spasm, with no images of thrombosis (Figure 4). A selective intra-arterial prostaglandin E1 (Prostin) injection was done, with partial improvement of the right-leg plethysmography curves and foot perfusion. Therefore, treatment with intravenously administered iloprost (up to 2.0 ng · kg\(^{-1} \cdot \text{min}^{-1}\)), a synthetic prostaglandin I\(_2\) analog, was started in association with orally administered sildenafil (25 mg TID). The patient’s condition improved dramatically, with progressive restoration of pulses in the following 24 hours (Figure 1B). The results of a repeat computed tomographic angiography after 3 days of therapy were normal (Figure 3B), and the patient was discharged in good condition 5 days after admission.

Vasospasm is a rare but well recognized complication of ergot alkaloid agents. The term St. Anthony’s fire was used in the Middle Ages for referring to ergotamine intoxication due to the consumption of grain infected with the fungus *Claviceps purpurea*, with limb necrosis and burning pain. Ergotism mostly affects the lower extremities, but involvement of the carotid, coronary, mesenteric, and renal arteries has also been reported.\(^1\) Toxicity may occur with ergotamine overdose or with low doses in association with drugs that inhibit its hepatic metabolism. Protease inhibitors used for HIV treatment, such as ritonavir and lopina-
vir, are potent inhibitors of cytochrome P-450 isoenzymes, mainly CYP3A4, which is responsible for the metabolism of ergot.\textsuperscript{2} Severe ergotism has been described in patients taking ritonavir, even after a single dose of ergotamine.\textsuperscript{3} The optimum therapy has not been established. Pharmacological interventions include nitroprusside, nitroglycerin, prazosin, calcium channel blockers, heparin, intravenously administered iloprost, and intra-arterial infusion of prostaglandin E1. In severe forms refractory to pharmacological treatment, intra-arterial balloon dilatation or surgical sympathectomy can be effective.\textsuperscript{4} Early and aggressive treatment of arterial spasm prevents limb amputations.

**Figure 2.** Upper and lower extremities plethysmography. A, On admission, bilateral multilevel upper and lower extremities ischemia with flat curves at distal levels. B, Normal perfusion in upper and lower extremities after treatment.

Disclosures

None.

References

Figure 3. Lower extremities computed tomographic arteriogram before (CTA pre) and after (CTA post) treatment. On CTA pre (left A and B), maximum intensity projection images show diffuse narrowing of the right external iliac (left A, arrow 1), superficial femoral (A2), and popliteal (B3) arteries. Arrow B4 shows absence of right leg arteries. Similar findings are seen on the left side. On CTA post (right A and B): normal CTA with complete resolution of vasospasm in both lower extremities arteries (right B, arrow 5).

Figure 4. Lower extremities angiography. A, Distal abdominal aorta, common iliac, and hypogastric arteries are normal; both external iliac arteries are hardly seen, with diffuse narrowing of their lumen (1). B, Spasm is also present in right femoral territory, especially on distal superficial femoral artery. C, Popliteal narrowing is worse at the level of its bifurcation (3); no distal leg arteries are seen. D, A 4F Glide Catheter is placed on the proximal posterior tibial artery for selective prostaglandin injection. Completion angiogram shows contrast in distal posterior tibial artery not seen before.
Four-Limb Acute Ischemia Induced by Ergotamine in an AIDS Patient Treated With Protease Inhibitors

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