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Visual Diagnosis in Emergency Medicine

MORE THAN SKIN DEEP: A CASE OF CATASTROPHIC ANTIPHOSPHOLIPID SYNDROME

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INTRODUCTION

We report the case of a 71-year-old woman who presented to the emergency department with discoloration of her left leg and nose. The discoloration proved to be the cutaneous manifestation of catastrophic antiphospholipid syndrome (CAPS), a rare and frequently lethal form of this hypercoagulable state.

CASE REPORT

A 71-year-old woman with a medical history significant only for a 50-pack per year smoking history presented with a 4-day history of discoloration of her nose and left leg that was associated with exertional dyspnea and bilateral lower extremity swelling. Her intake vitals were as follows: temperature of 36.3°C, blood pressure 104/61 mm Hg, heart rate 81 beats/min, respiratory rate 18 breaths/min, and oxygen saturation of 96% on room air. Her physical examination was significant for necrotic tissue on the nose, confluent ecchymosis in the left lower extremity, a few small patches of ecchymosis on the right lower extremity (Figure 1), splinter hemorrhages in the nails of both hands, and a presumed new heart murmur. Point of care ultrasonography revealed pulmonary edema and a thickened mitral valve, raising the concern for endocarditis. Concomitantly, laboratory results demonstrated platelets = 10 k/μL (normal 150–400 k/μL), fibrinogen = 133 mg/dL (normal 310–510 mg/dL), d-dimer = 13,721 ng/mL (normal <230 ng/mL), and an international normalized ratio of 1.52 (normal 0.88–1.16), consistent with disseminated intravascular coagulopathy. A peripheral smear showed teardrop red blood cells and schistocytes. The patient was started empirically on broad-spectrum antibiotics, anticoagulated with heparin, and admitted to the cardiac care unit with a tentative diagnosis of disseminated intravascular coagulopathy from endocarditis-related sepsis and embolic phenomena.

To assess further for embolic phenomena, computed tomography scans of the chest, abdomen, and pelvis were obtained. These revealed bilateral multifocal pulmonary infiltrates, an incidental right adnexal mass with ipsilateral pelvic adenopathy, and right popliteal vein thrombosis. On further questioning, the patient reported a recent 40-lb weight loss and several episodes of vaginal bleeding but denied any infectious symptoms. This combination of features, suspicious for malignancy and disseminated thrombosis, prompted a laboratory investigation for a paraneoplastic hypercoagulability, while endocarditis was now felt to be unlikely. The patient was started empirically on pulse-dose steroids, followed by plasma exchange therapy because she developed fluctuating mental status. Laboratory values

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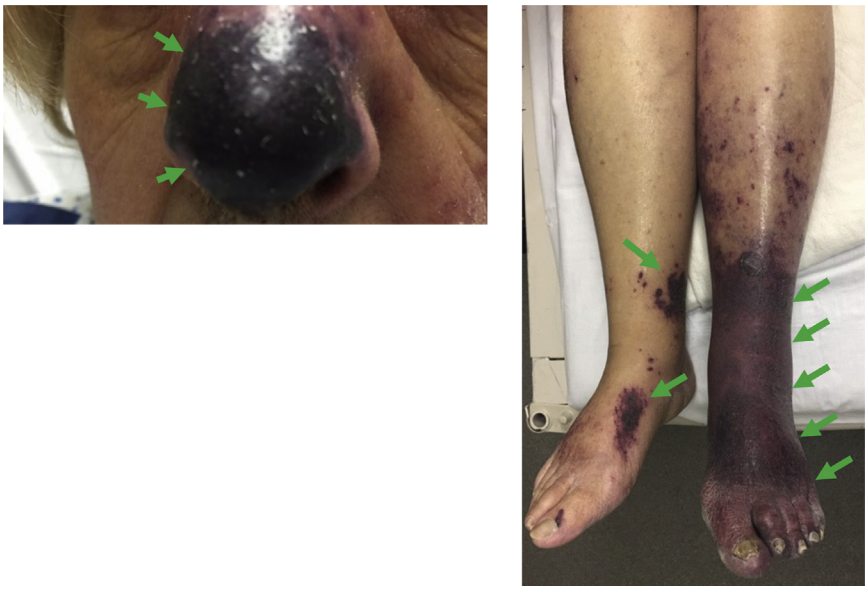

Figure 1. Extensive ecchymosis of the nose and bilateral lower extremities.

revealed a strongly positive phosphatidylserine IgM (>100 U/mL; normal <25 U/mL), consistent with probable catastrophic antiphospholipid syndrome.

Clinical and hematologic parameters gradually improved with these therapies. An inguinal lymph node biopsy specimen was obtained and was positive for adenocarcinoma of Mullerian origin, most appropriate for neoadjuvant chemotherapy. Unfortunately, the patient then deteriorated abruptly, developing a worsening mental status, atrial fibrillation with rapid ventricular response, and respiratory distress from pulmonary edema. Her health care proxy stated that the patient was do not resuscitate/do not intubate, and the patient died on hospital day 40.

DISCUSSION

APS is characterized by venous or arterial thrombotic predilection in association with the presence of antiphospholipid antibodies (aPLs) (1). In most cases, this manifests with isolated thrombotic events. However, roughly 1% of patients develop CAPS, which involves the acute onset of disseminated thromboses. The diagnostic criteria for definite CAPS requires: 1) involvement of ≥3 organ systems, 2) development of manifestations in <1 week, 3) histologic evidence of intravascular thrombosis, and 4) the presence of aPLs (2). However, the guidelines allow for considerable flexibility because patients can be gravely ill with the involvement of 2 organ systems, histology via tissue biopsy is often not readily available, and many patients die before the requisite time has passed for retesting of aPLs to demonstrate sustained presence. Therefore, less restrictive criteria exist for a diagnosis of probable CAPS. Moreover, some authors note that CAPS is merely the most extreme manifestation on the aPL spectrum (3). They suggest that some patients not meeting the definite or probable criteria are nonetheless ill enough to warrant a diagnosis of a "CAPS-like" disease and often require equally aggressive treatment.

The differential diagnosis includes other causes of multisystem microangiopathy, such as hemolytic uremic syndrome, thrombotic thrombocytopenic purpura, disseminated intravascular coagulopathy, and heparin-induced thrombocytopenia. Manifestations of CAPS can occur in virtually any organ system, but renal, pulmonary, neurologic, cardiac, and dermatologic findings are most common (4). Cutaneous findings in APS are highly variable and include livedo reticularis, digital necrosis, splinter hemorrhages, and skin ulceration, among others (5,6). Livedo reticularis is by far the most common skin finding, and among the dermatologic signs is most likely to be the patient's principal presenting symptom (6,7). In fact, in a large case series, livedo reticularis was the third most common presenting manifestation among all patients with APS (7). In this regard, the case we present is somewhat unusual—the extensive cutaneous necrosis seen here is one of the rarer skin findings in APS (6,8).

No randomized trials exist regarding the optimal treatment of CAPS because of the rarity of the disease, but large case series provide a framework for management. The greatest recovery rates are observed with combined therapy using anticoagulation, corticosteroids, and plasma exchange, ideally instituted as early as possible

in the disease process. This strategy is credited with decreasing CAPS mortality from roughly 50% to 33% (9). From the emergency physician's perspective, the initiation of anticoagulation and corticosteroids in consultation with hematology and rheumatology are critical first steps, while admission to an intensive care unit is appropriate given the likelihood of multiorgan dysfunction.

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