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Paraneoplastic acral vascular syndrome



Figure 1. Acrocyanosis of the left hallux with an acral distribution.

Paraneoplastic acral vascular syndrome is associated mainly with adenocarcinoma and metastatic disease

A 66-YEAR-OLD WOMAN PRESENTED to the emergency room with pain and bluish discoloration of her left great toe for the past 2 days. She had no history of trauma to the toe or of peripheral vascular disease. She also complained of intermittent abdominal pain for the last 5 months and unintentional weight loss of 8 pounds.

On examination, the left hallux was bluish-purple (**Figure 1**) with an acral distribution (ie, more affected distally). The other extremities were not affected. There was no difference in temperature between her feet, and distal sensation and peripheral pulses were intact.

Vascular disease was suspected, and the patient was started on systemic anticoagulation.

However, chest computed tomography (CT) and conventional angiography showed no aortic disease; vessels were of normal caliber, and no distal filling defects were noted.

A routine evaluation with complete blood cell count, peripheral smear, renal function testing, and urinalysis with eosinophil smear was also unrevealing. An extensive investigation followed, including serum complement testing, assays for antinuclear, antineutrophil cytoplasmic, and anti-Sjögren syndrome A and B antibodies, cryoglobulin testing, and hepatitis B and C virus serology, as well as screening for syphilis and lupus anticoagulant, anticardiolipin, and beta-2 glycoprotein antibodies. The results for all these tests were also unremarkable.

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TABLE 1

Paraneoplastic dermatoses associated with internal malignancy

Dermatoses	Malignancies
Acquired ichthyosis Diffuse rhomboid scales on trunk and extensor regions	Hodgkin disease, lymphoproliferative disorders
Acrokeratosis paraneoplastica Erythematous desquamating eruption with plaques in acral areas	Squamous cell carcinoma of the upper aerodigestive tract
Leser-Trélat syndrome Sudden appearance of multiple seborrheic keratoses	Gastrointestinal adenocarcinoma; multiple carcinomas and lymphomas
Necrolytic migratory erythema Migratory erythematous papules or macules in a ringlike pattern	Glucagonoma
Acanthosis palmaris^a Velvety palms with exaggerated skin ridges	Lung and gastric carcinoma

^a Also known as "tripe" palms, as the palms were thought to resemble tripe, a dish made from the rugose foregut of cattle.

Based on information from references 5 and 6.

Results of coagulation testing and venous duplex ultrasonography of the legs were normal, and electrocardiography and echocardiography showed no signs of valvular vegetation, myxoma, or patent foramen ovale.

Given our patient's age, abdominal pain, and weight loss but negative vascular evaluation, we considered a diagnosis of paraneoplastic acral vascular syndrome. Abdominal CT revealed a tumor of the pancreatic head with multiple liver lesions, and cytologic study confirmed pancreatic adenocarcinoma.

DISTANT MARKERS OF MALIGNANCY

Causes of blue toe syndrome to consider in the differential diagnosis include arterial thromboembolism, vasoconstrictive drug use or disorders, vasculitis, and venous thrombosis.¹ These are common and deserve prompt investigation. However, if they are ruled out, a peripheral acral vascular syndrome should be considered. These syndromes present as Raynaud phenomenon, gangrene, or acrocyanosis of the fingers or toes with underlying neoplasia. Unusual features such as sudden onset in a patient over age 50, an acral distribution, and associated symptoms such as unrelated pain and weight loss should spark concern for underlying malignancy.

Paraneoplastic syndromes are defined as signs and symptoms that present distant from the site of malignancy. Dermatoses as markers of internal malignancy are well-established but perplexing clinical entities whose exact causes remain unknown.²

Paraneoplastic acral vascular syndrome is associated with certain cancers, predominantly adenocarcinoma and metastatic disease.³ As in our patient, it usually precedes or is present at the time of diagnosis of internal malignancy. Paraneoplastic dermatosis as the presenting sign of pancreatic cancer is uncommon, and a search of the literature found 1 case report of acral vascular syndrome.⁴ Paraneoplastic dermatoses also include necrolytic migratory erythema, Leser-Trélat syndrome, and acrokeratosis paraneoplastica (Table 1).

Paraneoplastic dermatoses are well recognized as harbingers of metastatic disease.^{5,6} Our patient's story demonstrates need for a thorough diagnostic investigation.

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