

# Pancreatic acinar cell carcinoma–induced panniculitis



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**P**ancreatic cancer is the fourth most common cause of cancer-related death among men and women in the United States. Every year, an estimated 43,090 people die of pancreatic cancer nationally.<sup>1</sup> Pancreatic acinar cell carcinoma (ACC) is a rare form of pancreatic cancer that accounts for 1% to 2% of all pancreatic neoplasms.<sup>2</sup> ACCs are generally asymptomatic and may be discovered incidentally when patients undergo work-up for general complaints such as abdominal pain. In the literature, investigators have reported a variety of systemic presentations of ACC. Herein, we report a patient with painful lower extremity nodules associated with pancreatic ACC.

## CASE REPORT

A 49-year-old woman with a history of metastatic pancreatic ACC was referred to our department for evaluation of persistent, painful, subcutaneous nodules on the lower legs. She did not recall fever, chills, nausea, vomiting, or other signs of systemic illness. Before the onset of the nodules, she had been adherent to her ACC treatment, which included gemcitabine and paclitaxel.

The patient's pancreatic cancer was detected after the finding of elevated liver enzymes 18 months before presentation in the dermatology clinic. She received an abdominal computed tomography scan and was found to have pancreatic and hepatic lesions, which were biopsy proven to be pancreatic ACC. The patient had stable disease on follow-up imaging until 10 months later, when she presented with dysmenorrhea and was found to have metastases to the pelvis. Given advancing metastasis, worsening renal function, and development of malignant ascites over the next 5 to 6 months, she decided to

### Abbreviation used:

ACC: acinar cell carcinoma

start chemotherapy; gemcitabine and paclitaxel were administered. The patient noticed the lower extremity nodules 1 week after starting chemotherapy.

The lesions began on her right lower extremity as asymptomatic small red nodules. They were initially thought to be bug bites. However, over the week, the nodules became larger and painful. Similar nodules appeared on her left lower extremity as well. The nodules were initially thought to be cellulitis by her primary care provider and she was prescribed a 1-week course of cephalexin. One week later, she did not exhibit any improvement, and she was switched to trimethoprim/sulfamethoxazole by her oncologist. Owing to a poor response to the antibiotics, she was admitted to the hospital where she received doses of clindamycin, vancomycin, and cefepime. The patient was discharged with clindamycin but was later switched to doxycycline when examination findings were concerning for persistent cellulitis. After receiving multiple treatments for cellulitis in the inpatient and outpatient setting with minimal improvement, the patient was sent for a dermatology consultation.

On examination in the dermatology clinic, the patient was found to have numerous tender 2- to 3-cm subcutaneous nodules with overlying erythema, which on the right lower extremity became confluent to form a homogenous pink plaque with poorly demarcated borders (Fig 1, A). Clinically, the patient's nodules were most suggestive of panniculitis. The differential diagnosis included pancreatic

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**Fig 1.** **A**, Indurated erythematous to violaceous nodule on right shin. **B**, Several erythematous ulcers with peripheral induration and active yellow to white discharge and tenderness to touch within a large violaceous plaque on right shin.

panniculitis associated with metastatic acinar cell carcinoma, erythema nodosum, drug-induced panniculitis, lupus panniculitis, and nodular vasculitis. Four-millimeter punch biopsies were performed on the superior and inferior right shin. Histopathology of both specimens showed adipocyte necrosis within fat globules (Fig 2).

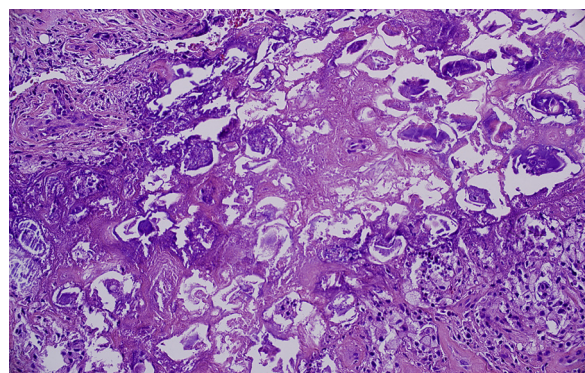
Laboratory studies were significant for an elevated lipase level (810 U/L; reference range, 13-51 U/L). The patient was treated with clobetasol 0.05% ointment twice daily and reported some symptomatic relief. However, she understood that definitive treatment of the panniculitis would require treatment of the underlying pancreatic malignancy.

At a follow-up appointment 4 months later, the patient complained of lower extremity bilateral joint pain, joint swelling and drainage from the nodules on the right shin (Fig 1, B), and elevated lipase levels (1532 U/L). The exudate was thought to be liquefactive necrosis. Nevertheless, it was cultured to rule out a secondary infection; no growth was noted. Additionally, the patient complained of waxing and waning joint pain, more prominent in the ankles. The patient's pancreatic ACC continued to be treated with gemcitabine and oxaliplatin, and significant progression was observed.

## DISCUSSION

Pancreatic panniculitis is a rare dermatologic disease presenting in 0.3% to 1% of patients with pancreatic disease.<sup>3</sup> There is limited literature examining the dermatologic manifestations of pancreatic cancer. We report a patient with pancreatic panniculitis owing to a rare form of pancreatic cancer, ACC, which represents 1% to 2% of pancreatic neoplasms.

Patients with pancreatic panniculitis generally present with persistent, disseminated, tender,



**Fig 2.** Lobular panniculitis with saponification and enzymatic necrosis of fat cells (ghost cell) with some degree of calcification.

erythematous nodules on the upper and lower extremities. The clinical appearance of pancreatic panniculitis is nonspecific, and the differential diagnosis can be broad. Unlike other types of panniculitis, nodules related to underlying pancreatic pathology may undergo liquefactive necrosis, spontaneously ulcerate, and drain a sterile, brown, viscous substance, as was seen in this patient.<sup>4</sup> Biopsy is required for the diagnosis and often shows pathognomonic findings of lobular fat necrosis, anucleated adipocytes (ghost cells), and leukocytic inflammatory infiltrate surrounding the necrotic adipocytes.<sup>5</sup>

This patient also reported new onset of lower extremity joint pain and swelling. The literature on this topic suggests that the skin lesions may also be accompanied by joint pain and swelling, in which the arthropathy tends to primarily affect the knees and ankles. Investigators suggest the new-onset arthritis in patients with pancreatic pathologic conditions may relate to lipase-mediated periarticular fat

necrosis.<sup>5,6</sup> In this patient, the clinical findings of pancreatic pathology, panniculitis, and polyarthritis together favor a mild form of the rarely reported syndrome, pancreatic disease, panniculitis polyarthritis syndrome.<sup>7</sup>

Pancreatic panniculitis is a difficult-to-treat problem because it requires the treatment of the underlying pancreatic process. In some cases of pancreatic neoplasms, removing the malignancy results in resolution of the panniculitis.<sup>8</sup> In patients with a non-resectable malignancy, it is recommended they be treated with chemotherapeutics, which can result in symptom reduction.<sup>9</sup> In this patient, the nodules worsened along with her metastatic pancreatic ACC and increasing levels of lipase.

We report on a patient with pancreatic panniculitis related to a rare form of pancreatic cancer. The erythematous, tender nodules can be difficult to diagnose and can be mistaken for cellulitis or arthropod bites. Awareness of this entity, although rare, is important in patients with lower extremity nodules and acinar cell carcinoma.

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