

Firm Plaques and Nodules Over the Body

What's the diagnosis?



A 52-year-old woman presented with painful erythematous nodules of 2 weeks' duration that began as a single lesion on the left shin and spread rapidly to involve the trunk, arms, and legs. A punch biopsy was performed. Pertinent history included a recent hospitalization for drainage of malignant ascites secondary to metastatic ovarian cancer. The lesions did not drain and were not pruritic. The patient did not have a history of fever, night sweats, nausea, headache, neurologic change, muscle aching, or recent weight loss.

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The authors report no conflict of interest.

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The Diagnosis: Pancreatic Panniculitis

The biopsy specimen revealed necrosis of the panniculus with “ghost” cells (Figure). Calcification was encountered. Changes of vasculitis were not identified and fungal organisms were not noted. The histopathologic findings supported a diagnosis of pancreatic panniculitis.

Pancreatic panniculitis has been associated with pancreatitis, pancreatic carcinoma, pancreatic pseudocysts, congenital abnormalities of the pancreas, and drug-induced pancreatitis.¹ Skin lesions may herald a diagnosis of pancreatic disease in an outpatient and should prompt thorough clinical evaluation when encountered in an outpatient setting. Our patient first developed tender nodules on the left shin 2 to 3 weeks prior to presentation. She reported that her initial nodules were flesh colored but then became erythematous and tender over 1 week’s time. The patient’s history was remarkable for ovarian cancer. She had been hospitalized 2 weeks prior to presentation for abdominal pain and ascites. Imaging studies revealed a cystic lesion in the head of the pancreas. The pancreas was

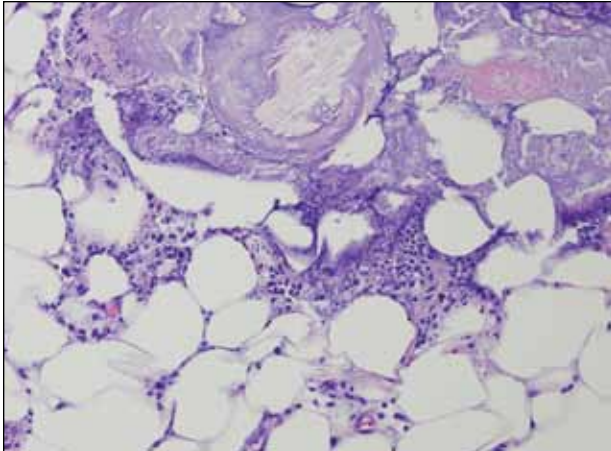
traumatized during a peritoneal tap. Her nodules developed shortly thereafter and were distributed on the arms, legs, back, and abdomen.

Pancreatic tumors or inflammation are thought to trigger pancreatic panniculitis by releasing enzymes. Pancreatic enzymes such as lipase are thought to play a role in the development of pancreatic panniculitis by entering the vascular system and leading to fat necrosis.^{2,3} Biopsy reveals necrosis of adipocytes in the center of fat lobules.⁴ Ghost cells result from hydrolytic activity of enzymes on the fat cells followed by calcium deposition. A report indicates that fungal infection or gout also can cause changes that mimic pancreatic panniculitis.⁵

Other entities in the differential diagnosis can be excluded by biopsy. Polyarteritis nodosa is a vasculitis. Although panniculitis may be seen in polyarteritis as a secondary phenomenon, lesions are centered around blood vessels and often eventuate in ulceration.⁶ Subcutaneous fungal infection typically reveals organisms on periodic acid–Schiff stain.⁷ Pyoderma gangrenosum is associated with ulceration and a neutrophilic

Selected Differential Diagnosis of Pancreatic Panniculitis

Condition	Characteristics
Erythema nodosum	Tender erythematous nodules primarily found symmetrically in pretibial region and may be accompanied by fever, arthralgia, and malaise; pathology reveals a panniculitis in which septal inflammation predominates ⁹
Pancreatic panniculitis	Erythematous subcutaneous nodules associated with pancreatic disorders and exhibiting characteristic “ghost” cell formation on histopathology ¹⁰
Polyarteritis nodosa	Clinical picture is variable and includes palpable purpura, a livedo pattern, subcutaneous nodules, ulcers, or peripheral gangrene; pathology reveals vasculitis of medium-sized arteries ⁶
Subcutaneous fungal infection	Clinical picture often reveals a single papule at the site of injury, which may then become eroded or ulcerated but generally is not painful; weeks later, multiple subcutaneous nodules and ulcers can appear along the path of lymphatic drainage; pathologically, suppurative and granulomatous inflammation is found in the dermis and subcutis ⁷
Pyoderma gangrenosum	Initial lesion often is a pustule, nodule, or bulla progressing into an ulcer with a necrotic undermined border; pathology reveals a sterile dermal abscess ⁸



Punch biopsy revealed necrosis of the panniculus with “ghost” cells, and calcification was encountered (H&E, original magnification $\times 20$).

infiltrate that is often centered around a central pilosebaceous unit in developing lesions.⁸ Erythema nodosum is a panniculitis in which septal inflammation predominates.⁹ These differential diagnoses of pancreatic panniculitis are summarized in the Table.

Pancreatic panniculitis can be associated with acute arthritis and inflammation of periarticular fat.¹⁰ Treatment of pancreatic panniculitis is usually focused on the underlying pancreatic disease.^{11,12} Our patient benefited from analgesic therapy and her lesions improved on follow-up. Clinicians encountering a patient with new tender nodules should be prompted to perform a biopsy. When histopathologic evaluation reveals ghosted adipocytes, pancreatic panniculitis should be suspected and clinical evaluation undertaken.

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