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Photo Vignette

Pancreatic panniculitis: A rare manifestation of post–endoscopic retrograde cholangiopancreatography hyperamylasemia

Zane Attard, MD, MRCP (UK)[1a], Stephanie Farrugia, MD, MRCP (UK)[1], Eliezer Zahra Bianco, MD, MRCP (UK)[2], David Pisani, MD[3], Liam Mercieca, MD, MRCP (UK)[2], James Pocock, MD, MRCP (UK)[2]

[1] Department of Dermatology, Mater Dei Hospital, Msida, Malta, [2] Department of Gastroenterology, Mater Dei Hospital, Msida Malta, [3] Department of Pathology, Mater Dei Hospital, Msida Malta

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Abstract

Pancreatic panniculitis is a rare cutaneous manifestation affecting patients with pancreatic disease. This eruption is associated with acute pancreatitis, pancreatic malignancies, pancreatic pseudocysts, post–endoscopic retrograde cholangiopancreatography (ERCP) pancreatitis, and pancreatic trauma. Increased efflux of pancreatic enzymes from the diseased pancreas appears to cause extra-abdominal fat necrosis and may manifest in the skin. We report a 59-year-old woman with cutaneous pancreatic panniculitis presenting after ERCP with elevated amylase levels but no symptoms of pancreatitis.

Introduction

Pancreatic panniculitis is a rare cutaneous manifestation, affecting 2% to 3% of patients with pancreatic disease. This eruption is associated with acute pancreatitis, pancreatic malignancies, pancreatic pseudocysts, post–endoscopic retrograde cholangiopancreatography (ERCP) pancreatitis, and pancreatic trauma.[1] The pathophysiology of this disease process is not yet fully understood; however, it is thought that increased efflux of pancreatic enzymes from the diseased pancreas causes extra-abdominal fat necrosis, including within the subcutaneous tissues.[2] Amylase and lipase leak through the microcirculatory and lymphatic systems surrounding the pancreas via the actions of trypsin. Lipase may also be detected within biopsy specimens, highlighting its role in localized fat destruction. The mainstay of treatment is control of the underlying pancreatic condition.[1]

Case Synopsis

A 59-year-old White woman was referred to the dermatology department with a 3-day history of progressive, tender, multiple erythematous nodules over both shins and the right forearm (**Figure 1**). The patient had a past medical history of polycystic kidney disease, orthotopic liver transplant in 2019 complicated by cirrhosis, type 2 diabetes mellitus, and hypertension. The rash developed 1 day after undergoing elective ERCP for a developing anastomotic common bile duct stricture. The patient denied any history of alcohol misuse. The ERCP was complicated by a rising amylase level, reaching 5733 U/L (reference range, 28–100 U/L) 24 hours postprocedure. In addition, her creatinine level increased from a baseline of 1.63 mg/dL to 2.17 mg/dL (reference range, 0.5–0.9 mg/dL). Renal ultrasonography excluded obstructive nephropathy. The patient denied abdominal pain or other gastrointestinal symptoms.

A skin biopsy from the right forearm lesion showed florid active lobular panniculitis with numerous ghost anucleate adipocytes surrounded by a thin rim of lacy calcific deposition. A dense neutrophilic inflammatory infiltrate was also evident (**Figure 2**). The patient's history, elevated serum amylase level, and histopathologic findings were consistent with a diagnosis of pancreatic panniculitis.The eruption resolved over 1 week, concurrent with improvement in the patient's amylase level to 176 U/L, without requiring treatment other than supportive fluids.

Case Discussion

To our knowledge, pancreatic panniculitis following ERCP is rare, with only 9 cases reported in the literature. Reports of pancreatic panniculitis secondary to asymptomatic hyperamylasemia are even more uncommon, with only 1 other case reported. In a similar case, a 63-year-

a Corresponding Author: Zane Attard, MD, MRCP (UK), Department of Dermatology, Mater Dei Hospital, Triq Dun Karm, Msida, MSD2090, Malta, Tel: +356-2545-0000, Email: zane.attard@gov.mt

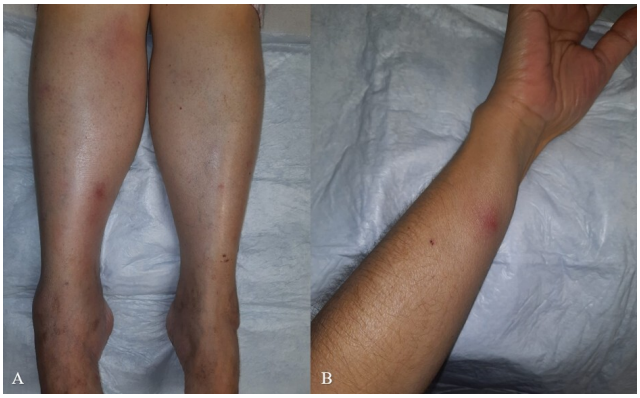

Figure 1. ***(A)*** *Multiple erythematous nodules over the bilateral shins and* ***(B)*** *a lesion over the right forearm.*

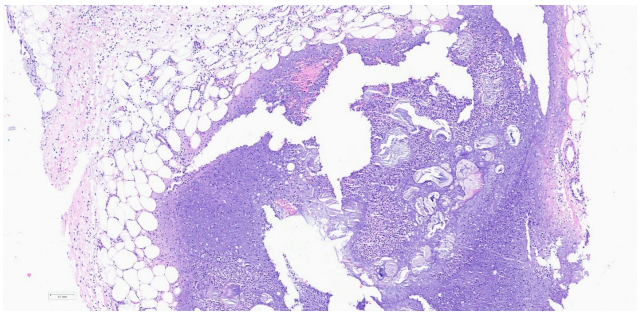

Figure 2. *Numerous anucleate adipocytes (ghost cells) with a neutrophilic infiltrate (hematoxylin-eosin, original magnification ×100).*

old woman with a history of liver transplantation presented with pancreatic panniculitis secondary to hyperamylasemia after ERCP. Unlike our case, the patient complained of abdominal pain; however, cross-sectional imaging ruled out obvious pancreatic pathology.[3] The only other asymptomatic case occurred in an 89-year-old woman with a history of choledocholithiasis who had no abdominal signs or symptoms and normal imaging; notably, her peak serum amylase level was only 154 U/L.[4] In contrast, our patient remained entirely free of systemic symptoms despite markedly elevated serum amylase levels and therefore did not meet the diagnostic criteria for acute pancreatitis as defined by the Revised Atlanta Classification.[5] This may be related to her immunosuppressed state, although the mechanism remains unclear.[6] Another possible contributing factor is decreased metabolism of amylase, which is metabolized by the liver and excreted by the kidneys.[7]

Conclusion

We describe the case of a cirrhotic patient with a background of chronic kidney disease who exhibited notable ERCP-associated elevated amylase levels and pancreatic panniculitis. Although she had no symptoms of pancreatitis and did not fulfill the criteria for acute pancreatitis, the findings suggest pancreatic injury leading to enzyme release.

Potential conflicts of interest

The authors declare no conflicts of interest.

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