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Authors

Yang, Sam Shiyao
Soon, Gwyneth Shook Ting
Aw, Derrick Chen-Wee

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Case Presentation

Pancreatic Panniculitis

Sam Shiyao Yang¹, Gwyneth Shook Ting Soon², Derrick Chen-Wee Aw¹

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¹Department of General Medicine, University Medicine Cluster, National University Health System, Singapore

²Department of Pathology, National University Hospital, Singapore

Correspondence:

Sam Shiyao Yang
Department of General Medicine
University Medicine Cluster
National University Health System, Singapore
samsyyang@gmail.com

Abstract

We describe a rare case of a patient with pancreatic adenocarcinoma who presented initially with a rash on her lower legs. Skin biopsy showed lobular panniculitis and characteristic “ghost” adipocytes consistent with pancreatitic panniculitis. This clinical case is an interesting example where a seemingly innocuous skin condition heralds an underlying malignant disease process.

Case synopsis

A 59 year-old woman complained of painful bumps on her lower limbs. They were increasingly tender over a three-day period, starting on the anterior aspect of the left shin before spreading to involve the right leg as well.

On examination, there were multiple tender and poorly-defined erythematous nodules seen on both lower legs, over the anterior shin, and posterior aspect of her calves. (**Figure 1a and Figure 1b**). Physical examination of her cardiovascular, respiratory, and gastrointestinal systems was unremarkable. The clinical impression was that of panniculitis.

A skin biopsy was obtained from the patient’s right lower limb. Histology showed predominantly lobular panniculitis, with only scanty inflammatory cells seen in the septa. There were no features of vasculitis. There were “ghost” adipocytes related to saponification of their lipid contents and areas of liquefactive fat necrosis, which suggested an enzymatic process (**Figures 2a to**



Figure 1a. Ill-defined erythematous plaques over the right anterior shin.

2d). This prompted further investigations for an underlying pancreatic disorder.

A liver function test demonstrated an obstructive picture: total bilirubin of 63 $\mu\text{mol/L}$ of which direct bilirubin was 48 $\mu\text{mol/L}$, aspartate transaminase 82 iu/L, alanine transaminase 198 iu/L, and alkaline phosphatase 394 iu/L. Serum amylase level was 263 U/L.

Computed tomography of the abdomen revealed multiple discrete lesions within the liver parenchyma together with an ill-defined heterogeneously enhancing lesion in the pancreatic uncinus process and head, which was encasing the superior mesenteric artery.

She subsequently underwent endoscopic fine needle aspiration of the pancreatic head mass. Cytology demonstrated a poorly-differentiated adenocarcinoma of likely ductal origin. At the same time, a metallic biliary stent was placed to bypass the obstruction.



Figure 1b. Multiple lesions affecting the anterior and medial aspect of the left calf.

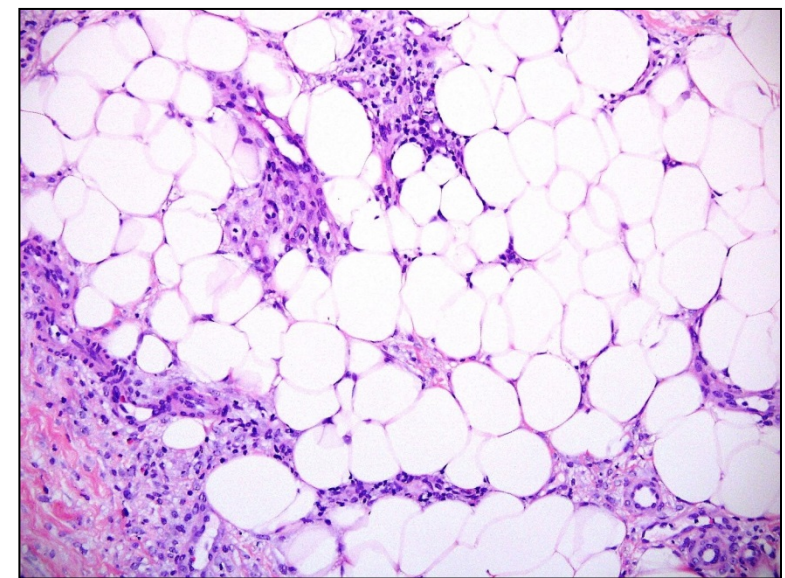
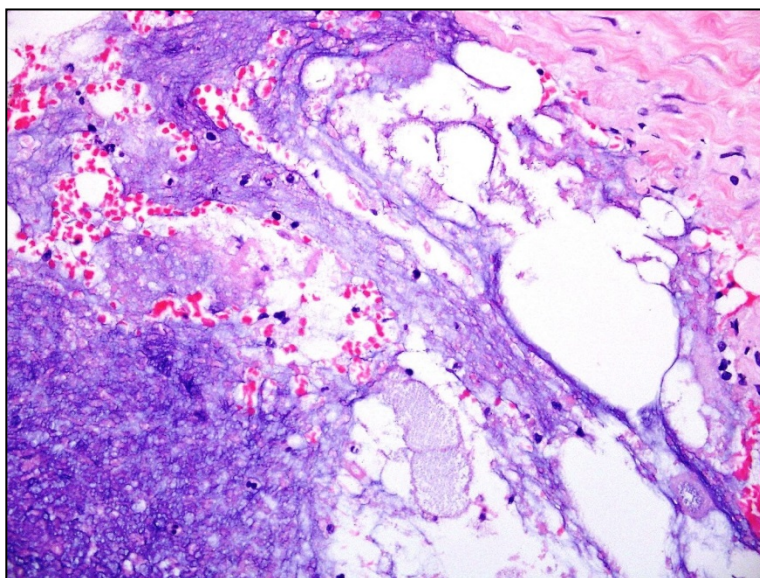
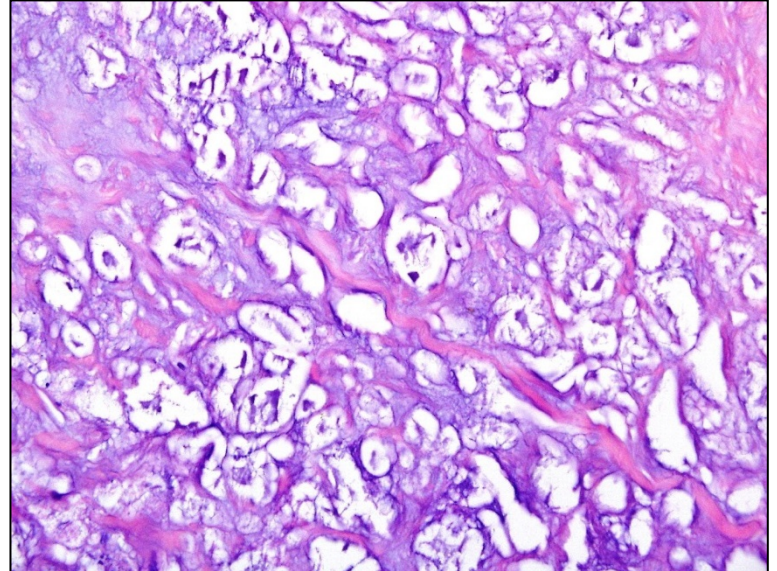
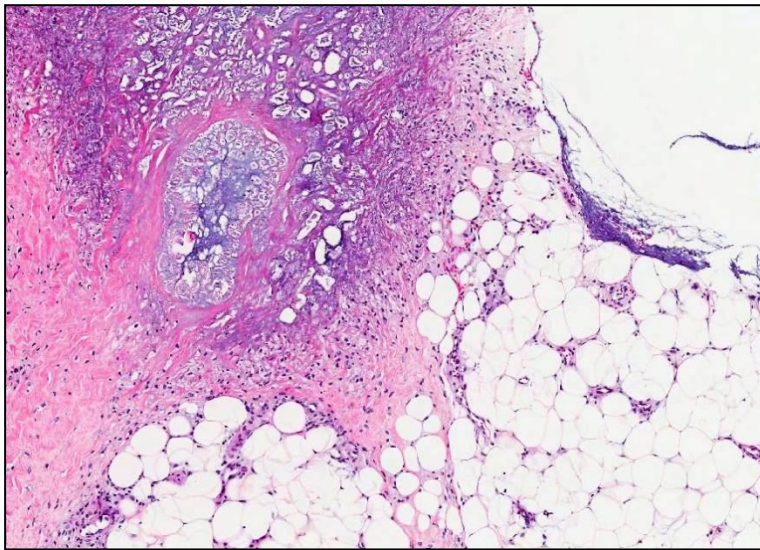


Figure 2a. Lobular panniculitis with marked necrosis of adipocytes. Hematoxylin-eosin stain, original magnification x40.

Figure 2b. Characteristic “ghost” adipocytes with granular basophilic contents due to saponification of lipid content. Hematoxylin-eosin stain, original magnification x400

Figure 2c. Areas of liquefactive fat necrosis – the cellular structures are no longer evident. Hematoxylin-eosin stain, original magnification x400.

Figure 2d. Scanty lymphocytic infiltration and fibroblastic proliferation in the adjacent lobular septa Hematoxylin-eosin stain, original magnification x200

Discussion

Panniculitis is defined as inflammation of the subcutaneous adipose tissue. Although there are many conditions that result in panniculitis, the clinical morphological patterns are limited – as a group, they present as tender, erythematous subcutaneous nodules that tend to be more easily appreciated by palpation, rather than visually. Although certain types of panniculitides demonstrate preferential localization, for example, erythema nodosum involving the pretibial regions, there are still considerable diagnostic difficulties due to the multiple overlapping features between the many disparate causes [1].

Skin biopsies are necessary for a histopathological diagnosis. The initial key consideration is to determine if the inflammation is predominantly septal, resulting in widened septa and relatively intact lobules, or lobular, whereby the lobule is diffusely involved and the septa less affected [1]. The second consideration would be to determine the presence of vasculitis, and if present, the size of the vessels involved.

Pancreatic panniculitis is a rare complication of pancreatic disease that occurs in 2 to 3% of all patients with acute or chronic pancreatitis, and is most frequent with alcohol-induced pancreatitis. Other causes of pancreatic panniculitis would include pancreatic diseases such as pancreatic carcinoma, or other conditions, such as liver carcinoma with pancreatic involvement [2]. It is thought to result from the release of pancreatic enzymes that leads to subcutaneous fat necrosis [3-4]. The panniculitis commonly affect the lower limbs, although other sites such as the thighs, arms, abdomen, and chest have also been reported [2].

The initial presentation of painful erythematous nodules over the lower limbs [5] is very similar to the other commoner forms of panniculitis such as erythema nodosum and erythema induratum. The diagnosis of pancreatic panniculitis would require the presence of pancreatic disease and suggestive histopathological features. As in this case, “ghost” adipocytes related to saponification of their lipid contents and areas of liquefactive fat necrosis are characteristic.

We describe a patient with pancreatic panniculitis in association with pancreatic adenocarcinoma. This is an interesting example in which an otherwise innocuous skin condition heralds an underlying malignant disease process.

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