

CASE REPORT

Livedo Reticularis: A Rare Skin Manifestation of Pancreatitis

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ABSTRACT

Skin manifestation associated with pancreatitis can have various presentations. Skin manifestations such as Grey Turner sign or Cullen's sign are known and well documented findings of pancreatitis and carry significant prognostic value. However, livedo reticularis is a rare phenomenon in setting of pancreatitis. Here we report a case of 40 year old female who experiences recurrent episodes of livedo reticularis which is coupled with each bout of acute on chronic pancreatitis. In our patient, livedo reticularis disappears each time with resolution of acute episode of pancreatitis. The recurrent episodes of livedo reticularis from pancreatitis has been very rarely reported in literature. Recognizing skin manifestations in pancreatitis can help clinicians understand the severity and pathology of pancreatitis. Unlike Grey Turner sign or Cullen's sign, livedo reticularis has limited prognostic value, however, their presence deserve our attention. Further case reports and studies will be useful in determining the occurrence and incidence of livedo reticularis resulting from pancreatitis.

INTRODUCTION

Pancreatitis is a commonly seen and treated medical condition. Although less common now, skin manifestations such as Grey Turner's sign, Cullen's sign and Fox's sign are widely reported in literature in setting of severe pancreatitis. This is in comparison to skin manifestations such as Livedo reticularis which is rarely reported. The exact pathogenesis of Livedo Reticularis is not well understood in such setting. We, hereby, present a patient with recurrent episodes of livedo reticularis in setting of acute on chronic pancreatitis.

CASE REPORT

A Forty-year-old female with a past medical history of chronic pancreatitis, cholecystectomy, tubal ligation and hysterectomy presented to the emergency department with complains of abdominal pain, nausea and vomiting for the duration of a week. Patient stated these symptoms were similar to her previous episodes of pancreatitis. Further past medical history revealed that patient had been having recurrent episodes of pancreatitis for about 7 years. In past, she had undergone extensive work up which included transduodenal sphincterectomy, cholecystectomy and multiple biliary stent placements. On admission, her laboratory findings were pertinent for a white blood cell count of 14000 U/L. Basic metabolic

panel, lipase (105 U/L) and amylase (41 U/L) levels were within normal limits. Gastroenterology was consulted and patient underwent upper endoscopy with endoscopic ultrasound, which demonstrated changes consistent with acute on chronic pancreatitis (**Figure 1**). Patient was conservatively treated for pancreatitis with intravenous fluids, analgesics, and bowel rest. On day 2 of hospitalization, patient was noted to have a skin rash on her right abdominal area (**Figure 2**), which appeared to be molted lace like in nature. Dermatology was consulted and diagnosed the patient with livedo reticularis given the physical appearance of the rash and clinic relevance. Skin biopsy was performed which showed perivascular edema with perivascular lymphomononuclear infiltrates along with antibody (IgM) and complement (C3) deposition seen on direct immunofluorescence. These findings were consistent with Livedo Reticularis. Upon inquiry, it was noted that patient had multiple episodes of a similar rash in concordance with her previous episodes of pancreatitis which also resolved with the resolution of her pancreatitis bout.

DISCUSSION

Skin manifestations are a rare complication of pancreatitis. Commonly known manifestations of acute pancreatitis include Grey Turner sign and Cullen sign. However, skin manifestations of acute on chronic pancreatitis are rarely reported. This is especially true for recurrent episodes of Livedo Reticularis in the setting of chronic pancreatitis where only one such case has been previously reported in literature [1]. Exact Pathogenesis of this rash in this setting is still unknown. However, the skin biopsy finding in our patient is consistent with findings noticed in previous case as well [1]. Perivascular lymphomononuclear infiltrate along with antibody

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Figure 1: Reticulated brownish gray discoloration accompanied by pale areas indicating livedo reticularis.

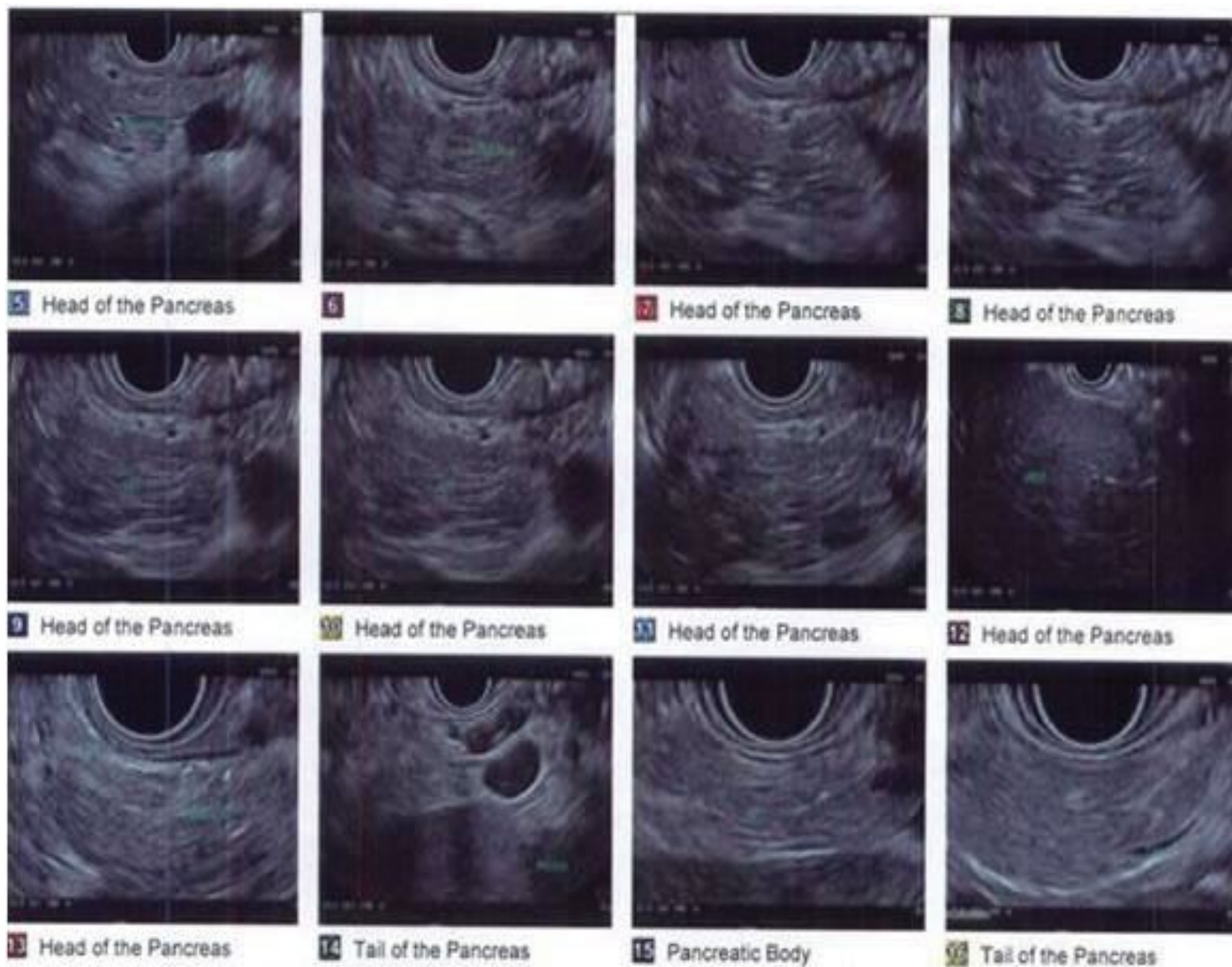


Figure 2. EUS showing sign of chronic pancreatitis in head of pancreas.

and complement deposition can result in the arteriolar obstruction of the arteriole in the center of the cone. This arteriole obstruction can then present as irregular reticulate brownish gray discoloration as seen on **Figure 2**. The initial trigger that leads to this infiltrative and obstructive pattern seen in the arterioles can be linked to acute inflammatory process resulting from pancreatitis. Pancreatitis, which usually results from the blockage of pancreatic duct or direct inflammation of the pancreas, results in spillage of pancreatic enzymes. One such enzyme is Trypsinogen which attacks the walls of blood vessels and omentum through its proteolytic action [2, 3]. Activated trypsinogen (trypsin) can lead to activation of complement system and perivascular lymphocyte deposition around the affected arterioles [3]. It is, however, unclear why such arteriolar obstruction is only seen in selective vessels. This trypsin mediated deposition of lymphocytes, antibody and complement is further supported from the fact that Livedo Reticularis resolves with resolution of each episode of acute on chronic pancreatitis [4]. This kind of vascular damage leading to Livedo Reticularis has been seen associated with other conditions such as Acute Lymphocytic Leukemia or Polyarteritis Nodosa in addition to pancreatitis [5]. Similar to those incidences of Livedo Reticularis, our patient's rash resolved with the resolution of the underlying pathology [6].

CONCLUSION

The role of cutaneous manifestations of pancreatitis may be debatable in terms of diagnostic value, however, their presence can't be ignored by clinicians as they may

have prognostic values. The incidence and long-term prognosis of Livedo reticularis in setting pancreatitis remain to be seen given the rarity of such pathology. Our case report and previous case report findings are consistent with trypsin mediated selective arterioles obstruction, however, more case reports will be helpful to definitively rule in or rule out such hypothesis.

Conflict of Interest

The authors had no conflicts of interest.

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