

Objectives

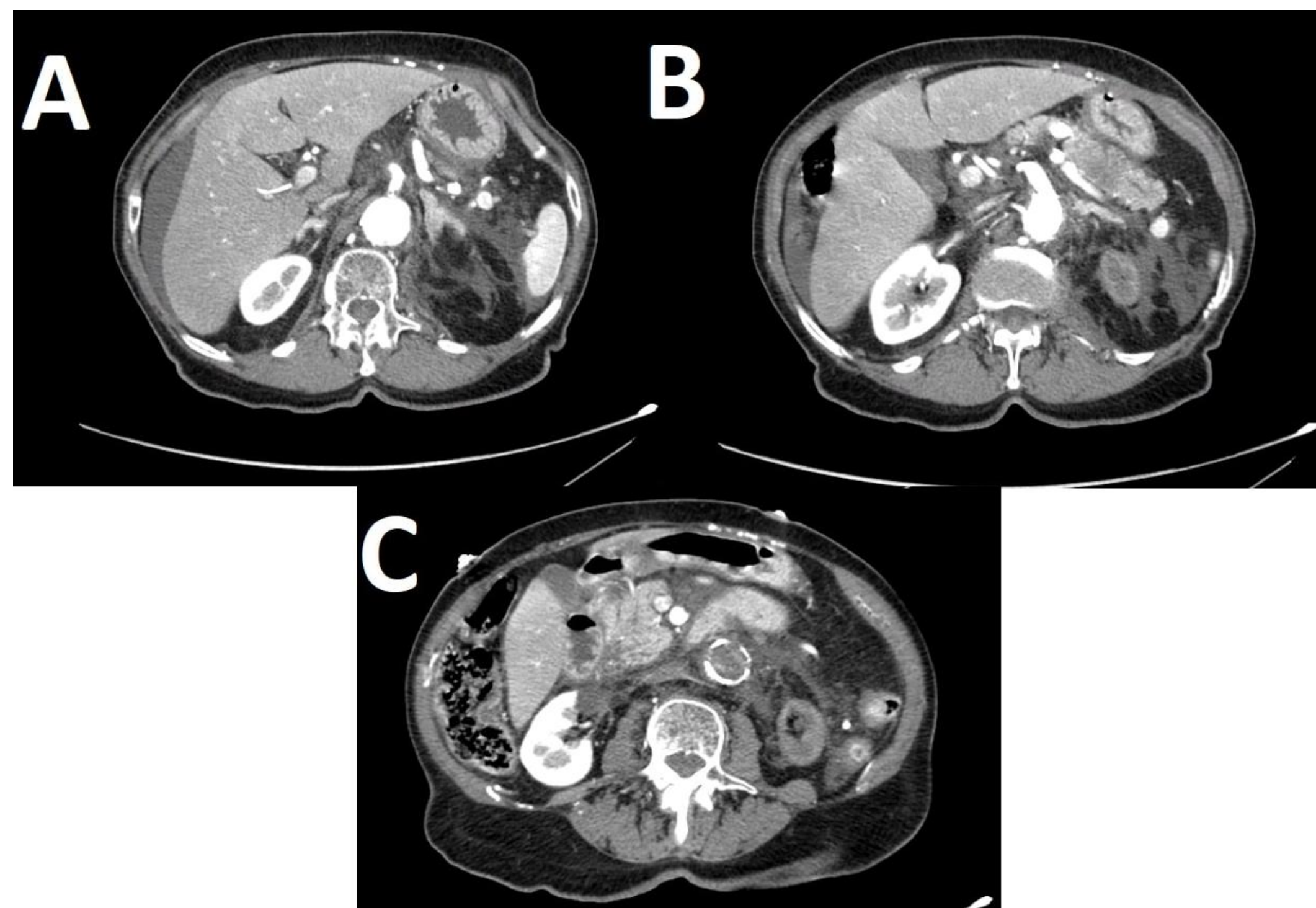
- To document a rare cause of acute pancreatitis.
- To briefly review vascular anatomy of the pancreas.
- To iterate the need for further research regarding diagnosis and treatment of acute pancreatitis secondary to vascular insufficiency.

Introduction

- Acute pancreatitis is a leading cause of hospitalizations in the United States.
- The pancreas relies on blood supply from the celiac and superior mesenteric arteries.
- Compromise to any part of the pancreatic circulation may lead to inflammation.
- Vascular insufficiencies are an uncommon cause of acute pancreatitis.
- We present a rare case of acute pancreatitis secondary to celiac stenosis with concomitant abdominal aortic aneurysm thrombosis.

Imaging

Figure 1. Celiac artery stenosis (A) with pancreatitis, pancreatic tail necrosis and peripancreatic fluid and strand (B). Thrombosis within the distal aorta (C).



Patient Case

HPI:

- A 79-year-old female presented for one day of abdominal pain with associated nausea and non-bloody emesis.

ROS

- Positive: abdominal pain, nausea, vomiting.
- Negative: chest pain, shortness of breath, fever, chills.

Past Medical History: peripheral vascular disease, atrial fibrillation, Type 2 diabetes mellitus, hypertension, hyperlipidemia, tobacco abuse.

Past Surgical History: None

Physical exam:

- Abdominal tenderness to palpation specifically within the epigastric region. No rebound, rigidity, or guarding. Tachycardia.

Labs:

- WBC 17.1, lactate 2.7, AST 25, ALT 16, alkaline phosphatase 53, total bilirubin 0.8, direct bilirubin 0.1, and a lipase of 976.

Imaging

- CTA of the abdomen demonstrated inflammatory fluid with pancreatic tail necrosis, peripancreatic stranding, stenosis of the celiac origin and thrombosed aortic aneurysm measuring 6.1cm with distal reconstitution.

Hospital Course

- She was placed on intravenous heparin and lactated ringer infusions.
- After the diagnosis of her acute pancreatitis, she was found to have a normal triglyceride level and IgG4 level.
- Abdominal ultrasound revealed gallbladder sludge without cholelithiasis or biliary dilation.
- There was no history of alcohol use preceding her hospitalization.
- Moreover, there were no new medications or over the counter supplements reported.
- It was felt the patient's pancreatitis was a result of arterial insufficiency from celiac artery stenosis.
- The patient was seen by Vascular Surgery and was treated medically.
- During her stay, the patient developed worsening pleural effusion and hypoxic respiratory failure requiring supplemental oxygen.
- She was ultimately discharged to a skilled nursing facility when medically stable.

References

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2. Toouli J, Brooke-Smith M, Bassi C, et al. Guidelines for the management of acute pancreatitis. *J Gastroenterol Hepatol* 2002; 17 Suppl:S15.
3. Vege SS, Yadav D, Chari ST. Pancreatitis. In: *GI Epidemiology*, 1st ed, Talley NJ, Locke GR, Saito YA (Eds). Blackwell Publishing, Malden, MA 2007.

Discussion

- Isolated case reports of acute pancreatitis due to vascular insufficiencies have been reported without defined incidence or prevalence.
- The head of the pancreas and uncinate process receives blood supply from the superior pancreaticoduodenal artery and the inferior pancreaticoduodenal artery which stem from the celiac trunk and superior mesenteric artery respectively.
- The body and tail are more vulnerable to ischemia, being perfused solely by the splenic artery of the celiac artery.
- As the splenic artery traverses the superior pancreas, it contributes several smaller arteries including the pancreatica magna artery which is free to join with other arteries of the splenic artery or the superior mesenteric artery.
- The pancreas is highly invested in the success of the celiac artery and its various tributaries.
- After ruling out more common etiologies, compromise of the celiac artery was presumed to be the cause of this patient's disease process.
- Conservative treatment yielded satisfactory results in our case, however the standard of care regarding acute pancreatitis with vascular insufficiencies need additional elucidation.

Conclusion

- Acute pancreatitis secondary to celiac artery stenosis is a rare entity.
- Further studies are needed to establish the relationship between vascular insufficiency and acute pancreatitis.
- While conservative treatment yielded satisfactory results, the standard of care regarding acute pancreatitis with vascular insufficiencies has not yet been agreed upon.