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## Abstract

Pancreatic pseudoaneurysm is a rare vascular complication of pancreatitis, with an estimated prevalence of 10%. We present a case of an elderly male with multiple comorbidities presenting with altered mental status and hypovolemic shock secondary to unexplained gastrointestinal and retroperitoneal hemorrhage. A focused clinical examination and timely imaging led to the diagnosis of a life-threatening ruptured pancreatic pseudoaneurysm that was successfully treated with endovascular coil embolization, a case that could have otherwise resulted in death.

## Introduction

- Pseudoaneurysm can result from trauma, inflammation, infection, and iatrogenic causes. Due to its weak structural support, the risk of rupture is higher for pseudoaneurysm than that of a true aneurysm of similar size [1].
- Pancreatic pseudoaneurysms can lead to life-threatening complications such as rupture and bleeding, with increased morbidity and mortality up to 90% in untreated patients and 12.5% despite treatment.
- Due to its high mortality rate with rupture, pseudoaneurysms should be treated immediately once it is identified, regardless of their size or whether it is symptomatic or not.
- With the rapid growth in the field of interventional radiology, there has been a paradigm shift in managing these vascular lesions with endovascular procedures rather than conventional surgical options

## Case Presentation

Our patient is a 68-year-old male was brought to the hospital after his neighbor found him confused on the floor of his apartment

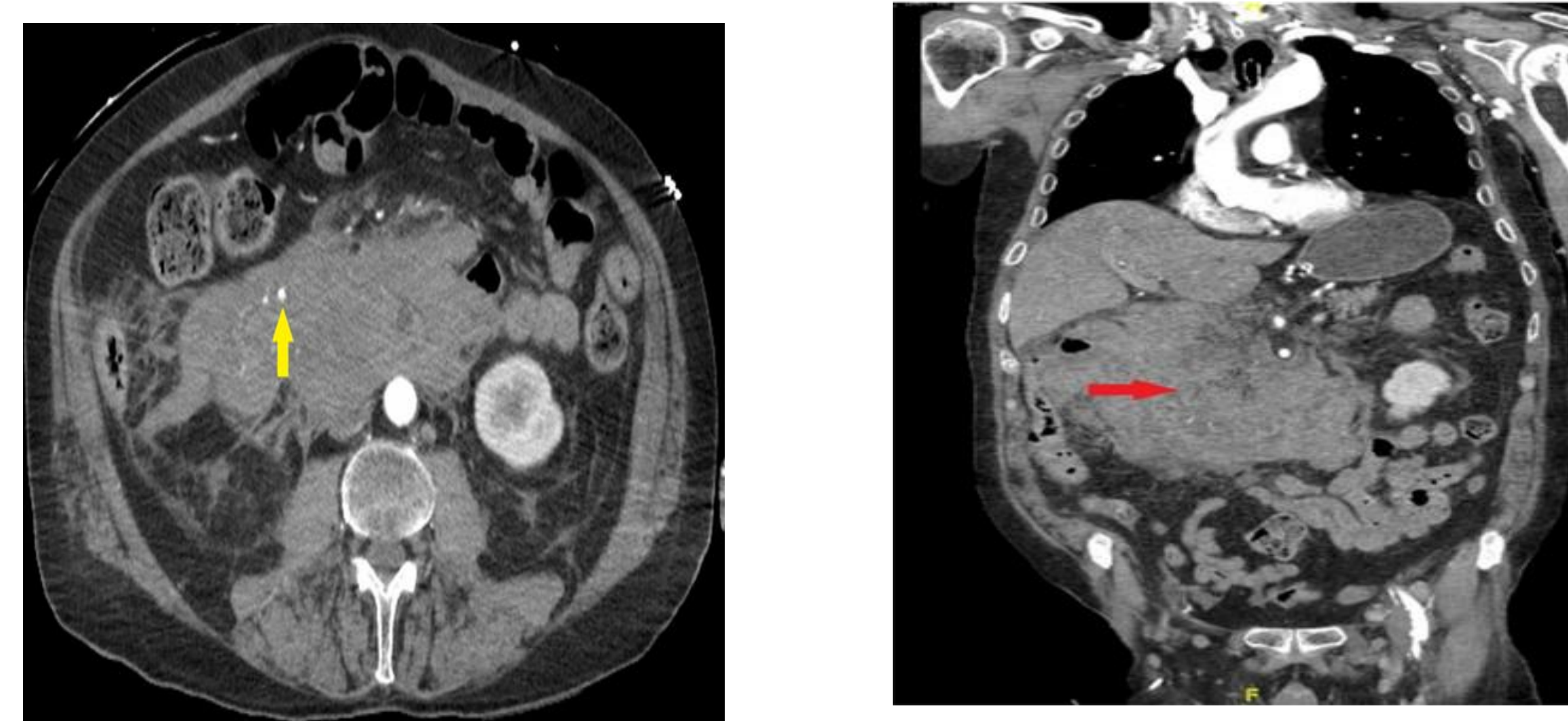
His past medical history of chronic pancreatitis, uncontrolled hypertension, human immunodeficiency virus (HIV) infection, morbid obesity, chronic obstructive pulmonary disease on two liters of ambulatory home oxygen and treated hepatitis C infection. He was a former heavy smoker, alcoholic and recreational drug (cocaine and heroin) user

In the emergency room, he was afebrile, with a blood pressure of 131/82 mmHg, heart rate of 150 beats per minute, saturating 94% on 2 liters/min supplemental oxygen. He appeared cachectic with bitemporal wasting on general physical examination. He had altered mental status, bilateral dilated pupils, distended non tender abdomen. Patient was intubated for airway protection.

He was found to have a white blood cell count of 24.3. Urine drug screen was positive for Cocaine and Methadone

CT Head was unremarkable. CT Angiography images of the Abdomen (axial and coronal) in arterial phase showing retroperitoneal and right sided intraperitoneal hemorrhage (red arrow) with active contrast extravasation (yellow arrows) suspicious for arterial bleeding vs punctuate pseudoaneurysm. This has been presented in Figure 1.

Figure 1. CT Angiography of the Abdomen.



## Results

Patient was admitted to the intensive care unit. Patient was transfused packed red blood cell for anemia.

Celiac angiogram was done under fluoroscopic guidance, which showed gastroduodenal and superior pancreaticoduodenal artery pseudoaneurysms .This has been shown in Figure 2.

Gastroduodenal artery embolization was carried out using micro-coils and gel foam via right common femoral artery approach. This has been shown in Figure 3.

Patient was then monitored closely in the medical intensive care unit for rebleeding episodes.

Ultrasound of the abdomen on day 3 of hospitalization showed an 8mm dilated common bile duct. He was diagnosed with acute on chronic hemorrhagic pancreatitis due to gall stones.

Repeat CT of the abdomen with intravenous contrast on day 4 of hospitalization showed resolving retroperitoneal hematoma with decrease in size and no signs of active arterial extravasation. His clinical status gradually improved.

Patient was discharged in clinically stable condition

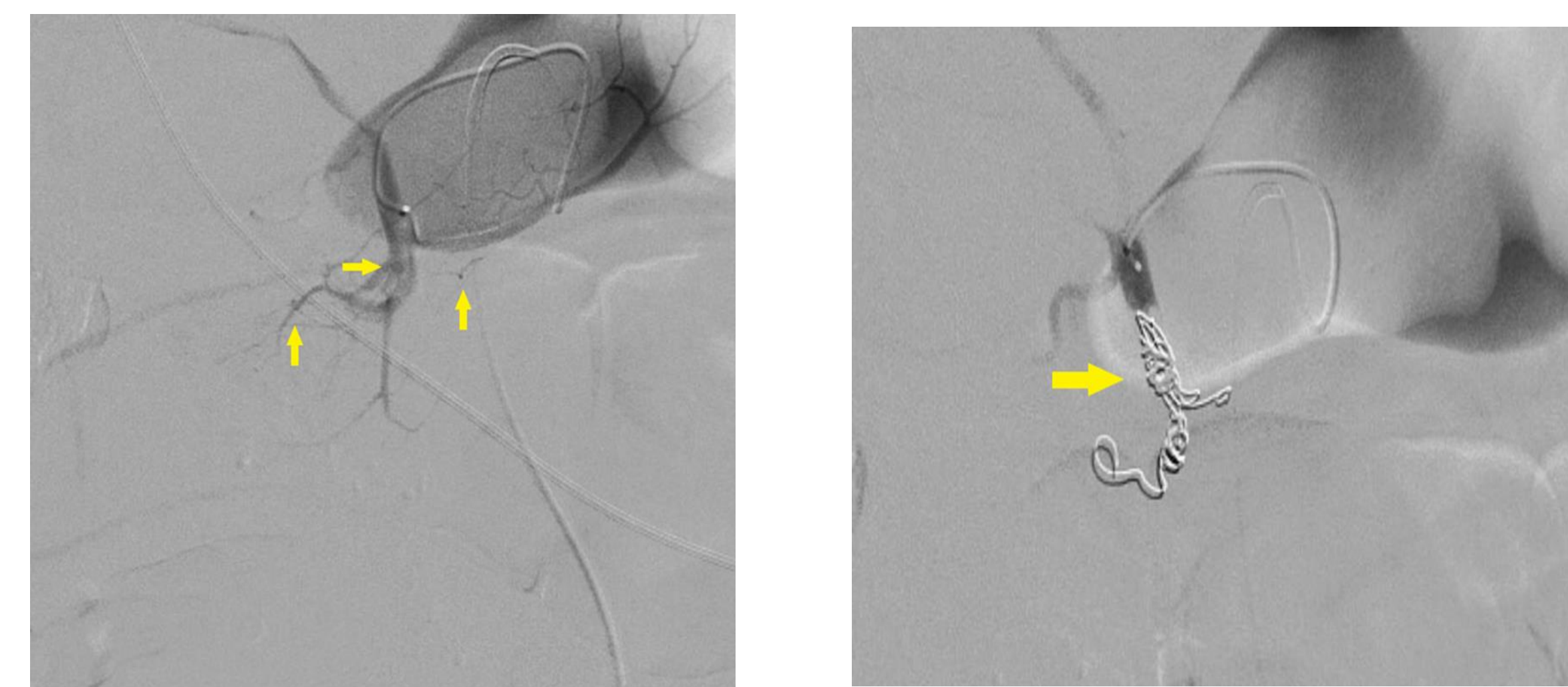


Figure 2. Celiac Artery Pre embolization Figure 3. Celiac Artery post embolization.

## Discussion

Pancreatic pseudoaneurysm is a rare vascular complication of pancreatitis, with an estimated prevalence of 10%. If left untreated, it can lead to fatal hemorrhage with a high mortality rate [2].

A gastroduodenal artery (GDA) pseudoaneurysm most often presents with gastrointestinal or intraperitoneal bleeding due to rupture, abdominal pain, pulsatile abdominal mass, anemia, or even shock, but can be asymptomatic in 7.5% of cases [3][4].

CT of the abdomen and pelvis with contrast has a sensitivity of 67% for diagnosing pseudoaneurysms, but CT angiogram is the gold standard for diagnosis, with a sensitivity of 100% [2].

Endovascular treatment with various embolization techniques (e.g., coil, stent, transcatheter thrombin injection) has become the favored approach in stable patients due to its advantage over conventional surgical treatments in terms of lower morbidity and mortality rate, less postoperative pain, decreased hospital length of stay, and early return to daily life activities [5].

Despite the high success rate of embolization, re-bleeding can occur in 20-40% of patients and observation with close follow-up after embolization is necessary [6]. The overall mortality rate remains high at 7.4% to 16% even after endovascular therapy and 20 to 30% after surgery

## Conclusions

Physicians should be aware of pancreatic pseudoaneurysms as rare vascular complication associated with chronic pancreatitis that may lead to fatal gastrointestinal or retroperitoneal bleeding with a high mortality rate.

Patients with hemorrhagic pancreatitis or those presenting with unexplained retroperitoneal or gastrointestinal bleeding in the setting of pancreatitis with an unexplained drop in hematocrit or sudden expansion of pancreatic fluid collection should be screened in a timely manner for pancreatic pseudoaneurysm using CT angiogram of the abdomen, which is the gold standard imaging modality to identify pseudoaneurysms.

## Contact

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## References

1. Carr JA, Cho JS, Shepard AD, Nypaver TJ, Reddy DJ. Visceral pseudoaneurysms due to pancreatic pseudocysts: rare but lethal complications of pancreatitis. *J Vasc Surg.* 2000 Oct;32(4):722-30.
2. Gurala D, Polavarapu AD, Idiculla PS, Daoud M, Gumaste V. Pancreatic Pseudoaneurysm from a Gastroduodenal Artery. *Case Rep Gastroenterol.* 2019 Oct 30;13(3):450-455.
3. Saqib NU, Ray HM, Al Rstum Z, DuBose JJ, Azizzadeh A, Safi HJ. Coil embolization of a ruptured gastroduodenal artery pseudoaneurysm presenting with hemococcus pancreaticus. *J Vasc Surg Cases Innov Tech.* 2020;6(1):67-70.
4. Awada Z, Al Moussawi H, Alsheikh M. Gastroduodenal Artery Pseudoaneurysm Rupture Post-Billroth II Surgery: Case Report. *Cureus.* 2019;11(1):e3833.
5. Chapman BM, Bolton JS, Gioe SM, Conway WC. Gastroduodenal Artery Pseudoaneurysm Causing Obstructive Jaundice. *Ochsner J.* 2021;21(1):104-107
6. Pang TC, Maher R, Gananadha S, Hugh TJ, Samra JS. Peripancreatic pseudoaneurysms: a management-based classification system. *Surg Endosc.* 2014 Jul;28(7):2027-38.