



# Images In Medicine

## Fever and an Expanding Pancreatic Fluid Collection

Armando Bedoya, BA (MD '11), Matthew Hudson, MD, Julie H. Song, MD,  
and Edward Feller, MD, FACP, FACG

**Pancreatic pseudocysts typically arise as complications of acute pancreatic inflammation.** When pseudocysts persist after recurrent attacks, cyst-related complications may occur with atypical, potentially misleading features. We report a patient with infection in a chronic, known asymptomatic pseudocyst. Clinicians should be aware of the diverse, possibly catastrophic sequelae of pancreatic fluid collections.

A 71-year-old male presented with 4 days of epigastric pain radiating to the back, anorexia, nausea and vomiting. Past medical history was significant for two recent admissions for unexplained pancreatitis that led to a pseudocyst formation (Figure 1). He had a history of hypertension, Parkinson's disease, and bipolar disorder. Medications included carbidopa/levodopa, lithium, and amlodipine. He denied alcohol use or history of liver disease. On admission, vital signs were normal; he was afebrile. Abdominal exam: mild epigastric tenderness to palpation. No stigmata of chronic liver disease, masses or portal hypertension. Serum lipase was normal. Abdominal ultrasound: no gallstones; magnetic resonance cholangiopancreatography (MRCP): no biliary or pancreatic duct abnormalities, no bile duct stones. Abdominal CT (Figure 2): peri-pancreatic inflammation with two pancreatic fluid collections, one that had increased in size from CT exam one-month prior and a second new, partially organized collection. He was stabilized on bowel rest and oral intake begun. On hospital day 5, he spiked a fever to 101° F. WBC count increased to 24,000. Repeat CT scan (Figure 3) showed two fluid collections

markedly enlarged from the prior exam with a total transverse size of 18 cm. The fluid collections largely replaced pancreatic tissue and compressed his stomach anteriorly. Because cyst wall thickness was adequate, CT-guided percutaneous drains were placed with 1.5 L of purulent fluid collected. He was placed on Meropenem. *Klebsiella Pneumoniae* grew from cultures. Repeat CT (Figure 4) on hospital day 12 showed resolved fluid collections. Drains were removed. He was discharged to complete a 6-week antibiotic course.

### DISCUSSION

In acute pancreatitis, increased ductal pressure causes duct disruption with intrapancreatic enzyme activation. Leakage and excretion of pancreatic juice occurs into the pancreas, retroperitoneum, or peri-pancreatic space. Early in acute pancreatitis (< 4 wks), fluid collections are amorphous. Cyst walls are thin and drainage is hazardous because leakage of pancreatic juice would occur into the peritoneal cavity. A majority resolve spontaneously; however, in 5-15%, the collection can produce a profound inflammatory response along serosal surfaces of adjacent organs, resulting in a fibrous pseudocapsule with a defined wall. This process takes between 4 and 8 weeks, at which point this collection is termed a pseudocyst.

Pseudocysts may remain asymptomatic independent of size or duration. However, very large cysts, as in our patient, may be more likely to become symptomatic from expansion or complications, such as infection, rupture, bleeding, vascular



Figure 1. Axial contrast-enhanced CT image 1 month prior to admission. Homogenous 2 cm fluid collection (arrow) at the neck of pancreas.

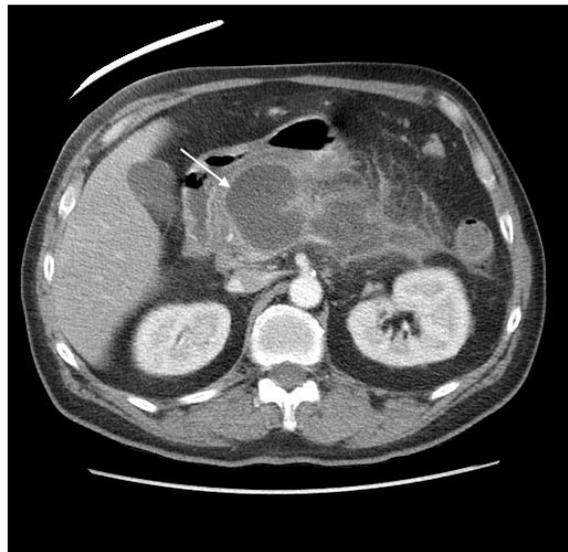


Figure 2. CT at admission. Peri-pancreatic inflammation with enlarged fluid collection at neck of pancreas with enhancing wall (arrow) and a new partially organized collection at the pancreatic body and tail.

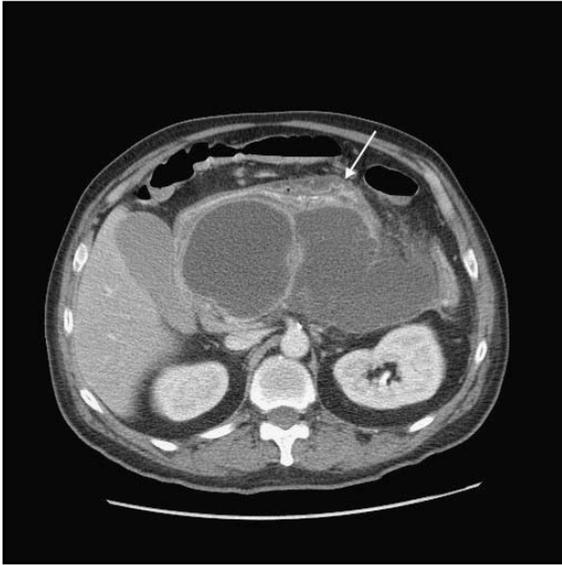


Figure 3. CT on hospital day 5. Further enlargement of two fluid collections, replacing pancreatic tissue and compressing the stomach (arrow).

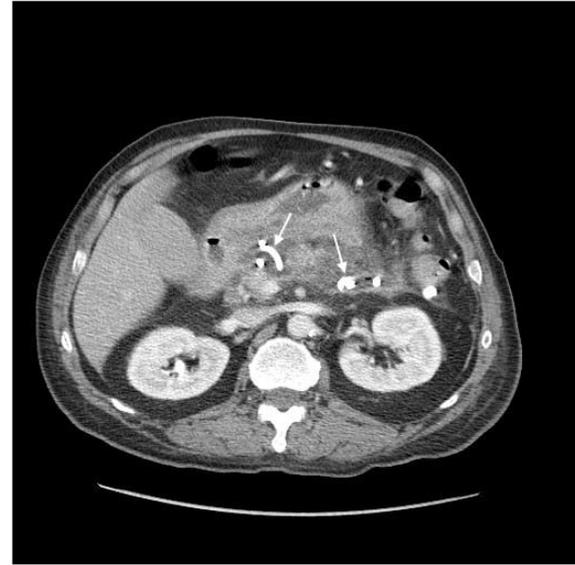


Figure 4. CT on hospital day 12. Resolution of fluid collections following percutaneous CT-guided drainage. Drains (arrow) were removed after CT.

thrombosis or obstruction of adjacent structures such as the bile duct, duodenum or colon.

Fever in patients with pancreatic fluid collections must be distinguished from biliary infection as well as from other pancreatic fluid collections: Pancreatic abscess where purulence predominates, infected pancreatic necrosis where necrosis predominates, or a cystic pancreatic neoplasm.

Occurrence of fever at day 5 due to pancreatic infection is atypical. Infection in pancreatic fluid collections is a secondary phenomenon, typically requiring at least 7-10 days to develop from a sterile collection. However, his pseudocyst was chronic; potential infection was possible at any time.

## REFERENCES

1. Cannon JW, Callery MP, Vollmer CM. Diagnosis and management of pancreatic pseudocysts: What is the evidence? *J Amer Coll Surg* 2009;209:385-93.
2. Berzin T, Mortele KJ, Banks PA. The management of suspected pancreatic sepsis. *Gastroenterol Clin N Amer* 2006;35:393-407.

## Disclosure

The authors and/or their spouses/significant others have no financial interests to disclose.

*Armando Bedoya, BA (MD'11) is a 4th year medical student, Brown University.*

*Matthew Hudson, MD is a resident in Internal Medicine at Brown.*

*Julie H. Song, MD is an Associate Professor of Diagnostic Imaging (Clinical) at Brown.*

*Edward Feller, MD is a Clinical Professor of Medicine and Adjunct Professor of Community Health at Brown.*

If your patient has been diagnosed with **Cancer** and they're afraid they cannot afford healthcare, **Call Us Today!**

The Affiliates of 21st Century Oncology provide a full spectrum of radiation therapy treatment modalities for cancer patients in a warm and caring environment. We treat patients regardless of their ability to pay. Let us help your patients receive the radiation therapy services they need.



**21st Century Oncology**  
www.21stCenturyOncology.com

For specific information regarding income requirements, have your patient call our Office Financial Manager

Roger Williams Radiation Therapy • 50 Maude Street • Providence • (401) 456-2690  
Southern New England Regional Cancer Center • 115 Cass Ave., Ste 1 • Woonsocket • (401) 356-1701  
South County Radiation Therapy • 142 Kenyon Avenue • Wakefield • (401) 284-0850

## CORRESPONDENCE

Armando Bedoya  
199 Ives Street, Apt. 1  
Providence, RI, 02906  
Phone: (619) 632-8525  
e-mail: Armandobedoya@gmail.com