

Case 8430
Acute emphysematous pancreatitis

Arora A, Kapur A, Vandana, Upreti L, Puri SK
G.B. PANT HOSPITAL

Section: Abdominal Imaging

Published: 2010, Jun. 10

Patient: 32 year(s), female

Clinical History

A 32-year-old lady had fever, intermittent nausea and vomiting, and increasing abdominal pain for the last 5 days.

Imaging Findings

A 32-year-old hitherto healthy lady presented with fever, intermittent nausea and vomiting, and increasing abdominal pain for the last 5 days. On examination, she had a distended abdomen and marked epigastric tenderness. Her haematological examination revealed total leucocyte count of 12,300 cells and an elevated erythrocyte sedimentation rate (ESR) of 36 mm. Serum amylase and lipase levels were 1315 and 1540 units per litre respectively. Ultrasonography revealed marked probe tenderness in the epigastric region. The midline abdominal structures were not well visualised due to gas shadowing. A contrast enhanced CT was subsequently performed. CT examination revealed large amount of mottled gas replacing the pancreatic parenchyma especially in the region of body and tail. There was associated marked peripancreatic fat stranding and inflammatory changes seen. Based upon the CT findings, diagnosis of acute emphysematous pancreatitis was considered.

Discussion

Emphysematous pancreatitis is characterised by gas formation within and around the pancreas. It is a rare variant of severe acute pancreatitis with mortality and morbidity rates reported as high as 40% and 100%, respectively. Most cases of emphysematous pancreatitis are due to superinfection

by gram negative bacteria, most frequently Escherichia coli, and others being Klebsiella and Pseudomonas. The exact portal of entry of these infective agents is not known, however various channels of spread to the pancreatic bed have been attributed. These include haematogenous or lymphatic spread, transmural extension from the large bowel, fistulous communication with adjacent bowel, or reflux of enteric organisms into the pancreatic duct through a patulous ampulla of Vater.

Emphysematous pancreatitis is diagnosed radiologically on the basis of the presence of gas in the retroperitoneum. Computed tomography is considered the imaging modality of choice. It is highly sensitive and specific in detecting abnormal gas loculi and demonstrating their extent in the retroperitoneum. It is a valuable tool to depict the extent of inflammation in and around the pancreas and to look for associated complications. Traditionally, emphysematous changes in the pancreas are considered as an indication for surgical intervention. However, recent literature has reported cases which have been successfully managed with conservative treatment. If the patient's clinical condition is stable, conservative management with antibiotics has been recommended. In appropriate clinical settings, minimally invasive fluid collection drainage can be undertaken, such as percutaneous catheter drainage.

To conclude, demonstration of gas in and around the pancreas suggests the diagnosis of emphysematous pancreatitis which is a life threatening condition, hence merits intensive care and aggressive management with or without surgical intervention.

Final Diagnosis

Acute emphysematous pancreatitis

Figures

Figure 1 CT scannogram

CT scout film demonstrates mottled air lucencies infero-lateral to the gastric shadow.

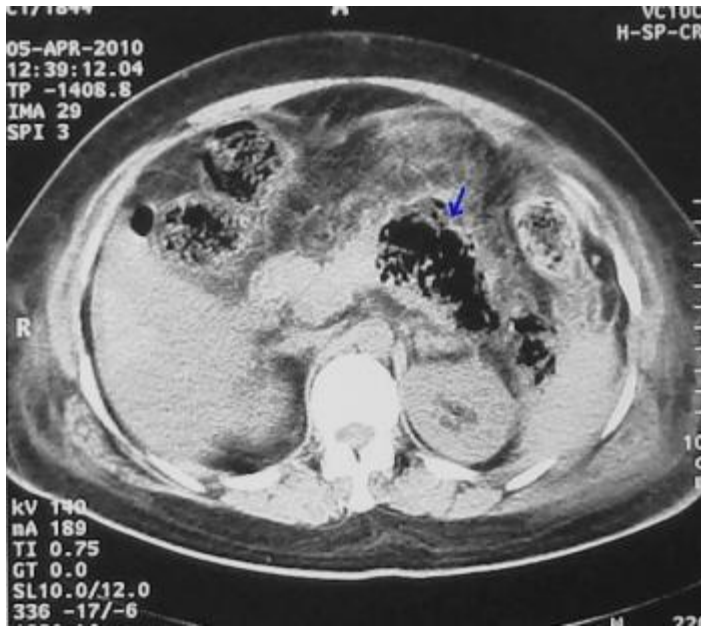


Figure 2 Axial CT examination of abdomen



CT examination shows extensive mottled gas bubbles replacing the pancreatic body and tail.

CT demonstrates emphysematous changes in the pancreas (arrow) with marked inflammatory changes in the adjacent peripancreatic fat.



CT examination at a caudal level demonstrates extension of the mottled gas locules into the left anterior para-renal space.

MeSH

Pancreatitis, Acute Necrotizing [C06.689.750.650]

Acute inflammation of the pancreas with areas of devitalized pancreatic and/or peripancreatic tissue. These necrotic areas may involve large areas of the pancreas or may be small. When a CT scan is performed with contrast media using a bolus technique, necrotic areas do not perfuse with media and are not enhanced. The lack of enhancement distinguishes necrotic tissue from the adjacent well-perfused viable pancreatic parenchyma. (From Liang et al., *Pancreas: Biology, Pathobiology, & Disease*, 2d ed, p597)

References

- [1] Emphysematous pancreatitis: The utility of CT
- [2] Emphysematous Infections of the Abdomen and Pelvis: A Pictorial Review
- [3] Emphysematous Pancreatitis. Radiological Curiosity or a Cause for Concern?
- [4] Experience of the Treatment of Emphysematous Necrotizing Pancreatitis
- [5] A case of emphysematous pancreatitis
- [6] Emphysematous Pancreatitis
- [7] Emphysematous pancreatitis: a less aggressive form of infected pancreatic necrosis?

Citation

Arora A, Kapur A, Vandana, Upreti L, Puri SK (2010, Jun. 10)

Acute emphysematous pancreatitis {Online}

URL: <http://www.eurorad.org/case.php?id=8430>