Massive Pseudo-Pneumoperitoneum After Endoscopic Necrosectomy

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Introduction

- Encapsulated peripancreatic fluid collection and walled-off necrosis are complications of acute pancreatitis. Therapeutic management with EUS-guided drainage and stent placement can cause iatrogenic complications including bleeding and perforation.
- We present a patient with symptomatic pancreatic walled-off necrosis that developed large pneumoperitoneum following necrosectomy and discuss strategies for management.

Learning Objective

- Management of walled-off necrosis
- Complications associated with EUS-guided drainage with stent placement

Case Presentation

History & Exam

39-year-old woman with history of ulcerative colitis, in remission on certrolizumab, and idiopathic necrotizing pancreatitis 4 weeks prior; presented with acute worsening sharp epigastric and left upper quadrant abdominal pain and anorexia.

Procedure

CT abdomen with contrast showed pancreatic walled-off necrosis. EUS guided drainage was performed with lumen-apposing metal (LAM) stent successfully placed. Symptoms improved and 2 weeks later EGD was performed for necrosectomy with 3 plastic double pig-tailed stents placed to assist with continued drainage.

Plan

Post Procedure, patient had abdominal distention. Emergent intubation, NG tube placement with antibiotics given and general surgery consulted for perforation. Repeat CT abdomen showed a massive pneumoperitoneum. Despite stable vitals, emergent laparoscopy was performed given the size of pneumoperitoneum. No evidence of perforation seen.

Follow Up

On post-operative day 1, patient was asymptomatic and tolerating diet. She was discharged on post-operative day 2. At 3-month follow-up, patient remained asymptomatic and plastic stents were removed.

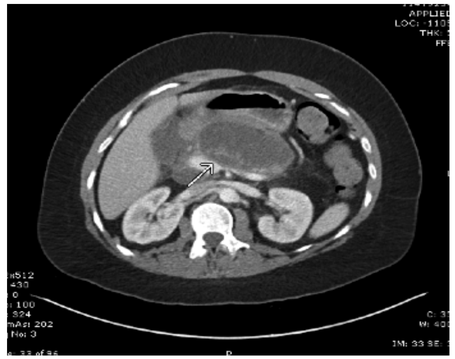

Figure 1: CT abdomen showing pancreatic walled off necrosis containing turbid fluid and debris

Figure 2: Massive pneumoperitoneum seen on CT abdomen after EUS-guided drainage and double pig-tailed stent placement for continued drainage.

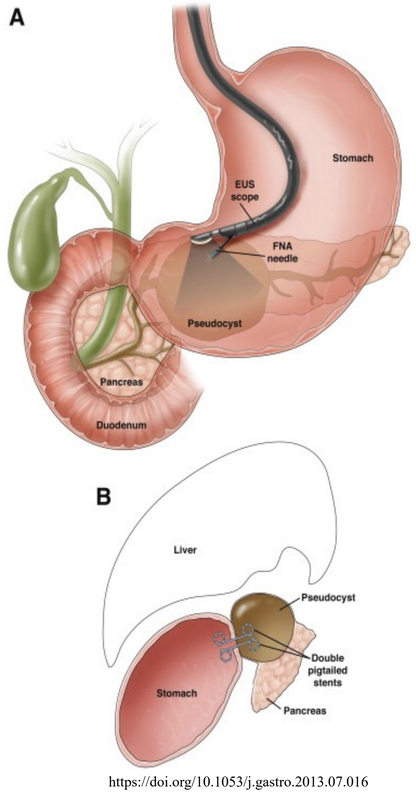

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Figure 3: (A) EUS-guided transgastric puncture of pancreatic pseudocyst (B) Transgastric stents placed across cyst-gastrostomy tract.

Discussion

Pneumoperitoneum is an uncommon but dreaded complication of EUS-guided cystogastrostomy. This occurs when there is separation of the gastric wall and the wall of the pancreatic cyst or walled-off necrosis. If perforation is detected during cystogastrostomy, it may be possible to use a LAMS to close the defect by bridging the walls or close the gastric defect endoscopically with clips or sutures. Immediate surgery (such as cyst-enterotomy with closure of the wall defect) should be performed if there is generalized contamination of the peritoneum with cyst fluid content and subsequent signs of peritonitis . Our case, to our knowledge, is the only one that describes pneumoperitoneum after endoscopic necrosectomy, two weeks after placement of LAMS. Our hypothesis is that the walled-off necrosis moved away from the gastric wall after removal of LAMS, which aided apposition of the gastric and cyst wall due to its flanges and short saddle length. Pneumoperitoneum, in the absence of peritoneal findings, is referred to as benign pneumoperitoneum. In a situation of benign pneumoperitoneum, conservative treatment with hospitalization, nothing per mouth, intravenous antibiotics and intravenous hydration have been associated with better outcomes in about 50% of patients with perforation. In our case, although the patient's vitals were stable, given the size of pneumoperitoneum and not being able to assess for signs of peritonitis, emergent laparoscopy was performed. No perforation was seen during laparoscopic assessment, which reinforces the scant literature that not all pneumoperitoneum is due to perforation and may not need emergent surgical evaluation. Further, the size of pneumoperitoneum is not a reliable parameter for management decisions.

Conclusion

Our case describes massive benign pneumoperitoneum after endoscopic necrosectomy without perforation. There is a paucity of literature on non-surgical management of post-endoscopic pneumoperitoneum and we hope that our case, will help endoscopists carefully select patients who will benefit from surgical management of pneumoperitoneum.

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