

EUS-guided transgastric drainage of caudate lobe liver abscesses

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Abbreviations: EUS, endoscopic ultrasound

Pyogenic liver abscess is a rare but serious condition resulting in significant morbidity and mortality if left untreated¹. The first line treatment for hepatic abscess is the transcatheter or surgical approach with an 80-100% success rate²⁻⁴. However, these modalities are associated with numerous risks including bleeding, biliary peritonitis, fistula formation, and patient discomfort. The caudate lobe is anatomically difficult to access percutaneously. Given its proximity to the stomach, a transgastric approach to drainage is feasible. We report two consecutive patients who underwent EUS-guided transgastric drainage of a caudate lobe abscess.

Methods

Endoscopic ultrasound (EUS) was performed using a therapeutic linear array echoendoscope (Olympus GF-UCT 140; Center Valley, PA). A 19-gauge needle (EchoTip Ultra; Cook Endoscopy, Winston-Salem, NC) was advanced into the abscess. Aspirates were obtained followed by contrast injection. A 0.035" guidewire (Jagwire; Boston Scientific, Natick, MA.) was coiled inside the cavity. Serial dilation of the hepatico-gastrostomy was performed with a 4mm Hurricane[®] RX hydrostatic balloon (Boston Scientific, Natick, MA) and an 8-10 mm CRE balloon (Boston Scientific, Natick, MA.). One or two double pigtail biliary endoprosthesis (Wilson-Cook Medical Inc., Winston-Salem, N.C.) were then placed under fluoroscopic guidance into the abscess. This resulted in immediate drainage of pus into the stomach.

Case 1

A 63 year old man with a history of metastatic pancreatic cancer presented with fever and lethargy. CT abdomen confirmed a 25 mm x 25 mm caudate lobe liver abscess (**Fig. 1**). Transcutaneous drainage was attempted; however the patient became hemodynamically unstable during the procedure. The patient developed septic shock with subsequent renal failure requiring hemodialysis and ICU admission. Given the favorable location of the abscess relative to the stomach, EUS-guided transgastric drainage was pursued. Drainage was successful, with placement

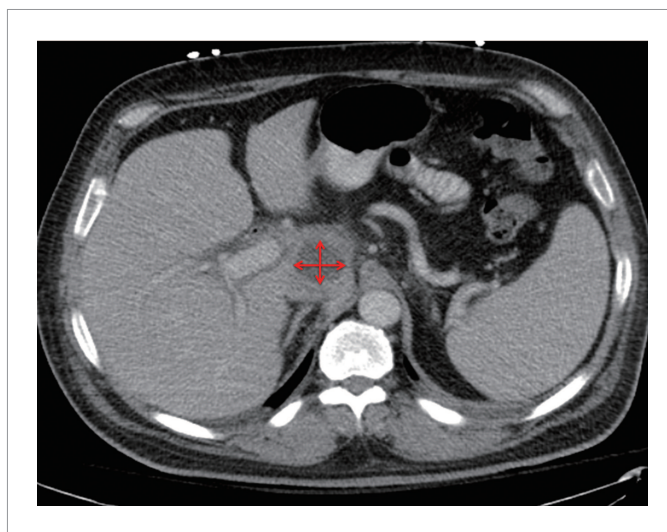


Figure 1. CT scan demonstrating caudate lobe abscess.

of two stents (7Fr/5cm, 10Fr/7cm). There were no immediate complications. After a prolonged hospitalization of 1 month he was discharged home well and able to resume treatment for his pancreatic cancer. CT scan performed 5 weeks after endoscopy confirmed resolution of the abscess. The stents were removed 46 days post endoscopy.

Case 2

A 42 yr old male with a history of diffuse large B cell lymphoma, status post bone marrow transplant, with a clinical course notable for choledocholithiasis, benign biliary stricture, and portal hypertension presented with right upper quadrant pain and fever. CT scan demonstrated a 45 mm x 21 mm caudate lobe liver abscess. EUS-guided transgastric drainage with placement of a single 7Fr/5cm double pigtail stent was successfully performed (**Fig.2**). The patient had no immediate complications. He had a prolonged admission due to pancytopenia and complications from portal hypertension. A follow-up CT scan at 6 weeks confirmed resolution of the abscess (**Fig.3**). The stent was subsequently removed 60 days post endoscopy.

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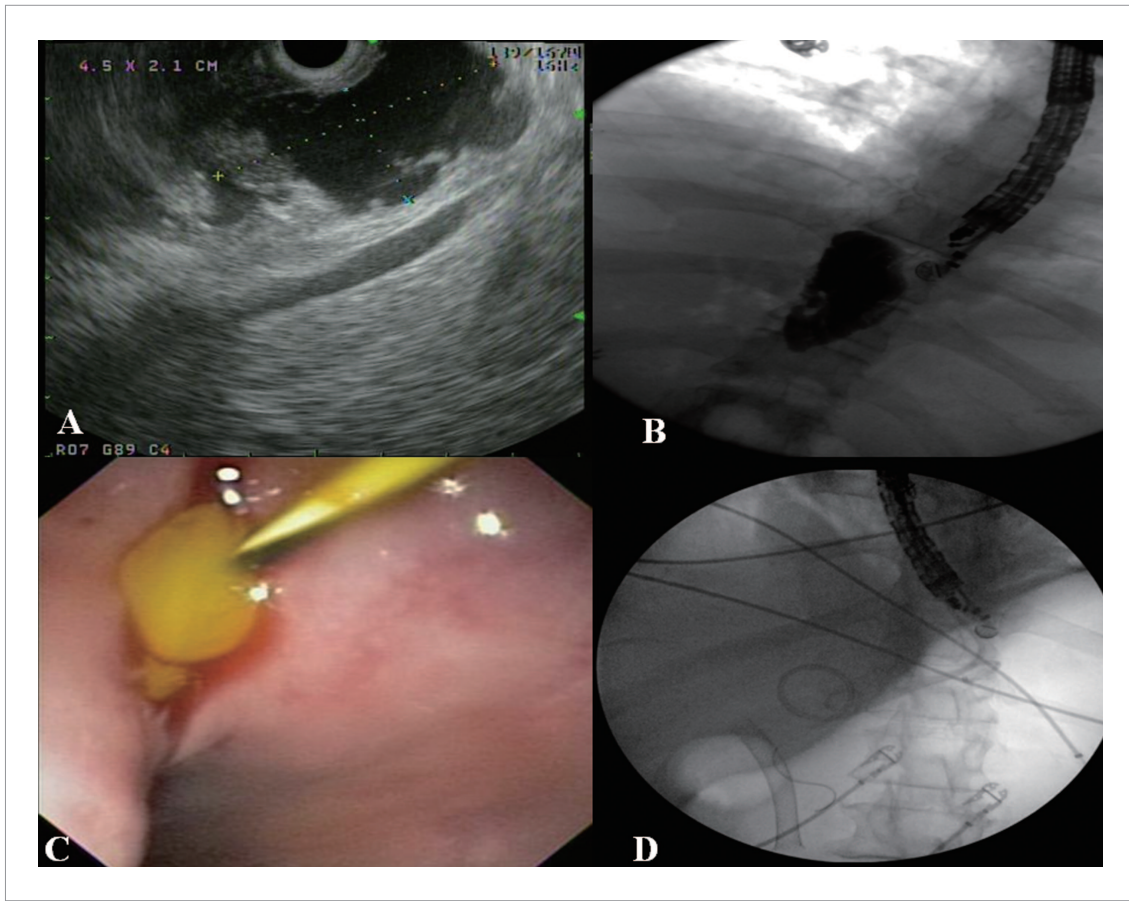


Figure 2. (A) EUS image of caudate abscess from stomach, (B) Fluoroscopy image of transgastric puncture and contrast within abscess cavity, (C) Endoscopic view with 0.035" wire inserted into abscess cavity and pus draining, (D) Fluoroscopy image post transgastric double pigtail stent placement.

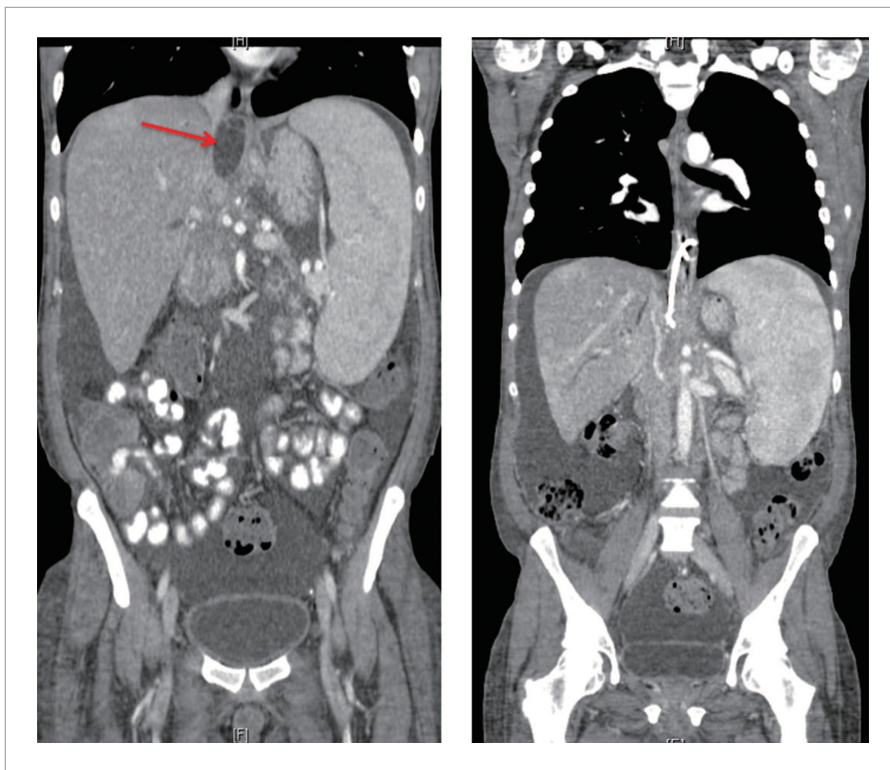


Figure 3. CT coronal reconstruction demonstrating pre and post EUS guided drainage of caudate abscess.

Discussion

As the role for therapeutic EUS continues to expand, these two cases further illustrate a new modality for draining caudate, and potentially left liver lobe abscesses in those where the transcutaneous or surgical approach may be contraindicated. There is limited published data with one recent case series and a case report demonstrating its safety and efficacy both via transduodenal and transgastric approach^{5,6}. In this article, we present two cases of a caudate lobe abscess successfully drained by EUS-guided transgastric drainage without complication. The technique used was similar to those previously described. EUS allows for easy identification of intervening vessels and thus may reduce the risk of bleeding. Furthermore by avoiding the transcutaneous route, the risk of discomfort associated with an external drain is obviated, and may allow for improved quality of life. Further experience with therapeutic EUS and the

development of improved echoendoscopes will allow for increased application in this field.

References

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Erratum:

The July 20, 2011, article by Leung et al, entitled, "DDW 2011 cutting edge colonoscopy techniques - state of the art lecture master class – warm water infusion/CO₂ insufflation for colonoscopy" (*J Interv Gastroenterol* 2011; 1:78-82), contained an error.

In figure 2, lower left panel, the legend was given as "Good prep" and should have been "Air method". The corrected figure 2 is as follows:

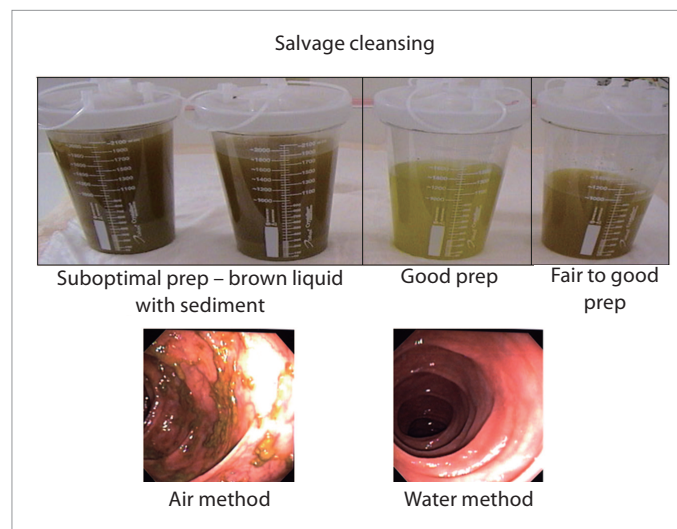


Figure 2. Most of the dirty water is in the suction bottle during insertion. Water exchange provides salvage cleansing of the colon.