



## EUS-guided cholecystogastrostomy for acute cholecystitis in a patient with an omphalocele

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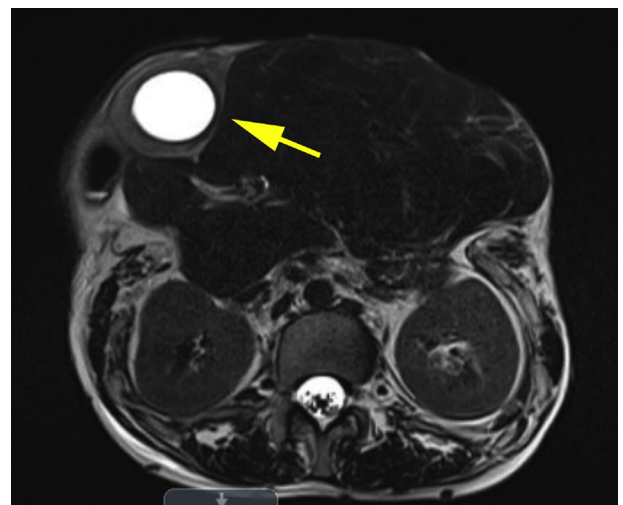
Omphalocele is a congenital abdominal wall defect at the umbilicus, which can contain variable amounts of abdominal organs covered in peritoneum.<sup>1</sup> We present a 34-year-old woman with a history of an incompletely repaired omphalocele with recurrent small-bowel obstructions and lung hypoplasia, complicated by chronic respiratory failure requiring nocturnal noninvasive ventilation. She presented with a 5-day history of right upper-quadrant abdominal pain, which was associated with focal abdominal distention and overlying erythema (Fig. 1). Her vital signs were notable for fever and tachycardia, and laboratory test results showed leukocytosis. She was initially referred to our hepatobiliary surgery team. MRCP showed a distended gallbladder with circumferential wall thickening and pericholecystic fluid consistent with

acute cholecystitis (Fig. 2), along with 2 subcentimeter obstructing stones in the cystic duct. Multidisciplinary discussions were held between the interventional radiology, hepatobiliary surgery, and gastroenterology services regarding the proper management of this patient's cholecystitis.

The treatment options for this patient included cholecystectomy, percutaneous drainage, and endoscopic drainage. Patients born with omphaloceles present a significant surgical challenge in infancy and later in life. Larger abdominal wall defects may result in feeding difficulties and poor nutritional status, including poor weight gain and smaller stature, especially in infancy, and patients with omphaloceles may require reoperations with a higher likelihood to experience small-bowel obstruction.<sup>2</sup> Thus, it can be inferred that a combination of a complex abdominal wall from prior surgeries or incomplete repair of the omphalocele and poor nutritional status may indicate poorer wound healing and increased risk for small-bowel obstruction and infection for patients with acute cholecystitis being considered for cholecystectomy. Other options to achieve gallbladder drainage include percutaneous and endoscopic routes. Percutaneous cholecystostomy tubes can cause discomfort and pain, leading to a decreased quality



**Figure 1.** Focused abdominal examination showing focal right upper-quadrant erythema and distension.



**Figure 2.** Axial MRCP image demonstrating finding of acute cholecystitis.



**Figure 3.** The proximal flange of the lumen-apposing metal stent is deployed within the gallbladder body.

of life with the possibility of a lifelong indwelling tube.<sup>3</sup> In patients with a complex abdominal wall due to a partially repaired omphalocele, who require long-term gallbladder decompression, we believe that EUS-guided cholecystogastrostomy with the use of a lumen-apposing metal stent (LAMS) offers a minimally invasive approach that achieves long-term drainage and also maximizes quality of life. Thus, the patient was referred for endoscopic drainage.

We performed an EUS-guided cholecystogastrostomy using a 15-mm × 10-mm cautery-enhanced LAMS (Fig. 3; Video 1, available online at [www.VideoGIE.org](http://www.VideoGIE.org)).<sup>3</sup> After deployment, the stent was dilated to 6 mm, resulting in purulent drainage. A 10F × 4-cm double-pigtail plastic stent was placed across the LAMS. The patient experienced significant improvement in her symptoms and returned 1

month later for removal of her LAMS and placement of two 10F × 3-cm double-pigtail plastic stents to be left indefinitely to maintain patency of the cholecystogastrostomy. She remains clinically well.

## DISCLOSURE

*Dr Law is a consultant for Olympus and the recipient of royalties from UpToDate. All other authors disclosed no financial relationships relevant to this publication.*

*Abbreviation: LAMS, lumen-apposing metal stent.*

## REFERENCES

1. Verla MA, Style CC, Olutoye OO. Prenatal diagnosis and management of omphalocele. *Semin Pediatr Surg* 2019;28:84-8.
2. Baerg JE, Munoz AN. Long term complications and outcomes in omphalocele. *Semin Pediatr Surg* 2019;28:118-21.
3. Patil R, Ona MA, Papafragkakis C, et al. Endoscopic ultrasound-guided placement of the lumen-apposing self-expandable metallic stent for gallbladder drainage: a promising technique. *Ann Gastroenterol* 2016;29:162-7.

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