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Case Report

Retreival of a migrated and incorporated lumen apposing metal stent from pancreatic body using laparoscopic technique alone

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ABSTRACT

Endoscopic or endoscopic ultrasound-guided drainage (EUS-GD) has become the mainstay of treatment for symptomatic pancreatic fluid collections. Various plastic or metal stents are available to facilitate drainage, amongst which lumen apposing metal stent (LAMS) has better efficacy and fewer complications in comparison with others. Though most drainage related complications can be managed non-operatively, stent related complications like stent migration may sometimes require a surgical retrieval. The longer the observation period, the harder the retrieval in rare cases wherein the LAMS migrates and incorporates in the retroperitoneum. When endoscopic retrieval is not an option, laparoscopic approach might be considered as an alternative to open surgery. We report a case of successful laparoscopic retrieval of a LAMS, 5 months after its migration and getting incorporated in the pancreatic head, without endoscopic assistance.

Keywords: LAMS, Pancreatic pseudocyst, Walled of necrosis, Laparoscopic retrieval, Stent migration, Pancreatic fluid collection

INTRODUCTION

Symptomatic pancreatic fluid collection (PFC) which includes pseudo pancreatic cyst and Walled of pancreatic necrosis (WOPN) are managed by using techniques like endoscopic, surgical and percutaneous transmural drainage and debridement. With the advancements in techniques and improving levels of expertise, endoscopic ultrasound guided drainage (EUS-GD) with placement of transmural plastic or metallic stents is being considered better than non EUS-GD.[1,2]

Lumen apposing metallic stent (LAMS) is an innovation with features like a dumbbell shape with broad anchoring flanges proximally and distally, large inner lumen diameter and decreased rate of migration.[3-5] Due to its larger inner diameter, it has additional advantages of easy accessibility, drainage and debridement of WOPN and endoscopic necrosectomy with high clinical success rate and few complications.[6-8] We are presenting a case report of retrieval of a spontaneously dislodged LAMS migrated through the lesser sac and incorporated in pancreatic body by using laparoscopic technique alone as endoscopy was no longer an option.

CASE REPORT

A 47 years old, smoker and alcoholic male patient presented with signs and symptoms of severe necrotizing pancreatitis. The patient was managed conservatively first and on showing improvement symptomatically, discharged with regular follow up advice.

Seven months later, this patient was again admitted in medical gastroenterology ward with complaints of intermittent pain abdomen in the periumbilical region radiating to the back.

On examination, his haemodynamic parameters were found to be normal and stable.

On palpation, the abdomen was soft with mild tenderness in the periumbilical region. A firm mass with indistinct borders was palpable in the epigastric region. Hepatosplenomegaly was not appreciated on examination. Routine blood investigations along with CECT Abdomen were done. Blood investigations were found to be within normal limits. CECT revealed an atrophic body and tail of pancreas with well-defined peripherally enhancing cystic lesion of size 184×125×96 mm along the pancreatic body and tail region extending up to the stomach bed and splenic hilum with apparent mass effect over the stomach.

Upper GI endoscopy revealed a small gastric impression over the greater curvature. After due consideration, a EUS guided lumen apposing metal stent (LAMS) placement was planned. It was successfully placed in the walled of necrosis, draining dirty fluid. Two weeks later on follow up endoscopy, the LAMS was neither found nor felt at its expected location. It was assumed that the stent had been dislodged and migrated towards the pancreas. A CECT Abdomen revealed a 31×33 mm pocket of collection in proximal pancreatic body region with LAMS stent in the fluid pocket but the other end was not in the gastric lumen.

The patient was planned for stent retrieval but he did not turn up for 5 months and later presented with pain abdomen. Since the cysto-gastric fistula had already sealed off on endoscopy and stent could neither be felt or localized, endoscopic retrieval was no longer an option. He was referred to Department of General surgery, for laparoscopic retrieval of LAMS. A Fresh CECT showed findings similar to the previous one (Figure 1).

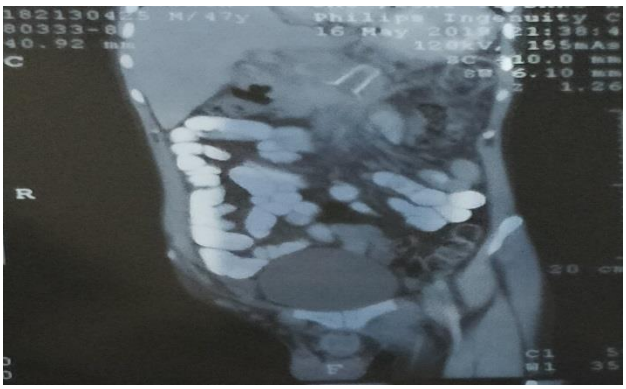

Figure 1: A preoperative CECT showing a 31×33 mm pocket of collection in proximal pancreatic body region with LAMS stent in the fluid pocket.

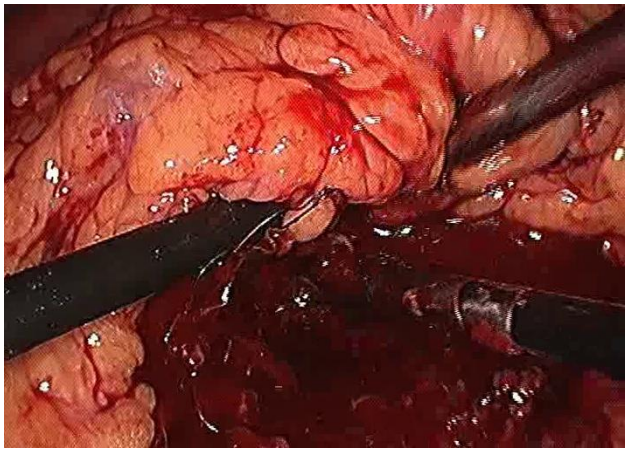

Figure 2: Appreciation of small metallic wire, which was assumed to be LAMS.

Under general anesthesia, the patient was placed in modified French position. Laparoscopy port was introduced in left mid-clavicular line at a level midway between the xiphisternum and umbilicus. another 10mm port was placed in the left mid-clavicular line just above the level of umbilicus. Two 5 mm ports, one in the left anterior axillary line and the other in right mid-clavicular line were placed, both at the level of the port for the scope. Diagnostic laparoscopy was performed, which showed no obvious visible or palpable mass. On exploration of the lesser sac, a densely adherent area was visualized extending from the pylorus to the pancreatic head. Upon gentle and skillful blunt dissection, a small metallic structure in the form of a wire was appreciated which was assumed to be the LAMS (Figure 2).

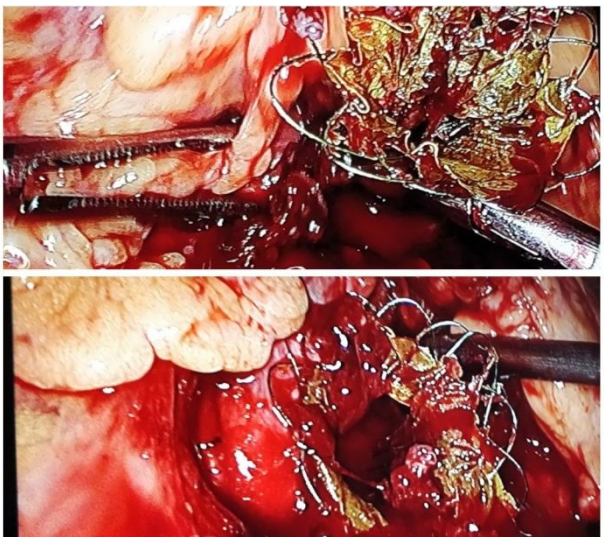

Figure 3: Circumferential blunt dissection freeing LAMS from its incorporation.

On further blunt dissection, a gush of pancreatic fluid was seen. This area was gently dissected in a circumferential approach and the LAMS was freed from its incorporation (Figure 3).

It was retrieved through the 10mm port. Gastric leak test was performed by insufflating air into the Stomach and pouring copious amount of saline in the area of dissection. No air bubbles were noted which confirmed that the stomach wall was intact. A drain was placed in the lesser sac on the pancreatic surface. The patient was kept under observation and discharged uneventfully on second post-operative day. Follow-ups were uneventful over the next two months and the patient was free from all his previous complaints.

DISCUSSION

Pancreatic pseudocyst is a pancreatic fluid collection enclosed by a wall of fibrous or non-epithelialized granulation tissue, which may be secondary to acute or chronic pancreatitis, surgery or pancreatic trauma.[9-11] In this modern scenario, better safety and efficacy of EUS-guided drainage with placement of stents is the treatment of choice with the added advantage of being less invasive, cost effective, shorter hospital stay and lower mortality, thus replacing surgical and percutaneous drainage.[12-14]

The biggest advantage of EUS-guided drainage over conventional endoscopic drainage by use of either a duodenoscope or a gastro scope, is its ability to drain non bulging pancreatic pseudocysts which make up almost 50% of all pancreatic pseudocysts.[15,16]

Plastic or metal Stents which are commonly used for transmural drainage show similar rates of success but should not be retrieved till complete resolution of pancreatic pseudocyst or at least two months since stent insertion due to increased risk of recurrence or failure of endoscopic drainage.[17,18]

Major procedure related complications include hemorrhage, infections, perforation and pancreatitis, most of which can be managed non operatively. [12,19]

Approximately 15% of the cases, the stent gets spontaneously dislodged.[20,21] This gives room for development of technically superior stents like fully covered self-expandable metal stents with antimigration system, etc.[19,22]

LAMS is the latest addition to this list. LAMS has a dislodgement and migration rate of about 19%, the second most common LAMS related complication after hemorrhage.[23,24]

Sharaiha, et al, stated in their study that rate of LAMS migration is 5.6%.[3]

In spite of these new advancements, stent migration is still a complication that cannot be completely avoided. Distal migration of these stents can cause intestinal obstruction requiring surgical intervention but most of them travel through the bowel and pass spontaneously.[24,25] Rare case of LAMS migration into the esophagus has also been reported. [26]

In most cases, the migrated stent can be retrieved endoscopically but in cases of extra-luminal loss, laparoscopic exploration remains the approach of choice. A combined endoscopic-laparoscopic approach (rendez-vous technique) is also an alternative.[19]

The unique design of LAMS with broad anchoring flanges and shorter length (1 cm), makes its retrieval all the more challenging due its ability to incorporate into structures after dislodgement and migration.[7]

The choice of retrieval of stent technique, however, varies from patient to patient and also depends on the surgeon's experience and expertise and level of center.

In this scenario, we have demonstrated that with better understanding of the anatomy, available radiological evidences and with laparoscopic expertise, the stent can be safely removed by laparoscopy alone, thus avoiding the need for simultaneous endoscopy and gastric incisions as in Rendezvous technique.

CONCLUSION

We hereby would like to conclude that with adequate laparoscopic expertise, a migrated LAMS can still be retrieved by a minimally invasive and safe laparoscopic approach alone, when endoscopic retrieval isn't possible, thus alleviating need for advanced and risky procedures with gastric incisions like Rendezvous technique and simultaneous need for endoscopy.

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REFERENCES

1. Seewald S, Ang TL, Kida M, Teng KY, Soehendra N. EUS 2008 Working Group document:evaluation of EUS-guided drainage of pancreatic-fluid collections (with video). Gastrointest Endosc. 2009;69:S13-S21.
2. Seewald S, Ang TL, Teng KY, Groth S, Zhong Y, Richter H, et al. Endoscopic ultrasound-guided drainage of abdominal abscesses and infected necrosis. Endoscopy. 2009;41:166-74.
3. Sharaiha RZ, Tyberg A, Khashab MA, Kumta NA, Karia K. Endoscopic Therapy With Lumen-apposing Metal Stents Is Safe and Effective for Patients With Pancreatic Walled-off Necrosis. Clin Gastroenterol Hepatol. 2016;14(12):1797-803.
4. Shah RJ, Shah JN, Waxman I, Kowalski TE4, Sanchez-Yague A, Nieto J, et al. Safety and Efficacy of Endoscopic Ultrasound-Guided Drainage of Pancreatic Fluid Collections With Lumen- Apposing Covered Self-Expanding Metal

Stents. Clin Gastroenterol Hepatol. 2015;13(4):747-52.
5. Siddiqui AA, Adler DG, Nieto J, Shah JN, Binmoeller KF, Kane S, et al. EUS-guided drainage of peripancreatic fluid collections and necrosis by using a novel lumen-apposing stent:a large retrospective, multicenter U.S. experience (with videos). Gastrointest Endosc. 2016;83(4):699-707.
6. Siddiqui AA, Kowalski TE, Loren DE, Khalid A, Soomro A, Mazhar SM, et al. Fully Covered Self-Expanding Metal Stents Versus Lumen-Apposing Fully Covered Self-Expanding Metal Stent Versus Plastic Stents for Endoscopic Drainage of Pancreatic Walled-off Necrosis: Clinical Outcomes and Success, Gastrointestinal Endosc. 2017;85(4):758-65.
7. Goldman IA, Yang J, Scheinfeld MH. Imaging of Lumen-Apposing Metal Stents in Abdominopelvic Applications. AJR. 2019;213:602-9.
8. Kumta NA, Tybergb A, Bhagatb VH, Siddiquic AA, Kowalski TE, Loren DE, et al. EUS-guided drainage of pancreatic fluid collections using lumen apposing metal stents:An international, multicenter experience. Dig Liver Dis. 2019.
9. Jacobson BC, Baron TH, Adler DG, Davila RE, Egan J, Hirota WK, et al. ASGE guideline: The role of endoscopy in the diagnosis and the management of cystic lesions and inflammatory fluid collections of the pancreas. Gastrointest Endosc. 2005;61:363-70.
10. Habashi S, Draganov PV. Pancreatic pseudocyst. World J Gastroenterol. 2009;15:38-47.
11. Bradley EL. A clinically based classification system for acute pancreatitis. Summary of the International Symposium on Acute Pancreatitis, Atlanta, Ga, September 11 through 13, 1992. Arch Surg. 1993;128:586-90.
12. Dumonceau JM, Macias-Gomez C. Endoscopic management of complications of chronic pancreatitis. World J Gastroenterol. 2013;19:7308-15.
13. Kato S, Katanuma A, Maguchi H, Takahashi K, Osanai M, Yane K, et al. Efficacy, safety, and long-term follow-up results of EUS-guided transmural drainage for pancreatic pseudocyst. Diagn Ther Endosc. 2013;2013:924291.
14. Fabbri C, Luigiano C, Maimone A, Polifemo AM, Tarantino I, Cennamo V. Endoscopic ultrasound-guided drainage of pancreatic fluid collections. World J Gastrointest Endosc. 2012;4:479-88.
15. Barthet M, Lamblin G, Gasmi M, Vitton V, Desjeux A, Grimaud JC. Clinical usefulness of a treatment algorithm for pancreatic pseudocysts. Gastrointest Endosc. 2008;67:245-52.
16. Panamonta N, Ngamruengphong S, Kijsirichareanchai K, Nugent K, Rakvit A. Endoscopic ultrasound-guided versus conventional transmural techniques have comparable treatment outcomes in draining pancreatic pseudocysts. Eur J Gastroenterol Hepatol. 2012;24:1355-62.
17. Cahen D, Rauws E, Fockens P, Weverling G, Huibregtse K, Bruno M. Endoscopic drainage of pancreatic pseudocysts: long-term outcome and procedural factors associated with safe and successful treatment. Endoscopy. 2005;37:977-83.
18. Arvanitakis M, Delhaye M, Bali MA, Matos C, De Maertelaer V, Le Moine O, et al. Pancreatic-fluid collections:a randomized controlled trial regarding stent removal after endoscopic transmural drainage. Gastrointest Endosc. 2007;65:609-19.
19. Patrzyk M, Dierzek P, Glitsch A, Paul H, Heidecke CD. Retrieval of a self-expanding metal stent after migration and incorporation in the omental bursa, using a gastroscopic-transgastric laparoscopic rendezvous technique. J Minim Access Surg. 2015;11(3):207-9.
20. Penn DE, Draganov PV, Wagh MS, Forsmark CE, Gupte AR, Chauhan SS. Prospective evaluation of the use of fully covered self-expanding metal stents for EUS-guided transmural drainage of pancreatic pseudocysts. Gastrointest Endosc. 2012;76:679-84.
21. Varadarajulu S, Wilcox CM. Endoscopic placement of permanent indwelling transmural stents in disconnected pancreatic duct syndrome:does benefit outweigh the risks? Gastrointest Endosc. 2011;74:1408-12.
22. Téllez-Ávila FI, Villalobos-Garita A, Ramírez-Luna MÁ. Use of a novel covered self-expandable metal stent with an anti-migration system for endoscopic ultrasound-guided drainage of a pseudocyst. World J Gastrointest Endosc. 2013;5:297-9.
23. Mukai S, Itoi T, Baron TH, Sofuni A, Itokawa F, Kurihara T, et al. Endoscopic ultrasound-guided placement of plastic vs. biflanged metal stents for therapy of walled-off necrosis:a retrospective single-center series. Endoscopy. 2015;47:47-55.
24. Chandran S, Efthymiou M, Kaffes A, Chen JW, Kwan V, Murray M, et al. Management of pancreatic collections with a novel endoscopically placed fully covered self-expandable metal stent: a national experience. Gastrointest Endosc. 2015;81:127-35.
25. Razzak A, Larsen M, Irani S, Gan SI, Ross A. Small-bowel obstruction due to a migrated lumen-apposing metal stent. Gastrointest Endosc 2016;84:867-69.
26. Abdel-Aziz Y, Renno A, Hammad T, Nawras A. Rare esophageal migration of AXIOS stentused for walled-off pancreatic necrosis drainage. ACG Case Rep J. 2017;4:e73.

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