Self Expanding Metal Stents (SEMS) for Management of Peri-Pancreatic Fluid Collections (PFC): A Single Center Experience

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BACKGROUND:

- Endoscopic management of peri-pancreatic fluid collections (PFC) with or without organizing necrosis decreases morbidity and mortality compared to early surgical management.
- Plastic stents are most often used for transmural drainage, although the use of self-expanding metal stents (SEMS) has been reported.
- The theoretical benefits of SEMS include a large diameter for drainage of particulate debris and facilitation of endoscopic necrosectomy.

AIMS:

- To evaluate the efficacy and safety of SEMS for management of PFC.
- Primary outcome
  - Successful drainage defined as 50% or greater reduction in PFC cross-sectional area
- Secondary outcomes :
  - Complete resolution of PFC
  - Time to resolution
  - Complications – early and late

METHODS:

- A single-center retrospective review was performed of consecutive patients undergoing endoscopic management of PFC using SEMS from January through November 2011
- Electronic database and medical records were reviewed for demographics, medical history, imaging and procedural data

DEMOGRAPHICS:

- Thirteen patients with 14 PFCs were included
- Mean age = 63 years (range 50-85), 77% were male
- Gallstones were the cause of pancreatitis in 69%
- Mean time from initial diagnosis of acute pancreatitis to endoscopic drainage of PFC was 9.1 weeks (range 1-28)

RESULTS:

- Successful PFC drainage was achieved in 12/14 PFCs (86%) to date with a mean reduction in cross-sectional area of 87.5%
- Mean number of procedures per patient = 1.9
- A single fully covered biliary SEMS (10mm X 60 or 80mm) was initially placed in 12 of 14 cysts (86%) with one or two double-pigtail plastic stents through the SEMS lumen to prevent migration.
- The two remaining cysts were initially drained with plastic stents and subsequently revised to fully covered esophageal SEMS due to drainage failure from debris occluding the track. Both patients underwent successful necrosectomy (4 sessions in one case and 5 in the other).
- Route of drainage: transgastric n=13, transduodenal n=1
- Complete resolution occurred in 4/13 (29%) after a mean follow-up of 7.2 weeks
- Complications:
  - Stent occlusion (n=3)
  - Migration (n=1)
  - Bleeding attributed to SEMS (n=1)

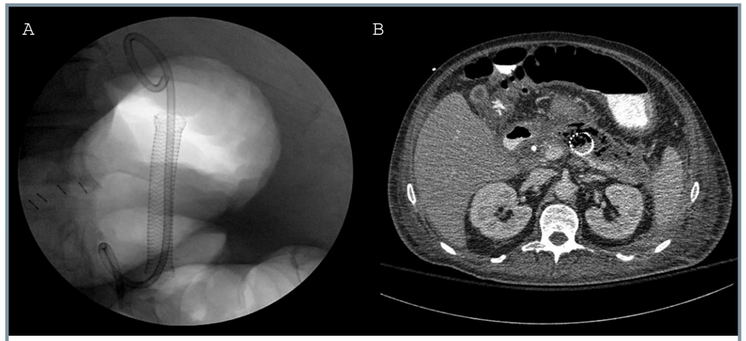

Figure 1: **(A)** Fluoroscopic view of fully covered SEMS with double pigtail plastic stent. **(B)** CT image of esophageal stent within PFC.

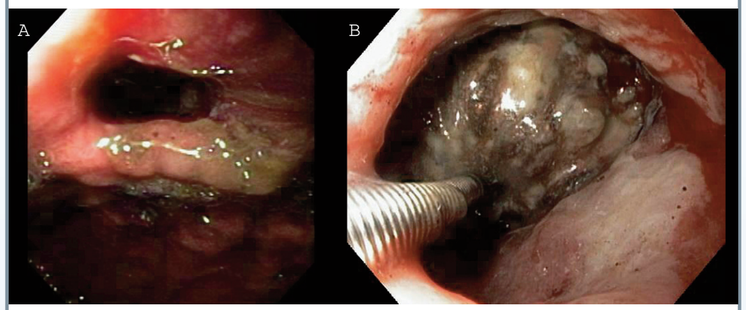

Figure 2: **(A)** Cystgastrostomy following removal of fully covered esophageal stent. **(B)** Phlegmon and necrosectomy using a therapeutic endoscope.

CONCLUSION:

- Fully covered self-expanding metal stents are an effective option for initial endoscopic access of peri-pancreatic fluid collections for the purposes of drainage and necrosectomy.
- Successful management can be achieved in the majority of patients with relatively few procedures.
- SEMS can be effectively utilized as salvage therapy for PFCs that fail endoscopic management with plastic stents and prevent the need for surgery or percutaneous drainage.