**METHODS:** A retrospective chart review was performed for all (n = 47) PC patients referred for EUS-guided fiducial placement by a single endosonographer (MSB) at a tertiary cancer center between 2016 and 2019. Data regarding EUS-related technical details and adverse events were recorded. The continuous visibility of the fiducial markers was assessed by an experienced medical physicist on simulation CT and during the final treatment fraction on cone beam CT.

**RESULTS:** During the study period, 67 PC patients underwent placement of 174 fiducial markers under EUS guidance (Table 1). Technical success rate of fiducial placement was 97%. Technical difficulty due to intervening blood vessels was noted in 2 (3%) patients. EUS evaluation showed duodenal invasion in one case and fiducial placement was cancelled. All patients received perioperative antibiotics and no immediate or delayed adverse events were reported. The average time to simulation CT after marker placement was 4.6 days (range, 1-53). 64 (92%) patients received fiducial post fiducial placement (Table 2). Of the total 174 fiducials placed, 145 (89%) fiducial markers were clearly visible on both the CT simulation and cone beam CT scan acquired on the last day of fiducial delivery. 9 (5%) fiducial were not useful for fiducial delivery most likely due to migration or poor visibility. No major fiducial-related toxicity was reported.

**CONCLUSION:** Our results demonstrate that EUS-guided fiducial placement is safe and effective in target volume delineation, facilitating fiducial delivery in PC patients. Further clinical trials are needed to determine the optimal type of fiducial to place under EUS guidance and the survival benefits in patients with pancreatic cancer.

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How Successful is Endoscopic Retrograde Cholangiopancreatography in Patients With Biliary Obstruction Post-Pancreaticoduodenectomy?

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**INTRODUCTION:** Endoscopic retrograde cholangiopancreatography (ERCP) is the accepted therapy for the management of biliary obstructions, however, in patients who have had previous pancreaticoduodenectomy (PD) i.e. Whipple’s procedure, due to the altered surgical anatomy, the ability to perform ERCP is challenging. In this study, we examine our experience at a large tertiary cancer center performing ERCPs for biliary obstructions in patients who are post-PD.

**METHODS:** This was a retrospective review from 2006 to 2018 of all patients referred for the management of biliary obstructions post-PD. Outcomes included technical success (ability to treat the stricture, e.g. dilation or placement of a stent) and clinical success (decrease in bilirubin to normal or 50% of peak value within 2 weeks) rates.

**RESULTS:** A total of 66 patients were included in the study. The mean age was 67.7 years (SD +/- 11.6) and 58 patients (87.9%) were male. The most common indications for PD were duodenal adenocarcinoma (30 patients; 30.3%) followed by pancreatic adenocarcinoma (16; 24.4%). In terms of surgery, the mean length of the anastomosis limb was 45.7 cm (SD +/- 8.34). The most common indications for ERCP were cholangitis (31 patients; 49%), followed by a biliary obstruction without cholangitis (11, 16.7%). The mean length of procedure was 66.7 minutes (58-94 minutes).

**CONCLUSION:** ERCP post-PD can be challenging due to the surgical anatomy and inability to use common endoscopes and instruments. Our study demonstrates that nevertheless, endoscopic biliary decompression can still be successful by experienced endoscopists in the majority of patients post-PD, with minimal adverse events.

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Incremental Value of Endoscopic Ultrasound in Detecting Pancreatic Lesions in Patients With MEN1

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**INTRODUCTION:** Multiple endocrine neoplasia type 1 is an inherited disorder that affects the endocrine glands caused by a mutation in the MEN1 gene. MEN1 is associated with pituitary, parathyroid and pancreatic lesions (specifically tumors of islet cells and neuroendocrine tumors) and the prevalence of pancreatic lesions can range as high as 75%. Currently, CT and MRI are used to investigate pancreatic lesions in MEN1. Endoscopic ultrasound can also be used to assess the pancreas and also allows for tissue sampling. The main disadvantage of EUS is that it is invasive and requires an endoscopy with anesthesia to perform. In this study, we examine the incremental value of performing EUS in patients with MEN1 who were referred after CT or MRI.

**METHODS:** This was a retrospective study of all patients with a mutation-proven MEN1 diagnosis who underwent EUS between 2009 and 2018. Patients who had previous resection for pancreatic lesions were excluded. The cross-sectional image closest to the date of the EUS exam was used as a comparison. Relevant data including lesion characteristics were extracted. The location of the lesions were also recorded as multiple locations could affect future treatment options.

**RESULTS:** A total of 42 patients with MEN1 underwent EUS for pancreatic lesions. The mean age was 51.9 years (SD +/- 13.7) and 24 (57%) patients were female. A total of 31 patients had a CT while 11 patients had an MRI to compare to EUS. For patients who underwent CT followed by EUS, CT showed 45 lesions (1.3 lesions per procedure) while EUS showed 78 pancreatic lesions (2.5) (P < 0.05). The mean size of the largest lesion was 22.4 mm (SD 14) with EUS, and 16.7 mm (SD 17). In 14 cases, EUS saw a lesion in an area of the pancreas that was not seen on CT, while only in 3 cases the CT saw a lesion in a location not seen on EUS. Twenty-five (61%) of patients in the CT group underwent FNA to obtain cytology. For patients who underwent MRI followed by EUS, MRI showed 19 lesions while EUS showed 48 lesions (P < 0.05). The mean size of the largest lesion was 14.3 (SD 10.5) with EUS, and 8.9 with MRI (SD 7.8). In 8 cases, EUS saw a lesion in a territory that was not seen on MRI. Six (55%) patients in the MRI comparison underwent FNA. Overall, no complications were noted from performing EUS or FNA.

**CONCLUSION:** Despite advances in imaging by CT and MRI, EUS continues to play an important incremental role in detecting and mapping pancreatic lesions in patients with MEN1.

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POEM Is a Safe and Effective Treatment for Achalasia: A Large Single Center Experience

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**INTRODUCTION:** Achalasia is a primary motility disorder characterized by anestesia and failure of lower esophageal sphincter relaxation. Traditionally, treatment modalities have consisted of drug therapy, botulinum toxin injections, laparoscopic Heller myotomy, and balloon pneumatic dilatation. However, in the past several years, the novel technique peroral endoscopic myotomy (POEM) has gained popularity, as prior studies have suggested that it offers excellent short-term outcomes. In this study, we analyze the efficacy of POEM with a focus on both short-term and long-term outcomes.

**METHODS:** This retrospective study utilized collected data at our tertiary referral center. A total of 71 patients underwent POEM. 18 patients were lost to follow-up post-procedure. 47 patients were included in the short-term assessment, defined as less than 6 months removed from the procedure, while 24 patients were included in the long-term assessment, defined as greater than or equal to 6 months removed from the procedure. Eckhardt score was assessed before POEM and afterwards for patients who underwent MRI followed by EUS, MRI showed 19 lesions while EUS showed 48 lesions (P < 0.05). The mean size of the largest lesion was 14.3 (SD 10.5) with EUS, and 8.9 with MRI (SD 7.8). In 8 cases, EUS saw a lesion in a territory that was not seen on MRI. Six (55%) patients in the MRI comparison underwent FNA. Overall, no complications were noted from performing EUS or FNA.

**CONCLUSION:** Despite advances in imaging by CT and MRI, EUS continues to play an important incremental role in detecting and mapping pancreatic lesions in patients with MEN1.
decreased at longer-term follow-up, and there were no adverse outcomes. In short, this study supports that POEM is a safe, effective, and durable option for the treatment of achalasia.

**INTRODUCTION:** Endoscopic submucosal dissection (ESD) is superior to endoscopic mucosal resection (EMR) for treatment of superficial gastrointestinal neoplasia because it is associated with increased en bloc resection and lower rates of local recurrence. However, ESD is a technically demanding procedure with increased procedure time and has potential for serious adverse events. To overcome the procedural difficulty of ESD, various traction methods such as clip-line method, clip and snare method and internal traction method, have been developed to provide counter-traction to expose the dissection plane and allow safe and effective submucosal dissection. A number of studies have compared efficacy of traction-assisted ESD (T-ESD) and conventional ESD (C-ESD) but results are conflicting. We conducted a meta-analysis to assess the efficacy of T-ESD.

**METHODS:** All clinical studies published up to April 2019 comparing the efficacy and safety of T-ESD and C-ESD were identified using electronic bibliographic searches of PubMed, Cochrane Library and ClinicalTrials.gov. Both randomized controlled trials (RCT) and observational studies were included in this analysis. Two independent reviewers conducted data extraction and quality assessment. Discrepancies were resolved by consensus. Efficacy and safety outcomes were compared using a random-effects model. Meta-analysis was performed usingReview Manager (RevMan) software.