A Comparison of Radiation Exposure During ERCP by Different Fluoroscope Techniques

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INTRODUCTION: Endoscopic retrograde cholangiopancreatography (ERCP) is an endoscopic procedure performed for multiple diagnostic and therapeutic indications. It carries benefits and risks like all other interventions. We focused on radiation exposure to patients and staff. In the literature review, we found that radiation dose is lower when radiation administration is physician-controlled, and as the physician becomes more experienced, they utilize less radiation. The aim was to compare different operation techniques of radiation administration during ERCP.

METHODS: This was a retrospective study of all 437 ERCP procedures performed at a tertiary care hospital between April 2015 and April 2017. Data were collected from the hospital electronic system and included demographics, procedure indication, fluoroscopy time (FT), dose area product (DAP), degree of difficulty as per American Society of Gastrointestinal Endoscopy (ASGE) recommendations. Mean FT and DAP exposed between endoscopist-controlled (EC) compared to technician-controlled (TC).

RESULTS: Of the 437 cases analyzed 45.5% males, and the mean age was 56.7. EC was 187 cases, representing 42.79%. The mean fluoroscopy time (FT) was 2.107 ± 2.0 minutes. The mean dose-area product (DAP) was 15227.37 Gy-cm2 for all procedures. The degree of ERCP difficulty was graded from 1-4 as per ASGE. Level 1 TC procedures had a mean FT and DAP of 1160 minutes and 12644.72 Gy-cm2, respectively; level 1 EC procedures were 314 minutes and 12886.71 Gy-cm2, respectively. For level IV, TC procedures the mean FT was 2539 minutes, and the mean DAP was 19469.94 Gy-cm2. For level IV EC procedures, the mean FT was 4890 minutes, the mean DAP was 37921.00 Gy-cm2.

CONCLUSION: This study did not show a significant difference in radiation dose between EC and TC except in ASGE level IV, where a significant increase noticed in the EC group. The results of multiple other fluoroscopic studies in urology and cardiology showed that when the procedure is physician-controlled, radiation administered is similar or lower than TC. This difference in comparison to the other studies could be attributed to the endoscopist attention divided into multiple fronts, including doing the procedure that predisposes them to push on the pedal for longer than intended while manipulating the scope and leading the team. Although these results are inconclusive, it does shed light on the importance of further studies on radiation administration techniques for patients and staff safety.
INTRODUCTION: GPOEM is an emerging therapy for refractory gastroparesis. The significance of changes in gastric emptying study (GES) results following GPOEM remains to be determined. This study aims to compare clinical outcomes in patients with normalization of GES post-GPOEM to those with delayed GES post-GPOEM for refractory gastroparesis.

METHODS: A single-center retrospective study of patients who underwent GPOEM for refractory gastroparesis from 2017 to 2019 was performed. Patients had 4-hour solid-phase scintigraphic GES performed before and 3 months post-GPOEM. Normalization of GES was defined as <10% residuals at 4 hours after GPOEM. Primary outcomes measured included GES results pre and post-GPOEM as well as clinical symptom responses as measured by the Gastroparesis Cardinal Symptom Index (GCSI), a validated questionnaire with 3 subscores.

RESULTS: A total of 13 patients underwent GPOEM for refractory gastroparesis with GES obtained pre and post-GPOEM. Seven out of 13 (54%) patients normalized their GES at 4 hours after GPOEM. The etiology of gastroparesis was postsurgical in 4 (57%) patients with normalized GES and 5 (83%) patients with delayed GES post-GPOEM. Chronic opiate use was found in 3 (43%) of patients with delayed GES post-GPOEM vs 0% of those with normalized GES post-GPOEM.

CONCLUSION: Patients with normalized GES post-GPOEM may be a predictor for clinical success in refractory gastroparesis.

S0954

Compliance With ASGE Quality Indicators for Endoscopic Ultrasound Reports in the Evaluation of Pancreatic Cancer: Comparison of Community and Academic Practices

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INTRODUCTION: The American Society for Gastrointestinal Endoscopy (ASGE) has put forth a list of quality indicators (QI) for EUS which evaluate key steps that provide endoscopists targets to improve their practice. This study aims to evaluate the quality of EUS performed at our center (AMC) compared to referring community hospitals (OSH) to help guide future practice.

METHODS: A total of 207 EUS reports performed at AMC from 2017 to 2019 were analyzed. The presence or absence of an intraprocedural complication (100% vs 86.1%, P < 0.001), listing of an ASGE approved indication for EUS (99.5% vs 88.9%, P < 0.001), including total number of ASGE QI (6.7 ± 4.0 vs 5.9 ± 5.0, P < 0.001), use of an on-site cytopathologist (68.9% vs 52.8%, P = 0.015), vascu lar involvement documentation (78.5% vs 65.3%, P = 0.039), lymph node involvement documentation (89.3% vs 77.8%, P = 0.027), and TNM classification (56.5% vs 19.4%, P = 0.001) were significantly higher in the AMC EUS reports. EUS-FNA/B revealed malignancy in 88.9% cases at the AMC and 76.4% at OSH (P < 0.001).

CONCLUSION: In our cohort of patients with resected pancreatic cancer who had previously undergone EUS, the quality of EUS reports from an AMC were superior to OSH EUS reports based on ASGE QI for EUS. Furthermore, there was a statistically significant increase in the quality of EUS reports from an AMC compared to OSH EUS reports based on ASGE QI for EUS.

S0994

Novel Axially Parallel Endoscopic Submucosal Dissection Knife vs Insulated Tip Endoscopic Submucosal Dissection Knife: Outcomes of a Randomized ex-vivo Pilot Study

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INTRODUCTION: Endoscopic Submucosal Dissection (ESD) is utilized for the treatment of large gastrointestinal tract lesions or lesions not amenable to standard endoscopic mucosal resection. Insulated tip (IT-ESD) knife is a commonly used knife for ESD. A recently axially parallel ESD (AP-ESD) knife has shown promising results in tissue resection. The primary aim of this study was to compare the efficacy, safety, physical and mental workload of AP-ESD knife to IT-ESD knife in ex vivo models.

METHODS: This was a randomized-controlled, pilot study comparing IT-ESD to AP-ESD knife in ex-vivo porcine models. AP-ESD knife is a single use, electrocautery enhanced knife that allows for safe dissection and low risk of perforation given the parallel orientation of the knife to the mucosa. A total of 18 participants (9 in each group divided into 2 groups (group 1: AP-ESD followed by IT-ESD, group 2: IT-ESD followed by AP-ESD). A standard template was used to create 2 × 2 cm gastric lesions. The primary outcome was complete en-bloc resection Secondary outcomes included differences in procedure time, perforation rate, and National Aeronautics and Space Administration Task Load Index (NASA-TLX) to assess physical and mental workload.

RESULTS: 18 participants each performed 2 tissue resections (1 AP-ESD and 1 IT-ESD), for a total of 36 procedures. Complete en-bloc resection was observed in 33 models (resection rate 91.6%). No differences were observed in complete resection or perforation rate between IT-ESD and AP-ESD (88.2% vs 94.4%, P = 0.51 and 11.8% vs 11.1%, P = 0.95, respectively). Participants had a longer time with AP-ESD (1045 ± 779 vs 783 ± 532 seconds, P = 0.04) however there was no difference in time demand using total NASA TLX (33 ± 11 vs 39 ± 9, P = 0.07). While experts (N = 9) had longer time with AP-ESD (895 ± 649 vs 895 ± 383, P = 0.05), there was no difference in resection rate, perforation rate or NASA TLX demand. On the other hand, Novices (N = 9) showed no difference in resection rate, perforation rate or procedure time however did have higher demand with AP-ESD (45 ± 9 vs 37 ± 11, P = 0.05).

CONCLUSION: AP-ESD knife yielded similar rates of resection and perforation compared to a standard IT-ESD knife. Experts endoscopists required more time for dissection, likely due to an undefined learning curve with this new device and extensive familiarity with conventional knives.