Musculoskeletal Pain Symptoms and Injuries Among Endoscopists Who Perform ERCP
Presidential Poster Award
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Introduction: The leaded protective gear worn, patient and endoscopist positioning, and longer average procedural time places endoscopists who perform endoscopic retrograde cholangiopancreatography (ERCP) at an increased risk for injuries as compared to other endoscopists. While multiple studies have investigated the prevalence of various pain symptoms and injuries among endoscopists, only one has been carried out in endoscopists who perform ERCP, and none have investigated potential predisposing risk factors.

Methods: An anonymous electronic survey containing 23 questions was sent to 3,276 gastroenterologists. Only providers that performed ERCPs were asked to respond. Participants were only allowed to select one musculoskeletal pain symptom and one musculoskeletal injury thus enabling us to evaluate the predominant symptom or injury in each participant.

Results: A total of 203 surveys were completed. Variables that were assessed included sex, glove size, average number of ERCPs performed per year, types of lead gowns worn, time period ERCPs were performed prior to symptom onset, patient positioning, and the presence or absence of fluoroscopy tables and monitors with adjustable heights, and anti-fatigue matting. Of the 203 respondents, 91% reported a musculoskeletal pain symptom. 42% attributed this pain to performing ERCPs. The most prevalent pain symptoms were neck pain (24%), and lower back pain (17%). 48% of respondents reported a musculoskeletal injury. 16% attributed these injuries to performing ERCPs. The most prevalent musculoskeletal injuries were De Quervain's Tenosynovitis (16%), and cervical radiculopathy (12%). Among the respondents, only 36% used anti-fatigue matting, 40% wore two-piece lead gowns and 74% weren't aware of...
the thickness of their lead gown. Only 25% of participants had received any education/training on ergonomics in endoscopy and 71% stated they are interested in learning more about preventative strategies regarding ERCP-related injuries.

Conclusion: The majority of endoscopists who perform ERCPs suffer from a musculoskeletal pain symptom and almost half report a musculoskeletal injury. Further investigation regarding risk factors and preventative strategies is warranted. Only a small portion of advanced endoscopists report having received any training on ergonomics and the majority are interested in learning more. More information and education regarding ergonomics should be included during fellowship and postgraduate training.

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Introduction: The advent of endoscopic ultrasound (EUS)-guided celiac plexus block (CPB) and celiac plexus neurolysis (CPN) has provided immeasurable benefit for patients with pain from chronic pancreatitis and pancreatic malignancies. There are differences in efficacy based on indication and protocol used for CPN and CPB. Here we aim to characterize efficacy, safety, and variations in protocol of both EUS-guided CPB and CPN by performing a systematic review of the literature.

Methods: Using predefined keywords a search was performed using the EMBASE, Medline, and Cochrane databases through January 2018. Abstracts that discussed the outcomes of EUS-guided CPN and/or CPB were considered for inclusion. Data was abstracted from all papers, including demographic information, indication for CPN and CPB, protocol used for CPN and CPB, outcomes of intervention, and complication rates of endoscopy. Weighted data was used to calculate the efficacy and complications.

Results: Following a database search, 437 abstracts were reviewed. 35 studies were selected for data abstraction of which 8 were randomized trials, 16 prospective, and 11 retrospective. 1290 patients underwent CPN and 714 underwent CPB. In those undergoing CPB and CPN, the main indications were chronic pancreatitis (98%, 698/714) and pancreatic cancer (99%, 1278/1290) respectively. In studies reporting the rate of response, overall initial response rate was 64% (873/1369). CPN and CPB had an initial response rate of 65% (482/745, range 25-100%) and 63% (391/624, range 0-100%) respectively. When celiac ganglia were targeted, response was 74% (68/92, range 65-94%). Duration of response varied widely across all studies and interpretation was limited by duration of follow up. No deaths or perforations were reported. There was 1 upper gastrointestinal bleed and 1 peri-pancreatic abscess attributed to the intervention. The most common side effects were transient diarrhea and transient hypotension. In regards to anesthetic agents used, bupivacaine 0.25-0.75%, lidocaine 1.0-2.0%, and xylocaine 1.0% were all used. Tramcainolone was used in doses ranging from 40-160 mg. Finally, alcohol 95-99% was used in doses ranging from <5 ml to 20 ml. One study looked at the efficacy of phenol 7% as a neurolytic agent in those intolerant of alcohol.

Conclusion: Overall, CPB and CPN appear to be effective and safe modalities at controlling pain. Due to variations in protocol, clinical guidelines are required to outline best-practice for both EUS-guided CPB and CPN.

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Diagnostic Yield of Deep Biopsy via Endoscopic Submucosal Dissection for the Diagnosis of Upper Gastrointestinal Subepithelial Tumors: A Systematic Review and Meta-Analysis
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Introduction: Upper Gastrointestinal (GI) sub-epithelial tumors (SETs) can arise from any layer of the gastrointestinal tract and are mostly found during an endoscopy. Endoscopic Ultrasound guided fine-needle aspiration and biopsy (EUS-FNA/EUS-FNB) has been conventionally used for tissue diagnosis. However, it’s utility may be limited due to inadequate tissue sampling. Deep Biopsy (DB) via Endoscopic Submucosal Dissection (ESD) is emerging as an alternative technique to EUS-FNA/EUS-FNB with increased diagnostic yield of upper GI SETs. The evidence is based on observational studies as randomized control trials are lacking. Thus, we conducted this systematic review and meta-analysis to report the overall diagnostic yield of DB via ESD for upper GI SETs.

Methods: PubMed, Cochrane Library and Web of Science databases were searched to identify studies (from commencement to Oct 2017) reporting DB via ESD technique for diagnosis of upper GI SETs. Primary outcome of interest was overall diagnostic yield of the DB via ESD for upper GI SETs. Secondary outcome was to study complications in terms of perforation and major bleeding. Major bleeding was defined as bleeding requiring blood transfusion or endoscopic intervention. The meta-analysis was performed using Der Simonian and Laird random effect model.

Results: Total of 8 studies comprising of 227 patients (106 males and 121 females) with mean age of 57 years were included in the final meta-analysis. The mean tumor size was 18.5 mm (95% CI = 16.5-20.6), I^2 = 30.82%. Upper GI SETs were mainly located in the stomach (96.41%, 95% CI = 86.50-100.0, I^2 = 82.61%). The overall pooled diagnostic yield of DB via ESD for upper GI SETs was 95.80% (95% CI = 87.21-100.00), I^2 = 76.37% (figure1). Overall, major bleeding and perforation in our meta-analysis was noted in 0.06% (95% CI = 0.00-2.07, I^2=0%) and 0% (95% CI =0.00-1.54, I^2= 0%) respectively. Data regarding major bleeding and perforation rates was not reported in two studies. Significant heterogeneity was observed in our meta-analysis.

Conclusion: DB via ESD is an effective and safe procedure for diagnosing upper GI SETs with an overall diagnostic yield of 95.80% and minimal adverse events (major bleeding and perforation). Multi-center randomized control trials are needed to further validate these findings.