Endoscopic Mucosal Resection versus Endoscopic Submucosal Dissection for Treatment of Superficial Colorectal Neoplasms: A Meta-Analysis Update

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INTRODUCTION: Endoscopic mucosal resection (EMR) is widely accepted for the treatment of superficial colorectal tumors; however complete resection is difficult for large lesions (>20 mm) and/or sessile lesions. Endoscopic submucosal dissection (ESD) was developed to solve these problems. However, when compared to EMR, ESD has several disadvantages, such as long procedure time, complication rates and is technically challenging. We conducted a systematic review to compare the efficacy and safety of EMR and ESD for the treatment of colorectal tumors.

METHODS: A literature search was done using PubMed, Cochrane, and Embase from inception until May 2018. Ten relevant studies were isolated and included in the study. The relevant data were extracted, and meta-analysis with Random effects model was done by RevMan 5.3.

RESULTS: A total of 2678 lesions in the EMR group and 1934 lesions in the ESD group were included in the study. Out of the 14 studies included, patient characteristics were available only in 4 studies with a mean age of 63.97 years [Male-59.3%, Female-40.7%] in the EMR group and 65.19 years [Male-64.3%, Female-35.7%] in the ESD group. Our primary outcomes were En-Bloc Resection Rate (EBR) and Curative Resection Rate (CRR). We also analyzed the adverse events – bleeding and perforation. 997 lesions were removed en-bloc by EMR and 1785 lesions by ESD [OR 8.95, 95%CI (4.13, 19.41), P < 0.0001, I² = 88%], favoring ESD over EMR. The curative resection rate was 359 out of 625 lesions in the EMR group and 434 out of 530 lesions in the ESD group [OR 1.70, 95%CI (0.58, 5.03), P < 0.0001, I² = 92%], favoring ESD over EMR. The overall outcomes than EMR. Non-randomization and usage of data from heterogeneous practice settings are the limitations of our study data.

CONCLUSION: ESD has a better EBR without much difference in the CRR as compared to EMR while treating colorectal neoplasms. EMR had a lower perforation rate but there was no significant difference in bleeding between the groups. ESD is more complex and operator dependent requiring great technical expertise. With careful selection of patients and advanced endoscopic skills, ESD might give better overall outcomes than EMR. The limitations of our study were that the trials included were non-randomized and conducted in heterogeneous practice settings.

Comparison of Diagnostic Yield of Cytology versus Histology on Samples Obtained During Endoscopic Ultrasound-Guided Fine Needle Biopsy (EUS-FNB)

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INTRODUCTION: The advent of endoscopic ultrasound (EUS) has vastly improved access to several gastrointestinal lesions, thereby leading to increased diagnostic capability. Moreover, improved core tissue sampling is now possible with fine needle biopsy (EUS-FNB) needle, as opposed to aspiration (FNA) alone. However, the practice of sample handling is highly individualized due to lack of standardization as to whether core sample should be sent only in histology (in formalin), or in formalin and/or cytology (in cytolytic) or both. This study was abstracted to compare the diagnostic yield of cytology versus histology on core tissue obtained from the same lesion, using the same EUS-FNB needle.

METHODS: Single endoscopy at a large tertiary referral center conceptualized a prospective EUS database between October 2017 and February 2019, where a 22-gauge FNB needle was used to obtain core tissue samples, which were sent for cytology and histology. After IRB approval, retrospective analysis of this database was performed. Patient’s demographics, medical history, imaging, indication for EUS, EUS findings, and cytology/histology results were analyzed.

RESULTS: Out of 226 therapeutic EUS performed by single endoscopist during study period, 103 samples were collected using 22-gauge FNB needle (solid masses (62), lymph nodes (18) & solid-cystic lesions (23)). 28 samples were sent for cytology, 29 for histology, and 46 for both (passes equally divided). Out of these 46 samples, 42 were consistent between cytology and histology, but 4 were discordant; in all 4 cases, histology provided the conclusive information. In 3 cases, histology provided the diagnosis of cancer while cytology was reported negative. In the fourth case, cytology was inconclusive while histology was definitely negative for carcinoma. These samples were obtained from 2 pancreatic masses, one gastric subepithelial lesion, and one lymph node, and pathology showed pancreatic adenocarcinoma, GIST, and persistent follicular lymphoma, respectively. 22-gauge needles were used for all these procedures, and no complications were noted.

CONCLUSION: Our study demonstrates 8% inconsistency between cytology and histology on core samples obtained using EUS-FNB. In all discordant cases, histology provided more accurate information than cytology. Larger, multi-centric and prospective studies are needed to ascertain the best practice to make the diagnostic process more efficient, accurate, and cost-effective.

Predictors of Failed Index Endoscopic Retrograde Cholangiopancreatography

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INTRODUCTION: We aimed to evaluate the frequency and factors associated with failed ERCP in the Medicare population.

Fig 1: Forest Plot comparing En-bloc resection rates in EMR and ESD

Fig 2: Forest Plot comparing Curative resection rate in EMR and ESD