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Lack of proper reimbursement is hampering adoption of minimally invasive gastrointestinal endoscopy in North America

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Abstract

Endoscopic submucosal dissection (ESD) and related procedures are minimally invasive and cost-effective alternates to surgery. However, there is no approved or listed current procedural terminology (CPT) for ESD. We aimed to review the current reimbursement process hurdles for ESD procedures in private practice model in United States. We reviewed the data of two advanced endoscopists (one in New York and other in Pennsylvania State) performing ESD in their private practice set-ups. We found the reimbursement process was complex, with number of refusals varied from 0-9 for ESD procedures. It was not paid at all in 8.3% of cases by the medical insurance. Endoscopic mucosal resection, which is considered inferior as compared to ESD, but has a listed CPT, was denied in only 0.83% cases. Our data highlights the billing hurdles by the endoscopists to adopt ESD-related procedures in private practice model.

Key words: Endoscopic submucosal dissection; Lack of reimbursement; Current procedural terminology; Minimally invasive gastrointestinal endoscopy; North America

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Core tip: Despite being minimally invasive and cost-effective alternates to surgery for removal of large gastrointestinal mucosal lesions, Endoscopic submucosal dissection has no approved or listed current procedural terminology for billing. It leads to much higher denial rate by the health insurance companies in North America. This scenario is highlighted in our article and is a hurdle in adoption of such useful techniques in private practice set-up.

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TO THE EDITOR

Patients with large gastrointestinal (GI) mucosal polyps and lesions including carcinoids, muscle tumors including GI stromal tumor, and achalasia, traditionally undergo surgery. Not only there is morbidity and mortality involved, surgical procedures are costly. The total cost for elective colectomy varies with type of surgery performed. According to an estimate, the total average costs were \$31601 with open versus \$24196 with laparoscopic surgical approach^[1].

Endoscopic submucosal dissection (ESD) and related GI procedures are minimally invasive as well as cost-effective alternates to surgery for above conditions. According to a decision analysis model, the cost of endoscopic removal for complex colon polyp was \$5570 per patient versus \$18717 per patient for laparoscopic surgery^[2]. Medicare reimbursements for physicians are significantly lower for endoscopic procedures compared to invasive surgery even though by performing these ultra-minimally invasive endoscopic procedures, significant morbidity is avoided, organs are preserved and minimal or no recovery time is needed hence preventing work loss days. Total gastrectomy is reimbursed at \$2028.89 *vs* endoscopic mucosal resection (EMR) is paid \$280.22^[3]. Total esophagectomy is paid \$3080.89 *vs* EMR at \$280.22. Abdominoperineal resection is paid \$2024.27 *vs* colonoscopy EMR at \$345.18. ESD is more time consuming, complex procedure with higher skills sets requirements however since these are lumped together in “unlisted code” category, at times it’s not compensated at all and other times reimbursed at much lower skill level of EMR or standard polypectomy. This is one of the discouraging factors for dissemination of these valuable techniques amongst skilled endoscopist in United States.

ESD and related procedures are increasingly being performed in Asia as well as in Europe. However, these procedures are limited to selective tertiary care facilities in United States. Due to lack of proper reimbursement, these procedures remain unknown in private practice system. At present, there remains no approved or listed current procedural terminology (CPT) for ESD^[4]. Only unlisted CPT can be used for reimbursement: 45399 for lower, and 43499 for upper GI tract endoscopic procedures. It first requires approval and authorization from the insurance carrier. Documentation is provided by the endoscopist’s office in terms of the need for ESD and any other alternates. Many times, it leads to peer-to-peer review between the performing endoscopist and the reviewer physician at the insurance office. This article will highlight the billing and reimbursement hurdles to adopt ESD-related procedures in private practice model in United States healthcare system.

We reviewed the data of two advanced endoscopists (one in New York and other in Pennsylvania State) who been performing ESD-related procedures in their private practice set-ups from last three years. Both endoscopists had dedicated training in ESD-related procedures. All such procedures were performed in the nearby hospitals under deep sedation (either intravenous propofol or general anesthesia). Prophylactic antibiotics were administered as necessary. Patients were mostly discharged home the same day or hospitalized for few days (depending upon the nature of ESD procedure, like per-oral endoscopic myotomy for achalasia treatment or endoscopic Zenker’s diverticulectomy).

Table 1 shows the data of all the patients who underwent ESD-related procedures in both states. Both lower and upper GI tract ESD-related procedures were performed. The main indication was GI tract mucosal polyps/lesions (67.5%). It was a mixed health insurance payer population (Commercial and Medicare). The unlisted CPT for lower GI endoscopy ESD used was 45399, while 43499 were used for upper ESD. These CPT were denied initially in 42 patients, with initial denial rate of 35%. After each denial, the bill was re-processed with more documentation. The number of denials varied from 0-9. The procedure ultimately got paid as a listed CPT like 45385 (colonoscopy with removal of lesion), 45390 (colonoscopy with EMR), or 43251 (EGD with biopsy). However, 10 cases remain unpaid with final denial rate of 8.33%. It is much higher as compared to other endoscopic procedures with listed CPT. The average denial rate for a GI endoscopic procedure is reported to be very low (< 1%). In some cases in our data, more than one lesion was removed in the same session

either by ESD or other endoscopic techniques.

ESD-related complications were noted in only three patients (2.5% rate): 2 post-procedural bleeding that were managed conservatively, and 1 esophageal stricture that was successfully managed by balloon dilation. Not listed in Table 1 are additional 120 patients with sessile-flat colorectal lesions 15 mm and above that were removed by EMR technique. There already exists a listed CPT for EMR: 45390 (colonoscopy with EMR), and 43254 (EGD with EMR). Only 3 cases (2.5%) were initially denied. After re-processing, only one EMR case remain denied (with final denial rate of 0.83%). However, piecemeal EMR is considered inferior as compared to ESD. In a meta-analysis, piecemeal EMR had lower en-bloc resection and higher local recurrence rates for colorectal lesions^[5]. Had there been a listed CPT for ESD or health insurance authorized unlisted CPT for ESD in our cases, these patients could have benefited from ESD-related technique.

ESD-related procedures are time consuming. The procedure time (from introduction of the endoscope to complete removal of the target ESD lesion) ranged from 20-120 min. Our data shows the financial frustrations of the advanced endoscopists who may like to perform such procedures so as to benefit patients in their practices. There needs to be proper CPT for ESD-related technique (separate for upper and lower GI endoscopic procedures). It should reimburse the endoscopists appropriately considering in-view of the complexity of the procedure as well as time-spent by the endoscopist. If any other lesion besides the ESD target lesion is noted during the endoscopy, there is a need to develop a mechanism where by the endoscopist can remove and bill for the second lesion as well. Otherwise, the patient may need a separate endoscopic procedure. If more than one lesion is removed *via* ESD technique, there also need to be a mechanism to bill accordingly. Different medical societies including American Medical Association, American Gastroenterology Association, American Society of Gastrointestinal Endoscopy and American College of Gastroenterology should play their roles and pull legal strings.

Table 1 Billing data for endoscopic submucosal dissection-related endoscopic procedures

Total patients	120
Gender	Male 64; female 56
Type of GI endoscopy	Lower 76; upper 44
Age (yr)	Range 22-92
Indication of procedure	Mucosal polyps/lesions 81, submucosal lesions 15, myotomy 24
Length of ESD (min)	Range 20-120
Complications	3 (2.5%) (2 post-ESD bleed; 1 esophageal stricture requiring dilation)
Type of health insurance	Commercial 52 (43%), medicare 49 (40.8%), HMO 19 (15.8%)
Not paid as unlisted CPT	42
Initial denial rate	35%
Not paid at all	10
Final denial rate	8.33%
Number of denials	Range 0 to 9

GI: Gastrointestinal; ESD: Endoscopic submucosal dissection; CPT: Current procedural terminology.

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