Peroral Endoscopic Myotomy for Treatment of Esophageal Achalasia

Policy Number: 2.01.91
Origination: 3/2018
Last Review: 9/2019
Next Review: 3/2020

Policy
Blue Cross and Blue Shield of Kansas City (Blue KC) will not provide coverage for Peroral Endoscopic Myotomy for Treatment of Esophageal Achalasia. This is considered investigational.

When Policy Topic is covered
n/a

When Policy Topic is not covered
Peroral endoscopic myotomy is considered investigational as a treatment for esophageal achalasia.

Considerations
There are no specific CPT codes for this procedure. It would likely be reported with the unlisted procedure, esophagus code 43499.

Description of Procedure or Service

<table>
<thead>
<tr>
<th>Populations</th>
<th>Interventions</th>
<th>Comparators</th>
<th>Outcomes</th>
</tr>
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<tbody>
<tr>
<td>Individuals:</td>
<td>Interventions of interest are:</td>
<td>Comparators of interest are:</td>
<td>Relevant outcomes include:</td>
</tr>
<tr>
<td>• With achalasia</td>
<td>• Peroral endoscopic myotomy</td>
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<td>• Symptoms</td>
</tr>
</tbody>
</table>

Summary
Esophageal achalasia is characterized by reduced numbers of neurons in the esophageal myenteric plexuses and reduced peristaltic activity, making it difficult for patients to swallow food and possibly leading to complications such as regurgitation, coughing, choking, aspiration pneumonia, esophagitis, ulceration, and weight loss. Peroral endoscopic myotomy (POEM) is a novel endoscopic procedure that uses the oral cavity as a natural orifice entry point to perform
myotomy of the lower esophageal sphincter. This procedure is intended to reduce the total number of incisions needed and thus the overall invasiveness of surgery.

For individuals who have achalasia who receive POEM, the evidence includes systematic reviews, nonrandomized comparative studies, and case series. Relevant outcomes are symptoms, functional outcomes, health status measures, resource utilization, and treatment-related morbidity. The comparative studies have primarily reported similar outcomes with POEM and with Heller myotomy for symptom relief, as assessed by the Eckardt score. Some studies have shown shorter length of stay and less postoperative pain with POEM. However, potential imbalances in patient characteristics in these nonrandomized studies might have biased the treatment comparisons. In the case series, treatment success at short follow-up periods was reported for a high proportion of patients treated with POEM. However, the incidence of adverse events was relatively high, with POEM-specific complications, including subcutaneous emphysema, pneumothorax, and thoracic effusion, reported across studies. Additionally, a substantial proportion of patients undergoing POEM developed esophagitis and required treatment. Case series do not permit conclusions about the efficacy of POEM relative to established treatment, and long-term outcomes of the procedure are not well described in the literature. The evidence is insufficient to determine the effects of the technology on health outcomes.

**Background**

**Esophageal Achalasia**

Esophageal achalasia is characterized by reduced numbers of neurons in the esophageal myenteric plexuses and reduced peristaltic activity, making it difficult for patients to swallow food and possibly leading to complications such as regurgitation, coughing, choking, aspiration pneumonia, esophagitis, ulceration, and weight loss. The estimated U.S. prevalence of achalasia is 10 cases per 100,000, and the estimated incidence is 0.6 cases per 100,000 per year.¹

**Treatment**

Treatment options for achalasia have included pharmacotherapy such as injections with botulinum toxin, pneumatic dilation, and laparoscopic Heller myotomy.¹,² Although the last 2 are considered the mainstay of treatment because of higher success rates and relatively long-term efficacy compared with pharmacotherapy and botulinum toxin injections; both are associated with a perforation risk of about 1%. Laparoscopic Heller myotomy is the most invasive of the procedures, requiring laparoscopy and surgical dissection of the esophagogastric junction.² One-year response rates of 86% and major mucosal tear rates requiring subsequent intervention of 0.6% have been reported.³

Peroral endoscopic myotomy (POEM) is a novel endoscopic procedure developed in Japan.²,⁴ POEM is performed with the patient under general anesthesia.⁵ After tunneling an endoscope down the esophagus toward the esophageal-gastric junction, a surgeon performs the myotomy by cutting only the inner, circular lower esophageal sphincter muscles through a submucosal tunnel created in the proximal esophageal mucosa. POEM differs from laparoscopic surgery, which
involves complete division of both circular and longitudinal lower esophageal sphincter muscle layers. Cutting the dysfunctional muscle fibers that prevent the lower esophageal sphincter from opening allows food to enter the stomach more easily.2,5

Note that the acronym POEM in this review refers to peroral endoscopic myotomy. POEMS syndrome, which has a similar acronym, is discussed in a separate policy.

**Regulatory Status**
POEM uses available laparoscopic instrumentation and, as a surgical procedure, is not subject to regulation by the U.S. Food and Drug Administration.

**Rationale**
This evidence review was created in September 2013 and has been updated regularly with searches of the MEDLINE database. The most recent literature update was performed through September 4, 2018.

Evidence reviews assess the clinical evidence to determine whether the use of a technology improves the net health outcome. Broadly defined, health outcomes are length of life, quality of life, and ability to function—including benefits and harms. Every clinical condition has specific outcomes that are important to patients and to managing the course of that condition. Validated outcome measures are necessary to ascertain whether a condition improves or worsens; and whether the magnitude of that change is clinically significant. The net health outcome is a balance of benefits and harms.

To assess whether the evidence is sufficient to draw conclusions about the net health outcome of a technology, 2 domains are examined: the relevance and the quality and credibility. To be relevant, studies must represent one or more intended clinical use of the technology in the intended population and compare an effective and appropriate alternative at a comparable intensity. For some conditions, the alternative will be supportive care or surveillance. The quality and credibility of the evidence depend on study design and conduct, minimizing bias and confounding that can generate incorrect findings. The randomized controlled trial is preferred to assess efficacy; however, in some circumstances, nonrandomized studies may be adequate. Randomized controlled trials are rarely large enough or long enough to capture less common adverse events and long-term effects. Other types of studies can be used for these purposes and to assess generalizability to broader clinical populations and settings of clinical practice.

**Peroral Endoscopic Myotomy**

**Clinical Context and Therapy Purpose**
The purpose of peroral endoscopic myotomy (POEM) in patients who have esophageal achalasia is to provide a treatment option that is an alternative to or an improvement on existing therapies.
The question addressed in this evidence review is: Does the use of POEM improve the net health outcome of patients with esophageal achalasia?

The following PICOTS were used to select literature to inform this review.

**Patients**
The relevant population of interest is patients with esophageal achalasia. Esophageal achalasia is characterized by reduced numbers of neurons in the esophageal myenteric plexuses and reduced peristaltic activity, making it difficult for patients to swallow food and possibly leading to complications such as regurgitation, coughing, choking, aspiration pneumonia, esophagitis, ulceration, and weight loss.

**Interventions**
The therapy being considered is POEM. The POEM procedure involves tunneling an endoscope down the esophagus toward the esophageal-gastric junction. A surgeon performs the myotomy by cutting only the inner, circular lower esophageal sphincter (LES) muscles through a submucosal tunnel created in the proximal esophageal mucosa.

**Comparators**
Comparators of interest include esophageal dilatation, and laparoscopic Heller myotomy (LHM), and botulinum toxin injection.

Esophageal dilation is performed in a graded approach, starting with a small balloon (typically 30 mm), then progressing to larger balloons (35-40 mm) 2 to 4 weeks later. The balloons are placed at the level of the gastroesophageal junction and inflated slowly, in order to tear the muscle fibers in a controlled manner. Esophageal perforations are a potential complication. Long-term studies have estimated that approximately one-third of patients may need a repeat procedure.

Heller laparoscopic myotomy is a minimally invasive procedure in which the thick muscle of the lower esophagus and the upper stomach is cut to open the tight LES. The procedure involves 5 small incisions to insert the camera and surgical instruments. Reported success rates are high (>90%), with a 5-year follow-up study showing 8% rate of symptom recurrence.

Endoscopic botulinum toxin is injected with a sclerotherapy needle approximately 1 cm above the esophagogastric junction. The complication rate is low and approximately 80% of patients experience immediate symptom relief. The effect diminishes over time, with more than 60% of patients reporting recurrent symptoms at 1 year.

**Outcomes**
The general outcomes of interest are symptom relief and treatment-related morbidity.
Symptom relief may be measured by the Eckardt score, which is comprised of 4 major symptoms of achalasia: dysphagia, regurgitation, retrosternal pain, weight loss. Each symptom receives a score from 0 (none) to 3 (severe), for a maximum score of 12. Total scores of 4 or greater represent treatment failure.6.

A treatment-related morbidity of concern is the development of gastroesophageal reflux disease (GERD). GERD risk is high with this procedure because POEM involves ablating the LES without adding any type of anti-reflux mechanism. Additional complications include thoracic effusion, subcutaneous emphysema, and esophagitis.

**Timing**
Symptom relief may be experienced shortly following the procedure. Duration of relief is measured after months to years of follow-up.

**Setting**
Patients receive general anesthesia during the POEM procedure, which is conducted in tertiary care facilities.

**Systematic Reviews**
Several systematic reviews including overlapping studies have evaluated outcomes of POEM.

Schlottmann et al (2018) conducted a meta-analysis on studies using LHM (n=53 studies, n=5834 patients) and studies using POEM (n=21 studies, n=1958 patients) for the treatment of esophageal achalasia.4 The probability for improvement in dysphagia at 24 months was 90% for patients receiving LHM and 93% for patients receiving POEM (p=0.01). However, patients receiving POEM were significantly more likely to develop GERD (odds ratio [OR], 1.7; 95% confidence interval [CI], 1.3 to 2.1).

Crespin et al (2017) evaluated outcomes for 1299 patients from 19 case series.8 Improvements in Eckardt scores were statistically significant in all studies. The most frequently reported complications were mucosal perforation, pneumothorax, pneumoperitoneum, and subcutaneous emphysema. Akintoye et al (2016) evaluated outcomes for 2373 patients from 36 case series.9 Clinical success rates were achieved in 98% of patients (95% CI, 97% to 100%) and mean Eckardt scores decreased from baseline at 1, 6, and 12 months. Patel et al (2016) evaluated outcomes for 1122 patients from 22 case series.10 Eckardt scores dropped from 6.8 at baseline to 1.2 postoperatively. There were improvements in LES pressure and symptoms.

Two systematic reviews have focused on studies comparing POEM with an alternative surgical treatment.11,12 BCBSA only reports results from the review by Marano et al (2016) because it included the period covered in the other review and assessed more patients and studies.11 Marano evaluated outcomes for 486 patients (196 receiving POEM, 290 receiving LHM) from 11 studies. None of the studies was randomized. Reviewers rated all studies as having a moderate risk of
bias. No information on differences in disease severity between treatment groups was provided. There were no significant differences in the reduction of Eckardt scores, postoperative pain scores, or requirements for analgesics between procedures. Hospital lengths of stay were shorter for POEM.

**Section Summary: Systematic Reviews**

Conclusions on comparative efficacy cannot be determined from the systematic reviews of case series because of the lack of comparators. The systematic reviews evaluating comparative studies only assessed nonrandomized studies and did not appear to have taken into account differences in patient characteristics.

**Nonrandomized Comparative Studies**

Sanaka et al (2016) compared outcomes at their own institution for 36 patients undergoing POEM, 142 undergoing LHM, and 36 undergoing pneumatic dilation. At baseline, patients undergoing the 3 procedures had different characteristics. POEM patients were older, had higher body mass index, and had more prior treatments. After treatment, patients undergoing all 3 procedures had significant improvements as measured by high-resolution esophageal manometry and timed barium esophagram. Eckhardt symptom scores were only available for POEM patients. Long-term outcomes were not reported.

Wang et al (2016) retrospectively reviewed outcomes for POEM (n=21) and pneumatic dilation (n=10) in patients ages 65 years and older. All were treated successfully, with decreases in Eckhardt scores. At a mean follow-up of 21.8 months for POEM and 35 months for pneumatic dilation patients, 1 POEM case failed, and 2 pneumatic dilation procedures failed.

In a retrospective study of patients with type III achalasia, Kumbhari et al (2015) compared outcomes for 49 patients who underwent POEM and 25 patients who underwent LHM. Defining clinical response as a reduction in Eckardt score of no more than 1, clinical response was more frequent in the POEM group (98.0%) than the LHM group (80.8%; p=0.01). However, LHM patients had more severe disease by several different measures. On multivariable analysis, there was no statistically significant difference in the odds of failure between procedures, although the point estimate of the odds favored POEM (odds ratio, 11.32; p=0.06). Procedure times were shorter with POEM. There was no difference in length of stay. The overall rate of adverse events was lower in the POEM group (6% vs 27%, p=0.01).

In a retrospective study of a prospective U.S. university database, Bhayani et al (2014) compared outcomes in 37 patients who underwent POEM and 64 patients who underwent LHM. Full-thickness esophageal injury occurred in 4 POEM patients, and 8 esophageal and 3 gastric perforations occurred in LHM patients. Mean hospitalization was 1.1 days in the POEM group and 2.2 days in the LHM group (p<0.001). Eckardt scores were statistically lower postoperatively in the POEM group than in the LHM group (p<0.001) at 1 month, but not at 6 months (64% of patients assessed), Eckardt scores did not differ statistically between groups (p=0.1). Postoperative decreases in LES pressures
were similar between groups. At 6 months, resting LES pressure was higher in the POEM group (16 mm Hg) than in the LHM group (7 mm Hg; p=0.006). (LES pressure >15 mm Hg predicts recurrent dysphagia.17)

In a nonrandomized trial with historical controls, Hungness et al (2013) reported on perioperative outcomes in patients with achalasia treated with POEM (n=18) or LHM (n=55) at a single U.S. center.5. Surgical times were shorter for POEM (113 minutes) than for LHM (125 minutes; p<0.05). Additionally, estimated blood loss was lower in patients treated with POEM (≤10 mL in all POEM cases vs 50 mL for LHM, p<0.001). Myotomy lengths, complication rates, and lengths of stay were also similar between groups. Pain scores were similar postanesthesia and postoperatively on the first day, but were higher at 2 hours for POEM patients (3.5 vs 2.0, p=0.03). Narcotic use was similar between groups, although fewer patients treated with POEM received ketorolac, a nonsteroidal anti-inflammatory. POEM patients’ median Eckardt scores decreased (1 postoperative vs 7 preoperative, p<0.001), and 16 (89%) patients had treatment success (score ≤3) at a median of 6 months follow-up.

Ujiki et al (2013) compared outcomes for 18 patients undergoing POEM with 21 patients undergoing LHM.18 Postoperative Eckardt scores were similar (POEM=0.7 vs LHM=1.0). Several outcomes related to recovery from surgery favored POEM (postoperative pain, analgesic use, return to activities of daily living).

Section Summary: Nonrandomized Comparative Studies
The nonrandomized studies comparing POEM with other procedures are retrospective and involved patients who might not have been comparable in terms of age and severity of disease. Although outcomes were generally similar between POEM and the comparator treatments (LHM, pneumatic dilation), potential confounding and selection bias make outcomes comparisons uncertain. The comparative studies did not report long-term outcomes.

Case Series
Several case series have evaluated the use of POEM and series with 50 or more cases are included for review.

Hungness et al (2016) conducted a retrospective chart review of 115 patients who had undergone POEM in a single high-volume center and had at least 1 year of follow-up.19. Treatment success was defined as an Eckardt score of 3 or less without reintervention. GERD was defined by an abnormal pH or reflux esophagitis greater than Los Angeles grade A. After a mean follow-up of 2.4 years (range, 1.0-4.3 years), the overall success rate was 92%. GERD was reported in 40% of the patients.

Ramchandani et al (2016) reported on outcomes for 200 consecutive patients at an institution in India.20 Outcomes at 1 year were available for 102 patients. Clinical success, defined as an Eckardt score of 3 or less, was achieved in 92% on a per-protocol analysis and 83% on intention-to-treat analysis, which included
additional patients with technical failure and patients lost to follow-up. The mean Eckardt score was 1.18 after POEM.

Inoue et al (2015) reported outcomes on 500 consecutive patients at a Japanese institution.\(^{21}\) Outcomes were available for a variable proportion of patients at different intervals after the procedure: 302 (60.4\%) at 2 months, 102 (27.6\%) of 370 at 1 to 2 years, and 61 (58.1\%) of 105 at more than 3 years. The median Eckardt score at all time points was 1. LES pressure ranged from 13.4 to 11.7 mm Hg. Between 16.8\% and 21.3\% of subjects reported symptoms of GERD. The overall complication rate was 3.2\%.

Teitelbaum et al (2014) also evaluated 1-year outcomes after POEM.\(^{22}\) Forty-one patients treated at an academic medical center and more than 1 year post-POEM were included. Most patients (37 [90\%]) had no previous endoscopic treatment (botulinum toxin injection or pneumatic dilation). Ninety-two percent of 39 patients available for symptom assessment had treatment success (Eckardt score <4). In 21 patients evaluated, mean LES pressure was 11 mm Hg.

Ling et al (2014) reported on quality of life outcomes in 2 patient cohorts (probably overlapping) who underwent POEM for achalasia at a single center in China.\(^{23}\) Quality of life was assessed at pretreatment and at 1-year follow-up using the 36-Item Short-Form Health Survey; Physical Component Summary and Mental Component Summary raw scores were transformed to a 0 (poor health) to 100 (good health) scale. In a group of 21 patients who had failed previous pneumatic dilation, mean Physical Component Summary scores improved from 30 to 65, and mean Mental Component Summary scores improved from 43 to 67 (\(p<0.001\) for both comparisons). Incidences of intraoperative subcutaneous emphysema and pneumothorax were 14\% and 5\%, respectively; postoperative esophagitis developed in 19\%. In 87 previously untreated patients, mean Physical Component Summary scores improved from 33 to 69 (\(p<0.001\)), and mean Mental Component Summary scores improved from 44 to 67 (\(p=0.003\)). Incidence rates of intraoperative subcutaneous emphysema and pneumothorax were 12\% and 1\%, respectively; postoperative esophagitis developed in 6\%.

In a prospective case series, Von Renteln et al (2013) reported on 70 patients who underwent POEM at 5 centers in Europe and North America.\(^{25}\) Mean follow-up was 10 months (range, 3-12 months). Follow-up evaluations at 6 months and 1 year showed sustained treatment success of 89\% and 82\%, respectively. Mean pretreatment Eckardt scores were 6.9 compared with 1.3 at 6 months and 1.7 at 1 year (\(p<0.001\) for both comparisons vs pretreatment score). In multivariate analysis, neither age, previous treatment (botulinum toxin injection, dilatation), myotomy length, preprocedure LES pressure, pretreatment Eckardt score, sex, procedure duration, nor full-thickness dissection during POEM were significant predictors of treatment failure at 1 year. At 3 months after POEM, esophagitis was observed in 42\% of cases. However, the severity of esophagitis was minor (grade A or B), and all patients could be managed adequately with proton pump inhibitor therapy. At 3 months, 22\% of patients required occasional and 12\% required daily proton pump inhibitor therapy. The 1-
year follow-up evaluation showed overall rates of GERD of 37% and proton pump inhibitor use of 29%. Other complication rates of POEM ranged from 1% to 4%.

A study by Ren et al (2012) highlighted POEM-specific complications. In this series of 119 cases, 23% of patients developed subcutaneous emphysema intraoperatively and another 56%, postoperatively. Three of these patients required subcutaneous needle decompression. Additionally, 3% patients developed a pneumothorax intraoperatively and another 25% postoperatively. Postoperatively, the incidence of thoracic effusion was 49%; incidence of mild inflammation or segmental atelectasis of the lungs was 50%. All complications were resolved with conservative treatment.

At least 2 other small case series (both 2013) have evaluated the efficacy and feasibility of POEM for patients with failed LHM/achalasia recurrence; success rates have been reported in over 90% of cases up to 10 months after rescue POEM. Studies also have compared different POEM techniques; comparable outcomes have been reported between patients undergoing full-thickness and circular myotomy.

Section Summary: Case Series
Case series have shown improvements in symptoms of achalasia after POEM. These reports also point to defined short- and long-term complications and adverse events. Such studies do not permit comparison with other established treatments.

Summary of Evidence
For individuals who have achalasia who receive POEM, the evidence includes systematic reviews of observational studies, nonrandomized comparative studies, and case series. Relevant outcomes are symptoms, functional outcomes, health status measures, resource utilization, and treatment-related morbidity. The comparative studies have primarily reported similar outcomes for POEM and for Heller myotomy in symptom relief, as assessed by the Eckardt score. Some studies have shown shorter length of stay and less postoperative pain with POEM. However, potential imbalances in patient characteristics in these nonrandomized studies might have biased the treatment comparisons. In the case series, treatment success at short follow-up periods was reported for a high proportion of patients treated with POEM. However, the incidence of adverse events was relatively high, with POEM-specific complications, including subcutaneous emphysema, pneumothorax, and thoracic effusion, reported across studies. Additionally, a substantial proportion of patients undergoing POEM developed gastroesophageal reflux disease and esophagitis and required treatment. Case series do not permit conclusions about the efficacy of POEM relative to established treatment, and long-term outcomes of the procedure are not well described in the literature. The evidence is insufficient to determine the effects of the technology on health outcomes.
SUPPLEMENTAL INFORMATION

Practice Guidelines and Position Statements

American Gastroenterological Association Institute
In 2017, the American Gastroenterological Association Institute published a clinical practice update on the use of peroral endoscopic myotomy (POEM) for the treatment of achalasia. Based on expert review, the Institute made the following recommendations:

- POEM should be performed by experienced physicians in high-volume centers (competence achieved after estimated 20 to 40 procedures)
- If expertise is available, POEM should be considered primary therapy for type III achalasia
- If expertise is available, POEM should be considered comparable to Heller myotomy for any achalasia syndromes
- Patients receiving POEM should be considered high risk to develop reflux esophagitis and be advised of management considerations (eg, proton pump inhibitor therapy and/or surveillance endoscopy) prior to undergoing POEM.

American Society of Gastrointestinal and Endoscopic Surgeons
In 2014, the American Society of Gastrointestinal and Endoscopic Surgeons issued evidence-based, consensus guidelines on the use of endoscopy in the evaluation and management of dysphagia, including esophageal achalasia. The Society recommended that:

“... Endoscopic and surgical treatment options for achalasia should be discussed with the patient. In patients who opt for endoscopic management and are good surgical candidates, pneumatic dilation with large-caliber balloon dilators for the endoscopic treatment of achalasia was recommended... Long-term data and randomized trials comparing peroral endoscopic myotomy to conventional modalities of management are necessary before it can be adopted into clinical practice, but the procedure is becoming more widely used in expert centers.”

American College of Gastroenterology
In 2013, the American College of Gastroenterology issued clinical guidelines on the diagnosis and management of achalasia. POEM was discussed as an emerging therapy and stated to have promise as an alternative to the laparoscopic approach. The guidelines further stated that randomized prospective comparison trials are needed, and the procedure should be performed in the context of clinical trials.

Society of American Gastrointestinal and Endoscopic Surgeons
In 2012, the Society of American Gastrointestinal and Endoscopic Surgeons issued evidence-based, consensus guidelines on the surgical management of esophageal achalasia. The guidelines stated that the POEM technique “is in its infancy and further experience is needed before providing recommendations.”
International Society for Diseases of the Esophagus
In 2018, the International Society for Diseases of the Esophagus published guidelines on the diagnosis and management of achalasia. The Society convened 51 experts from 11 countries, including several from the United States, to systematically review evidence, assess recommendations using the GRADE system, and vote to integrate the recommendations into the guidelines (>80% approval required for inclusion). Table 1 summarizes POEM recommendations.

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>LOR</th>
<th>GOR</th>
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<tbody>
<tr>
<td>POEM is an effective therapy for achalasia both in short- and medium-term follow-up with results comparable to Heller myotomy.</td>
<td>Conditional</td>
<td>Very low</td>
</tr>
<tr>
<td>POEM is an effective therapy for achalasia both in short- and medium-term follow-up with results comparable to pneumatic dilations.</td>
<td>Conditional</td>
<td>Low</td>
</tr>
<tr>
<td>Pretreatment information on GERD, nonsurgical options (pneumatic dilation), and surgical options with lower GERD risk (Heller myotomy) should be provided to patient.</td>
<td>Good practice</td>
<td>NA</td>
</tr>
<tr>
<td>POEM is feasible and effective for symptom relief in patients previously treated with endoscopic therapies.</td>
<td>Conditional</td>
<td>Very low</td>
</tr>
<tr>
<td>POEM may be considered an option for treating recurrent symptoms after laparoscopic Heller myotomy.</td>
<td>Conditional</td>
<td>Low</td>
</tr>
<tr>
<td>Appropriate training (in vivo/in vitro animal model) and proctorship should be considered prior to a clinical program of POEM.</td>
<td>Good practice</td>
<td>NA</td>
</tr>
</tbody>
</table>

GERD: gastroesophageal reflux disease; GOR: grade of recommendation; LOR: level of recommendation; NA: not applicable; POEM: peroral endoscopic myotomy.

U.S. Preventive Services Task Force Recommendations
Not applicable.

Medicare National Coverage
There is no national coverage determination. In the absence of a national coverage determination, coverage decisions are left to the discretion of local Medicare carriers.

Ongoing and Unpublished Clinical Trials
Some currently unpublished trials that might influence this review are listed in Table 2.

<table>
<thead>
<tr>
<th>NCT No.</th>
<th>Trial Name</th>
<th>Planned Enrollment</th>
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<tr>
<td>NCT02138643</td>
<td>Laparoscopy Heller Myotomy With Fundoplication Associated Versus Peroral Endoscopic Myotomy (POEM)</td>
<td>30</td>
<td>Dec 2017 (ongoing)</td>
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<td>NCT03228758</td>
<td>Efficacy of Anterior Versus Posterior Myotomy Approach in Peroral Endoscopic Myotomy (POEM) for the Treatment of Achalasia - a Single Operator Analysis</td>
<td>290</td>
<td>Nov 2019</td>
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<tr>
<td>NCT01402518</td>
<td>Observational Study of the Peroral Endoscopic Myotomy (POEM) Procedure</td>
<td>100</td>
<td>Nov 2019</td>
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<tr>
<td>NCT01601678</td>
<td>Endoscopic Versus Laparoscopic Myotomy for Treatment of Idiopathic Achalasia: A Randomized, Controlled Trial</td>
<td>240</td>
<td>Dec 2019</td>
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<td>NCT01832779</td>
<td>Prospective Evaluation of the Clinical Utility of Peroral Endoscopic Myotomy (POEM)</td>
<td>600</td>
<td>Dec 2022</td>
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<tr>
<td>NCT01793922</td>
<td>A Prospective Randomized Multi-center Study Comparing Endoscopic Pneumodilation and Per Oral Endoscopic Myotomy (POEM) as Treatment of Idiopathic Achalasia</td>
<td>150</td>
<td>Jan 2023</td>
</tr>
</tbody>
</table>

NCT: national clinical trial.

REFERENCES


**Billing Coding/Physician Documentation Information**

**43499** Unlisted procedure, esophagus

**ICD-10 Codes**

**K22.0** Achalasia of cardia

**Additional Policy Key Words**

N/A

**Policy Implementation/Update Information**

3/1/18 New Policy, considered investigational.
9/1/18  No policy statement changes.
3/1/19  No policy statement changes.
9/1/19  No policy statement changes.

State and Federal mandates and health plan contract language, including specific provisions/exclusions, take precedence over Medical Policy and must be considered first in determining eligibility for coverage. The medical policies contained herein are for informational purposes. The medical policies do not constitute medical advice or medical care. Treating health care providers are independent contractors and are neither employees nor agents Blue KC and are solely responsible for diagnosis, treatment and medical advice. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, photocopying, or otherwise, without permission from Blue KC.