



## MASSACHUSETTS

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### Medical Policy

## Peroral Endoscopic Myotomy for Treatment of Esophageal Achalasia

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### Policy Number: 451

BCBSA Reference Number: 2.01.91 (For Plan internal use only)

NCD/LCD: N/A

### Related Policies

Surgical and Transesophageal Endoscopic Procedures to Treat Gastroesophageal Reflux Disease, #[920](#)

### Policy

#### Commercial Members: Managed Care (HMO and POS), PPO, and Indemnity Medicare HMO Blue<sup>SM</sup> and Medicare PPO Blue<sup>SM</sup> Members

Peroral endoscopic myotomy is considered [INVESTIGATIONAL](#) as a treatment for pediatric and adult esophageal achalasia.

### Prior Authorization Information

#### Inpatient

- For services described in this policy, precertification/preauthorization **IS REQUIRED** for all products if the procedure is performed **inpatient**.

#### Outpatient

- For services described in this policy, see below for products where prior authorization **might be required** if the procedure is performed **outpatient**.

|  | Outpatient                            |
|--|---------------------------------------|
| <b>Commercial Managed Care (HMO and POS)</b> | This is <b>not</b> a covered service. |
| <b>Commercial PPO and Indemnity</b>          | This is <b>not</b> a covered service. |
| <b>Medicare HMO Blue<sup>SM</sup></b>        | This is <b>not</b> a covered service. |
| <b>Medicare PPO Blue<sup>SM</sup></b>        | This is <b>not</b> a covered service. |

### CPT Codes / HCPCS Codes / ICD Codes

*Inclusion or exclusion of a code does not constitute or imply member coverage or provider reimbursement. Please refer to the member's contract benefits in effect at the time of service to determine coverage or non-coverage as it applies to an individual member.*

Providers should report all services using the most up-to-date industry-standard procedure, revenue, and diagnosis codes, including modifiers where applicable.

The following CPT code is considered investigational for **Commercial Members: Managed Care (HMO and POS), PPO, Indemnity, Medicare HMO Blue and Medicare PPO Blue:**

### CPT Codes

| CPT codes: | Code Description                    |
|------------|-------------------------------------|
| 43497      | Lower esophageal myotomy, transoral |

### Description

#### 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.<sup>1</sup>

#### Treatment

Treatment options for achalasia have included pharmacotherapy (eg, injections with botulinum toxin), pneumatic dilation, and laparoscopic Heller myotomy.<sup>1,2</sup> Although the latter 2 are considered the standard treatments because of higher success rates and relatively long-term efficacy compared with pharmacotherapy, both are associated with a perforation risk of about 1%. Heller myotomy is the most invasive of the procedures, requiring laparoscopy and surgical dissection of the esophagogastric junction.<sup>2</sup> One-year response rates of 86% and major mucosal tear rates requiring the subsequent intervention of 0.6% have been reported.<sup>3</sup>

Peroral endoscopic myotomy (POEM) is a novel endoscopic procedure developed in Japan.<sup>2,4</sup> POEM is performed with the patient under general anesthesia.<sup>5</sup> 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 the 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.<sup>2,5</sup>

Note that the acronym POEM in this review refers to *peroral endoscopic myotomy*. POEMS syndrome, which has a similar acronym, is discussed in policy #075.

### 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 adults who have achalasia who receive POEM, the evidence includes systematic reviews of observational studies, 2 randomized controlled trials, nonrandomized comparative studies, and case series. Relevant outcomes are symptoms, functional outcomes, health status measures, resource utilization, and treatment-related morbidity. Compared with pneumatic dilation or laparoscopic Heller myotomy (LHM), findings from RCTs demonstrated that POEM had a similar or greater treatment success rate based on the Eckardt score and similar or fewer overall adverse event rates. However, POEM had significantly higher rates of endoscopically confirmed reflux esophagitis and more daily proton-pump

inhibitor use at 24 months. An important conduct limitation of the RCTs is that blinded assessment of outcomes was not used. Given that the primary outcome was based on subjective patient report of symptoms, this is a potential source of bias. Additionally, a potential relevance limitation is that the RCTs did not include any US sites. The comparative observational 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 a 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.

For pediatric patients who have achalasia who receive POEM, the evidence includes several nonrandomized studies and a systematic review. Relevant outcomes are symptoms, functional outcomes, health status measures, resource utilization, and treatment-related morbidity. The studies reported treatment success for POEM based on decreases in Eckardt scores and lower esophageal sphincter pressure. No randomized clinical trials have been reported. The evidence is insufficient to determine the effects of the technology on health outcomes.

## Policy History

| Date    | Action   |
|---------|--|
| 1/2022  | Clarified coding information.  |
| 1/2021  | Annual policy review. Description, summary, and references updated. Policy statements unchanged. |
| 1/2020  | Annual policy review. Description, summary, and references updated. Policy statements unchanged. |
| 1/2019  | Annual policy review. Description, summary, and references updated. Policy statements unchanged. |
| 1/2018  | Annual policy review. New references added.  |
| 12/2016 | Annual policy review. New references added.  |
| 1/2016  | Annual policy review. New references added.  |
| 3/2014  | New medical policy describing investigational indications. Effective 3/1/2014.                   |

## Information Pertaining to All Blue Cross Blue Shield Medical Policies

Click on any of the following terms to access the relevant information:

- [Medical Policy Terms of Use](#)
- [Managed Care Guidelines](#)
- [Indemnity/PPO Guidelines](#)
- [Clinical Exception Process](#)
- [Medical Technology Assessment Guidelines](#)

## References

1. Cheatham JG, Wong RK. Current approach to the treatment of achalasia. *Curr Gastroenterol Rep.* Jun 2011; 13(3): 219-25. PMID 21424734
2. Pandolfino JE, Kahrilas PJ. Presentation, diagnosis, and management of achalasia. *Clin Gastroenterol Hepatol.* Aug 2013; 11(8): 887-97. PMID 23395699
3. Yaghoobi M, Mayrand S, Martel M, et al. Laparoscopic Heller's myotomy versus pneumatic dilation in the treatment of idiopathic achalasia: a meta-analysis of randomized, controlled trials. *Gastrointest Endosc.* Sep 2013; 78(3): 468-75. PMID 23684149

4. Inoue H, Minami H, Kobayashi Y, et al. Peroral endoscopic myotomy (POEM) for esophageal achalasia. *Endoscopy*. Apr 2010; 42(4): 265-71. PMID 20354937
5. Hungness ES, Teitelbaum EN, Santos BF, et al. Comparison of perioperative outcomes between peroral esophageal myotomy (POEM) and laparoscopic Heller myotomy. *J Gastrointest Surg*. Feb 2013; 17(2): 228-35. PMID 23054897
6. Eckardt AJ, Eckardt VF. Treatment and surveillance strategies in achalasia: an update. *Nat Rev Gastroenterol Hepatol*. Jun 2011; 8(6): 311-9. PMID 21522116
7. Li H, Peng W, Huang S, et al. The 2 years' long-term efficacy and safety of peroral endoscopic myotomy for the treatment of achalasia: a systematic review. *J Cardiothorac Surg*. Jan 03 2019; 14(1): 1. PMID 30606216
8. Crespín OM, Liu LWC, Parmar A, et al. Safety and efficacy of POEM for treatment of achalasia: a systematic review of the literature. *Surg Endosc*. May 2017; 31(5): 2187-2201. PMID 27633440
9. Akintoye E, Kumar N, Obaitan I, et al. Peroral endoscopic myotomy: a meta-analysis. *Endoscopy*. Dec 2016; 48(12): 1059-1068. PMID 27617421
10. Patel K, Abbassi-Ghadi N, Markar S, et al. Peroral endoscopic myotomy for the treatment of esophageal achalasia: systematic review and pooled analysis. *Dis Esophagus*. Oct 2016; 29(7): 807-819. PMID 26175119
11. Andolfi C, Fisichella PM. Meta-analysis of clinical outcome after treatment for achalasia based on manometric subtypes. *Br J Surg*. Mar 2019; 106(4): 332-341. PMID 30690706
12. Martins RK, Ribeiro IB, DE Moura DTH, et al. PERORAL (POEM) OR SURGICAL MYOTOMY FOR THE TREATMENT OF ACHALASIA: A SYSTEMATIC REVIEW AND META-ANALYSIS. *Arq Gastroenterol*. Jan-Mar 2020; 57(1): 79-86. PMID 32294740
13. Aiolfi A, Bona D, Riva CG, et al. Systematic Review and Bayesian Network Meta-Analysis Comparing Laparoscopic Heller Myotomy, Pneumatic Dilatation, and Peroral Endoscopic Myotomy for Esophageal Achalasia. *J Laparoendosc Adv Surg Tech A*. Feb 2020; 30(2): 147-155. PMID 31364910
14. Schlottmann F, Lockett DJ, Fine J, et al. Laparoscopic Heller Myotomy Versus Peroral Endoscopic Myotomy (POEM) for Achalasia: A Systematic Review and Meta-analysis. *Ann Surg*. Mar 2018; 267(3): 451-460. PMID 28549006
15. Awaiz A, Yunus RM, Khan S, et al. Systematic Review and Meta-Analysis of Perioperative Outcomes of Peroral Endoscopic Myotomy (POEM) and Laparoscopic Heller Myotomy (LHM) for Achalasia. *Surg Laparosc Endosc Percutan Tech*. Jun 2017; 27(3): 123-131. PMID 28472017
16. Marano L, Pallabazzer G, Solito B, et al. Surgery or Peroral Esophageal Myotomy for Achalasia: A Systematic Review and Meta-Analysis. *Medicine (Baltimore)*. Mar 2016; 95(10): e3001. PMID 26962813
17. Zhang Y, Wang H, Chen X, et al. Per-Oral Endoscopic Myotomy Versus Laparoscopic Heller Myotomy for Achalasia: A Meta-Analysis of Nonrandomized Comparative Studies. *Medicine (Baltimore)*. Feb 2016; 95(6): e2736. PMID 26871816
18. Teitelbaum EN, Soper NJ, Santos BF, et al. Symptomatic and physiologic outcomes one year after peroral esophageal myotomy (POEM) for treatment of achalasia. *Surg Endosc*. Dec 2014; 28(12): 3359-65. PMID 24939164
19. Ujiki MB, Yetasook AK, Zapf M, et al. Peroral endoscopic myotomy: A short-term comparison with the standard laparoscopic approach. *Surgery*. Oct 2013; 154(4): 893-7; discussion 897-900. PMID 24074429
20. Von Renteln D, Fuchs KH, Fockens P, et al. Peroral endoscopic myotomy for the treatment of achalasia: an international prospective multicenter study. *Gastroenterology*. Aug 2013; 145(2): 309-11.e1-3. PMID 23665071
21. Bhayani NH, Kurian AA, Dunst CM, et al. A comparative study on comprehensive, objective outcomes of laparoscopic Heller myotomy with per-oral endoscopic myotomy (POEM) for achalasia. *Ann Surg*. Jun 2014; 259(6): 1098-103. PMID 24169175
22. Vigneswaran Y, Yetasook AK, Zhao JC, et al. Peroral endoscopic myotomy (POEM): feasible as reoperation following Heller myotomy. *J Gastrointest Surg*. Jun 2014; 18(6): 1071-6. PMID 24658904
23. Kumagai K, Tsai JA, Thorell A, et al. Per-oral endoscopic myotomy for achalasia. Are results comparable to laparoscopic Heller myotomy?. *Scand J Gastroenterol*. May 2015; 50(5): 505-12. PMID 25712228

24. Kumbhari V, Tieu AH, Onimaru M, et al. Peroral endoscopic myotomy (POEM) vs laparoscopic Heller myotomy (LHM) for the treatment of Type III achalasia in 75 patients: a multicenter comparative study. *Endosc Int Open*. Jun 2015; 3(3): E195-201. PMID 26171430
25. Teitelbaum EN, Soper NJ, Pandolfino JE, et al. Esophagogastric junction distensibility measurements during Heller myotomy and POEM for achalasia predict postoperative symptomatic outcomes. *Surg Endosc*. Mar 2015; 29(3): 522-8. PMID 25055891
26. Chan SM, Wu JC, Teoh AY, et al. Comparison of early outcomes and quality of life after laparoscopic Heller's cardiomyotomy to peroral endoscopic myotomy for treatment of achalasia. *Dig Endosc*. Jan 2016; 28(1): 27-32. PMID 26108140
27. Sanaka MR, Hayat U, Thota PN, et al. Efficacy of peroral endoscopic myotomy vs other achalasia treatments in improving esophageal function. *World J Gastroenterol*. May 28 2016; 22(20): 4918-25. PMID 27239118
28. Schneider AM, Louie BE, Warren HF, et al. A Matched Comparison of Per Oral Endoscopic Myotomy to Laparoscopic Heller Myotomy in the Treatment of Achalasia. *J Gastrointest Surg*. Nov 2016; 20(11): 1789-1796. PMID 27514392
29. Khashab MA, Kumbhari V, Tieu AH, et al. Peroral endoscopic myotomy achieves similar clinical response but incurs lesser charges compared to robotic heller myotomy. *Saudi J Gastroenterol*. Mar-Apr 2017; 23(2): 91-96. PMID 28361839
30. Leeds SG, Burdick JS, Ogola GO, et al. Comparison of outcomes of laparoscopic Heller myotomy versus per-oral endoscopic myotomy for management of achalasia. *Proc (Bayl Univ Med Cent)*. Oct 2017; 30(4): 419-423. PMID 28966450
31. de Pascale S, Repici A, Puccetti F, et al. Peroral endoscopic myotomy versus surgical myotomy for primary achalasia: single-center, retrospective analysis of 74 patients. *Dis Esophagus*. Aug 01 2017; 30(8): 1-7. PMID 28575245
32. Peng L, Tian S, Du C, et al. Outcome of Peroral Endoscopic Myotomy (POEM) for Treating Achalasia Compared With Laparoscopic Heller Myotomy (LHM). *Surg Laparosc Endosc Percutan Tech*. Feb 2017; 27(1): 60-64. PMID 28145968
33. Ward MA, Gitelis M, Patel L, et al. Outcomes in patients with over 1-year follow-up after peroral endoscopic myotomy (POEM). *Surg Endosc*. Apr 2017; 31(4): 1550-1557. PMID 27858209
34. Hanna AN, Datta J, Ginzberg S, et al. Laparoscopic Heller Myotomy vs Per Oral Endoscopic Myotomy: Patient-Reported Outcomes at a Single Institution. *J Am Coll Surg*. Apr 2018; 226(4): 465-472.e1. PMID 29410262
35. Ramirez M, Zubieta C, Ciotola F, et al. Per oral endoscopic myotomy vs. laparoscopic Heller myotomy, does gastric extension length matter?. *Surg Endosc*. Jan 2018; 32(1): 282-288. PMID 28660419
36. Zhong C, Tan S, Huang S, et al. Peroral endoscopic myotomy versus pneumatic dilation for achalasia: a systematic review and meta-analysis. *Eur J Gastroenterol Hepatol*. Nov 2020; 32(11): 1413-1421. PMID 32516175
37. Ponds FA, Fockens P, Lei A, et al. Effect of Peroral Endoscopic Myotomy vs Pneumatic Dilation on Symptom Severity and Treatment Outcomes Among Treatment-Naive Patients With Achalasia: A Randomized Clinical Trial. *JAMA*. Jul 09 2019; 322(2): 134-144. PMID 31287522
38. Werner YB, Hakanson B, Martinek J, et al. Endoscopic or Surgical Myotomy in Patients with Idiopathic Achalasia. *N Engl J Med*. Dec 05 2019; 381(23): 2219-2229. PMID 31800987
39. Docimo S, Mathew A, Shope AJ, et al. Reduced postoperative pain scores and narcotic use favor per-oral endoscopic myotomy over laparoscopic Heller myotomy. *Surg Endosc*. Feb 2017; 31(2): 795-800. PMID 27338580
40. Wang X, Tan Y, Lv L, et al. Peroral endoscopic myotomy versus pneumatic dilation for achalasia in patients aged 65 years. *Rev Esp Enferm Dig*. Oct 2016; 108(10): 637-641. PMID 27649684
41. Hungness ES, Sternbach JM, Teitelbaum EN, et al. Per-oral Endoscopic Myotomy (POEM) After the Learning Curve: Durable Long-term Results With a Low Complication Rate. *Ann Surg*. Sep 2016; 264(3): 508-17. PMID 27513156
42. Ramchandani M, Nageshwar Reddy D, Darisetty S, et al. Peroral endoscopic myotomy for achalasia cardia: Treatment analysis and follow up of over 200 consecutive patients at a single center. *Dig Endosc*. Jan 2016; 28(1): 19-26. PMID 26018637
43. Inoue H, Sato H, Ikeda H, et al. Per-Oral Endoscopic Myotomy: A Series of 500 Patients. *J Am Coll Surg*. Aug 2015; 221(2): 256-64. PMID 26206634

44. Ling T, Guo H, Zou X. Effect of peroral endoscopic myotomy in achalasia patients with failure of prior pneumatic dilation: a prospective case-control study. *J Gastroenterol Hepatol.* Aug 2014; 29(8): 1609-13. PMID 24628480
45. Ren Z, Zhong Y, Zhou P, et al. Perioperative management and treatment for complications during and after peroral endoscopic myotomy (POEM) for esophageal achalasia (EA) (data from 119 cases). *Surg Endosc.* Nov 2012; 26(11): 3267-72. PMID 22609984
46. Li QL, Wu QN, Zhang XC, et al. Outcomes of per-oral endoscopic myotomy for treatment of esophageal achalasia with a median follow-up of 49 months. *Gastrointest Endosc.* Jun 2018; 87(6): 1405-1412.e3. PMID 29108981
47. Ling TS, Guo HM, Yang T, et al. Effectiveness of peroral endoscopic myotomy in the treatment of achalasia: a pilot trial in Chinese Han population with a minimum of one-year follow-up. *J Dig Dis.* Jul 2014; 15(7): 352-8. PMID 24739072
48. Onimaru M, Inoue H, Ikeda H, et al. Peroral endoscopic myotomy is a viable option for failed surgical esophagocardiomyotomy instead of redo surgical Heller myotomy: a single center prospective study. *J Am Coll Surg.* Oct 2013; 217(4): 598-605. PMID 23891071
49. Zhou PH, Li QL, Yao LQ, et al. Peroral endoscopic remyotomy for failed Heller myotomy: a prospective single-center study. *Endoscopy.* 2013; 45(3): 161-6. PMID 23389963
50. Li QL, Chen WF, Zhou PH, et al. Peroral endoscopic myotomy for the treatment of achalasia: a clinical comparative study of endoscopic full-thickness and circular muscle myotomy. *J Am Coll Surg.* Sep 2013; 217(3): 442-51. PMID 23891074
51. Lee Y, Brar K, Doumouras AG, et al. Peroral endoscopic myotomy (POEM) for the treatment of pediatric achalasia: a systematic review and meta-analysis. *Surg Endosc.* Jun 2019; 33(6): 1710-1720. PMID 30767141
52. Nabi Z, Ramchandani M, Chavan R, et al. Outcome of peroral endoscopic myotomy in children with achalasia. *Surg Endosc.* Nov 2019; 33(11): 3656-3664. PMID 30671667
53. Miao S, Wu J, Lu J, et al. Peroral Endoscopic Myotomy in Children With Achalasia: A Relatively Long-term Single-center Study. *J Pediatr Gastroenterol Nutr.* Feb 2018; 66(2): 257-262. PMID 28691974
54. Vaezi MF, Pandolfino JE, Yadlapati RH, et al. ACG Clinical Guidelines: Diagnosis and Management of Achalasia. *Am J Gastroenterol.* Sep 2020; 115(9): 1393-1411. PMID 32773454
55. Kahrilas PJ, Katzka D, Richter JE. Clinical Practice Update: The Use of Per-Oral Endoscopic Myotomy in Achalasia: Expert Review and Best Practice Advice From the AGA Institute. *Gastroenterology.* Nov 2017; 153(5): 1205-1211. PMID 28989059
56. Pasha SF, Acosta RD, Chandrasekhara V, et al. The role of endoscopy in the evaluation and management of dysphagia. *Gastrointest Endosc.* Feb 2014; 79(2): 191-201. PMID 24332405
57. Khashab MA, Vela MF, Thosani N, et al. ASGE guideline on the management of achalasia. *Gastrointest Endosc.* Feb 2020; 91(2): 213-227.e6. PMID 31839408
58. Zaninotto G, Bennett C, Boeckxstaens G, et al. The 2018 ISDE achalasia guidelines. *Dis Esophagus.* Sep 01 2018; 31(9). PMID 30169645
59. Stefanidis D, Richardson W, Farrell TM, et al. SAGES guidelines for the surgical treatment of esophageal achalasia. *Surg Endosc.* Feb 2012; 26(2): 296-311. PMID 22044977