



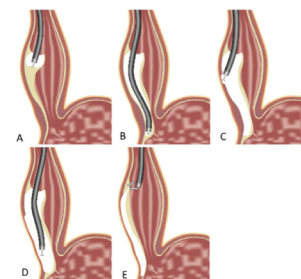
The State of The Art in Per-Oral Endoscopic Myotomy

Stavros N. Stavropoulos, MD, Rani Modayil, MD, and David Friedel, MD

Per-oral endoscopic myotomy has emerged as the preferred option for treatment of achalasia. This entirely endoscopic procedure has clinical efficacy and lower esophageal sphincter disruption comparable to laparoscopic Heller myotomy with lesser postprocedure pain and length of stay. This review describes per-oral endoscopic myotomy technique, evolution, patient selection, comparison to other therapies, training, and future considerations, including extrapolation of tunnel endoscopy to other situations.

Semin Thoracic Surg 28:137–146 © 2016 Elsevier Inc. All rights reserved.

Keywords: achalasia, endoscopic myotomy, POEM, NOTES, esophageal myotomy



POEM Technique (A) mucosal entry, (B) submucosal tunneling, (C and D) Myotomy, (E) Closure

INTRODUCTION

Achalasia is an uncommon esophageal motor disorder manifested predominantly by dysphagia to liquids and solids, and variably by chest pain, regurgitation, and weight loss. Malnutrition and pneumonia are seen in advanced cases. Diagnosis is strongly inferred by barium swallow (dilated esophagus with “bird’s beak”), but the gold standard is esophageal manometry demonstrating a nonrelaxing lower esophageal sphincter (LES) and variable abnormalities of esophageal body peristalsis. Therapy has targeted the LES with the aim of weakening or ablating the sphincter to allow easy passage of food in to the stomach. Therapeutic options include botulinum injection, pneumatic balloon dilation (PD), surgical myotomy (open, laparoscopic, thoracoscopic, and robotic), and most recently per-oral endoscopic myotomy (POEM). There is wealth of literature on the older modalities, including comparative analysis. Endoscopic botulinum therapy is safe, but efficacy is usually short-lived. Until the advent of POEM, surgical myotomy and PD were considered the most effective achalasia therapies, with comparable initial efficacy ranging to 2 years but superior long-term durability for surgical myotomy compared with PD.¹ Treatment selection is determined by patient and practitioner preference and local expertise. Considerations also include patient age, medical conditions, and prior achalasia treatment. POEM offers what appears so far to be an equivalent result of surgical myotomy via endoscopy alone with no external surgical incisions.

Department of Gastroenterology, Hepatology and Nutrition, Winthrop University Hospital, Mineola, New York

Address reprint requests to Stavros N. Stavropoulos, MD, Department of Gastroenterology, Hepatology and Nutrition, Winthrop University Hospital, 222 Station Plaza N Suite 429 Mineola, NY 11501. E-mail: sns10@columbia.edu

HISTORY

Ortega et al² described a direct endoscopic LES myotomy via the use of an electro-surgical knife but subsequent use was halted likely owing to concern for perforation and mediastinal infection. POEM derives from early natural orifice transluminal endoscopic surgery (NOTES) research that yielded the ingenious submucosal tunnel technique, which allows natural orifice, “scarless” transluminal endoscopic access to the mediastinum via the esophageal wall to perform procedures such as mediastinoscopy and lymph node biopsy, which heretofore required an external incision.³ The Apollo group used this technique to perform a LES myotomy in a small animal survival study, which provided proof of concept that this submucosal tunnel technique can be used to perform a Heller myotomy via a peroral, natural orifice approach.⁴ Inoue et al⁵ performed the first human endoscopic myotomy for achalasia in 2008 and coined the term “POEM.” POEM was first performed outside Japan in 2009 (by our group),⁶ and subsequent adoption of this technique was dramatic over the next several years with performance by Asian, European, and North American centers. The NOSCART consortium of the US surgical and gastroenterological endoscopic societies (Society of American Gastrointestinal and Endoscopic Surgeons and American Society for Gastrointestinal Endoscopy [ASGE]) surveyed the 20 centers known to be performing POEM in 2012 globally. Of the 20 centers, 16 responded including all “high-volume centers” defined at the time as centers having performed > 30 POEMs. The results of this survey (the international POEM survey or iPOEMs) encapsulated the first 4 years of global POEM experience.⁷ Survey results reflected 841 POEM’s and detailed

Central Message

Peroral endoscopic myotomy (POEM) is a novel intervention for achalasia that likely be validated as the preferred therapy for this disorder.

THE STATE OF THE ART IN POEM

many variables including operator discipline (surgery or gastroenterology), training (prior animal labs), site (operating room or endoscopy suite), technique variations, results, adverse events (AEs), and future perspectives.⁷ The global POEM experience now likely exceeds 6000 procedures with over 2000 procedures reported on in close to 200 publications. Over 50 centers now perform the procedure in the United States. Recent comprehensive documents from NOSCAR (the POEM White Paper) and the ASGE (the POEM PIVI document), provide comprehensive reviews of the state of POEM as of mid 2014 and in the case of PIVI compare POEM outcomes with those of standard Achalasia treatments in a formal methodical assessment.^{8,9}

TECHNIQUE

The technique is shown schematically in [Figure 1](#) and in a pictorial of endoscopic images [Figure 2](#). A standard flexible endoscope with a distal transparent cap is employed for POEM. An electro-surgical knife

(the 2 commonly used knives are shown in [Figure 3](#)) is passed via the instrument channel and a small mucosal incision is made in the mid-esophagus. This incision allows insertion of the endoscope into the submucosal space. Subsequently, a submucosal tunnel is created via infusion of a saline-methylene blue admixture to expand the submucosal space and dissection of the submucosa with the electro-surgical knife. The submucosal tunnel is extended from the entry site to the gastric cardia via sequential fluid infusion and electro-surgical knife submucosal dissection. This is done meticulously as not to disrupt the mucosal roof of the tunnel that must be intact to preserve the integrity of the mediastinum after ultimate closure. The electro-surgical knife is used to effect a distal esophageal myotomy, including the LES. This simulates a Heller myotomy without the need for external incisions. The tunnel entry site is closed by endoscopic clips or sutures. This ingenious submucosal technique offsets the mucosal incision and muscle incision by 2-3 cm of submucosal tunnel

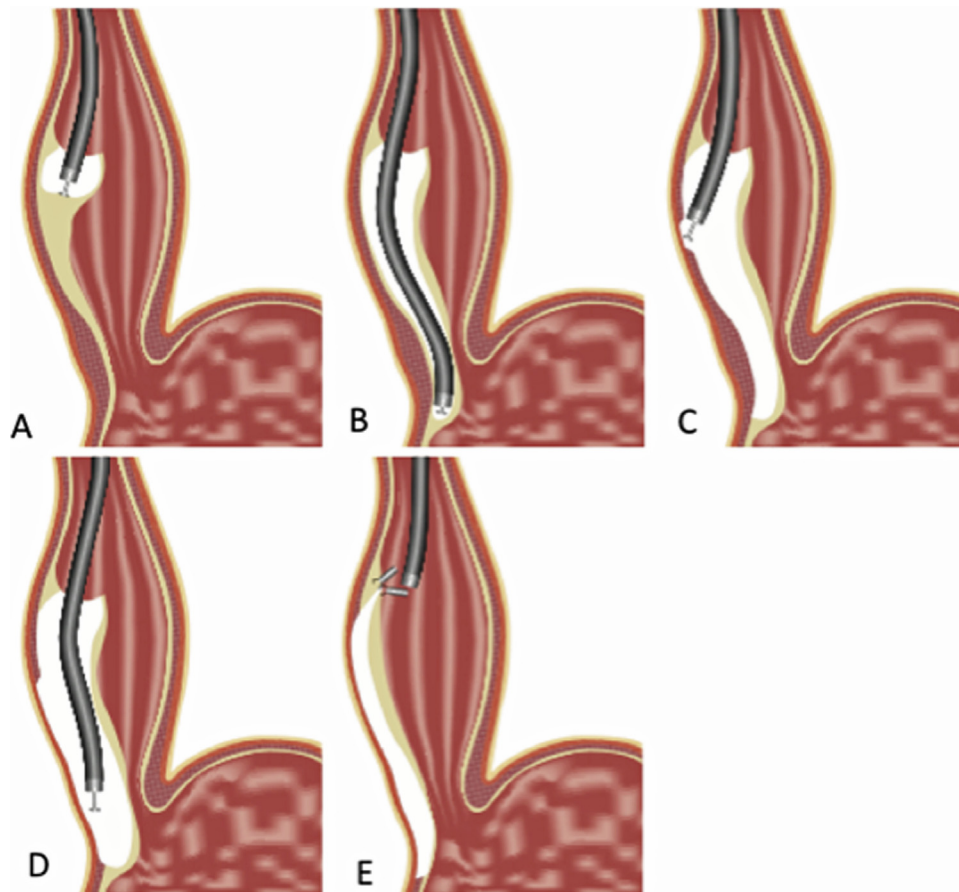


Figure 1. Per-oral endoscopic myotomy technique (S.N. Stavropoulos, Winthrop University Hospital, 2012). (A) Submucosal injection and mucosal entry, (B) creation of the submucosal tunnel, (C) esophageal myotomy, (D) lower esophageal sphincter and gastric cardia myotomy, (E) closure of the mucosal incision. (Color version of figure is available online at <http://www.semthorcardiovasc.org>.)

Download English Version:

<https://daneshyari.com/en/article/5621480>

Download Persian Version:

<https://daneshyari.com/article/5621480>

[Daneshyari.com](https://daneshyari.com)