Advances in Surgery 51 (2017) 193–205
ADVANCES IN SURGERY

Per-Oral Esophageal Myotomy

Is It a Safe and Durable Procedure for Achalasia?

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Keywords

• Peroral endoscopic myotomy • Achalasia • Interventional endoscopy
• Laparoscopic Heller myotomy

Key points

- Adequate surgical knowledge and endoscopic skill is a necessity, with appropriate preclinical training in a high-volume esophageal center.
- A learning curve of approximately 20 cases exists for straightforward cases.
- Per-oral esophageal myotomy (POEM) has durable relief of dysphagia and regurgitation with appropriate decreases in lower esophageal sphincter pressure and esophageal bolus clearance.
- Rates of gastroesophageal reflux disease after POEM may be slightly higher, but are comparable with that seen after laparoscopic Heller myotomy.
- Long-term clinical and cost-effectiveness studies are needed to fully understand the impact of POEM for the treatment of achalasia.

INTRODUCTION

Idiopathic achalasia is the most common primary esophageal motility disorder, estimated to affect 1 to 2 per 100,000 in the population [1]. Characterized by failure of relaxation of the lower esophageal sphincter in response to a swallow and loss of coordinated peristalsis in the distal esophageal body, achalasia results in dysphagia and regurgitation. Treatment has traditionally been

Disclosure Statement: The authors have nothing to disclose.

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http://dx.doi.org/10.1016/j.yasu.2017.03.015
0065-3411/17/

accomplished by surgical disruption of the lower esophageal sphincter with a laparoscopic Heller myotomy (LHM).

Based on endoscopic submucosal dissection (ESD) techniques, Inoue performed the first clinical per-oral esophageal myotomy (POEM) in Japan in 2008. Subsequently, an estimated 5000 POEMs worldwide have been performed for patients with achalasia as well as other esophageal motility disorders. Although the reported early to midterm outcomes after POEM have been excellent thus far [2–12], there are limited studies with longer term results that include robust physiologic data. As with other promising, novel techniques, key questions regarding where POEM should be performed as well as safety and durability must be answered. We discuss existing data regarding safety and durability of POEM, specifically addressing the skill set required, aspiration precautions, the standardization of POEM, learning curve, complications, appropriate preoperative workup and postprocedure follow-up.

HIGH-VOLUME ACHALASIA/ESOPHAGEAL CENTER

Preoperative workup and diagnosis

Owing to the rarity of achalasia, POEM should be done in centers with significant achalasia and esophageal volume. Validated, disease-specific questionnaires can help to establish the diagnosis of achalasia, assess disease severity, and establish baseline values to compare against to evaluate treatment success. The most widely used and reported instrument for achalasia is the 4-item Eckardt symptom score (Table 1) [13]. Higher scores represent increasingly severe disease, and postintervention scores of less than or equal to 3 are associated with treatment success [6].

Diagnostic studies to confirm and characterize achalasia include timed barium esophagram, esophagogastroduodenoscopy, and esophageal manometry. Timed barium esophagram is useful for both the evaluation of esophageal body and esophagogastric junction (EGJ) anatomy and to quantify a baseline height of the barium column and degree of esophageal emptying. It also allows detection of sigmoid esophagus, hiatal hernia, and epiphrenic diverticulae. Esophagogastroduodenoscopy is a required part of the achalasia preoperative

Table 1
The Eckardt symptom score

	Score			
Symptom	0	1	2	3
Dysphagia	None	Occasional	Daily	With every meal
Regurgitation	None	Occasional	Daily	With every meal
Chest pain	None	Occasional	Daily	Several times a day
Weight loss (kg)	0	<5	5–10	>10

The scores from the 4 symptom domains are summed to create a total score ranging from 0 to 12, with higher scores indicating worse disease severity.