



Is peroral endoscopic myotomy (POEM) ready to replace laparoscopic Heller's myotomy for achalasia? – comments on a recent systematic review

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Comment on: 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* 2017;27:123-31.

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Achalasia is a motility disorder of the esophagus for which the standard treatment for at least the past decade has been laparoscopic Heller's cardiomyotomy (HM) (1). For such a relatively uncommon disorder, it has nonetheless been extensively discussed in the literature in recent years. Firstly, the widespread adoption of high resolution manometry assessment of the esophagus has allowed classification of the disorder into clinical relevant subtypes (2). At approximately the same time, techniques of so-called "natural orifice" transluminal endoscopic surgery were being developed, with incision-free operations starting to be performed through the mouth and other sites (3). Eventually, in 2010, the first reports emerged of peroral endoscopic myotomy (POEM) for achalasia (4).

Initially viewed as an experimental procedure, now that many thousands of POEM procedures have been performed worldwide (5-7), POEM has seen increasing acceptance as a standard treatment option. Many case series, both large and small, have demonstrated efficacy and safety of the procedure. However, data comparing POEM to Heller's myotomy is limited, with data comparing POEM to other endoscopic procedures such as pneumatic dilatation even more so.

Therefore, it is with great anticipation that we await comparative trials and systematic reviews comparing POEM to other procedures. The manuscript "Systematic Review and Meta-Analysis of Perioperative Outcomes of Peroral Endoscopic Myotomy (POEM) and Laparoscopic

Heller Myotomy (LHM) for Achalasia" (8) is such a review and one which represents enormous effort on behalf of the authors. Reflecting the paucity of available data, the authors have identified only seven comparative studies reflecting 233 POEM patients and 250 Heller's patients. The number of papers excluded at each stage of the review process is clearly provided in a PRISMA diagram though the reasons for exclusion are not always evident. Clearly a large body of noncomparative studies was disregarded. Quality of the studies was appropriately evaluated. Techniques of POEM or of HM were not assessed, most notably the omission of reporting on the presence or extent of any fundoplication with the HM. The authors have utilized appropriate statistical methods to compare POEM to Heller's myotomy in terms of failure rates, overall complication rates, rates of gastroesophageal reflux disease (GERD), and other outcomes.

The most important aspects of any surgical procedure are safety and efficacy. Regarding safety, complications rates between POEM and HM were found to be comparable with nonsignificant differences in the total number of complications after analysis of only 6 studies. Severity of complications were reported for a subset of only three of these analyzed studies, and statistical analysis for differences between rates of major complications or of clinically relevant complications was not provided. More details from more studies will be required to make any useful comparison of safety and complication rates.

Efficacy was reviewed with regards to “short-term treatment failure”, alluding to improvements in Eckhart dysphagia scores, symptomatic dysphagia relief and improvements in esophagogastric junctional distensibility. Somewhat confusingly, dysphagia was also analyzed separately to treatment failure. The authors concluded a comparative benefit of efficacy of POEM over Laparoscopic HM, but the duration of follow-up was unclear as were the definitions of treatment failure. Long-term comparison was not included. Some of the studies’ results (9,10) were inexplicably omitted from analysis of efficacy. The authors’ conclusions related to efficacy, as for conclusions related to safety, are doubtful.

Two of the ways in which the POEM procedure differs from HM include the absence of a fundoplication and possibly a more limited disruption of the esophagogastric junction. Thus, two very important outcomes to compare are long-term gastroesophageal reflux rates as well as fundoplication-related side effects. The latter, which might include bloating, increased rectal flatulence and the inability to belch or vomit was not examined in this systematic review (though residual dysphagia was hypothesized to be at least partly attributable to the fundoplication in the HM group). Gastroesophageal reflux rates, using Quality of Life questionnaires were compared with no difference being identified between the POEM and HM groups. Important to note here is the well-known fact that patient reporting of postoperative symptoms of GERD bears little relationship to objective evidence of GERD, rendering the utility of such questionnaires minimal (11). However, attempts to objectively compare the groups with esophageal pH studies, though known to have been provided in at least one of the meta-analyzed studies (12), were disregarded in this systematic review.

Much of the limitation of this review reflects the reality of a marked paucity in the literature of comparative long-term data between POEM and other treatment modalities. Thus, the strength of the conclusions of any systematic review, this current review included, are consequently currently quite limited. However, this review lacks detailed comparison of complications types, of short- and long-term dysphagia rates and of objective GERD rates, which must all be better evaluated to adequately support conclusions. More attention must be applied in the future to assessing comparisons of long-term efficacy, fundoplication-related side effects and gastroesophageal reflux rates. Also, the relative indications for the procedures must be elucidated, such as emerging data suggesting the longer myotomy of

the POEM procedure might be of benefit in the achalasia subtype 3 (13) as well as in hypercontractile disorders of the esophagus. It may be in these areas that superiority of one or the other procedure might be identified.

The current authors should be commended for tackling a difficult problem while limited by the available data. Their findings contribute further to support for POEM procedure as an acceptable treatment option for achalasia, and allow scope for more detailed analyses in the future.

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