Widespread provider acceptance and training in per oral endoscopic myotomy evidenced by enhanced procedural patient access

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Introduction

- The first per oral endoscopic myotomy (POEM) was performed in 2008 and the first POEM performed in the United States was in 2010[1]
- While its efficacy has been shown to be better or at the least equivalent to laparoscopic Heller myotomy, it has taken some time for both provider acceptance and provider training in this novel endoscopic therapy for an orphan disease such as achalasia[2]
- This institution has performed POEM since 2010 and this study was designed to evaluate patient access to POEM over the following 11 years

Study Design and Methods

- This was a retrospective study of all patients who underwent a POEM at a single institution by a single surgeon over a 11-year period (2011-2022)
- The patients zip code and the hospitals zip code were used to calculate the distance driven by the patient in order to undergo a POEM
  - This was done using a Google Maps application programming interface (API) to enable automated calculations
- The distances traveled were then graphed vs year of surgery
- A polynomial regression was then calculated for the dataset as well as a linear regression to test for a non-zero slope

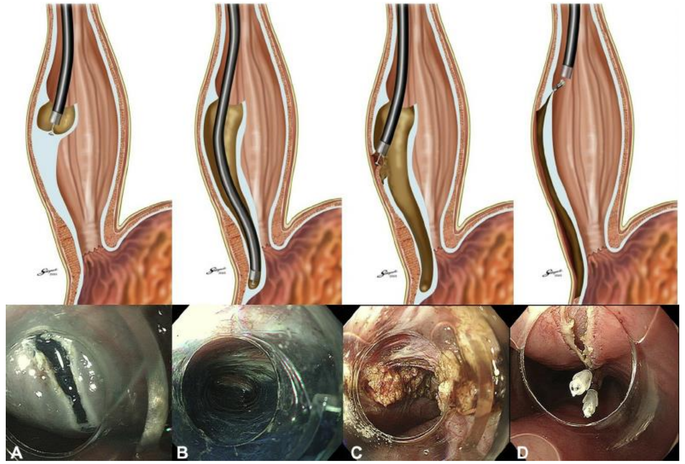


Figure 1. Basic steps of a POEM procedure. (A) Entry to the submucosal space is made after submucosal injection. (B) The submucosa is progressively dissected distally along the muscular layer creating a submucosal tunnel extending beyond the GE junction. (C) Myotomy of the circular esophageal muscle bundles is performed under direct vision. (D) After myotomy has been successfully completed, the mucosal entry site is closed with hemostatic clips[3]

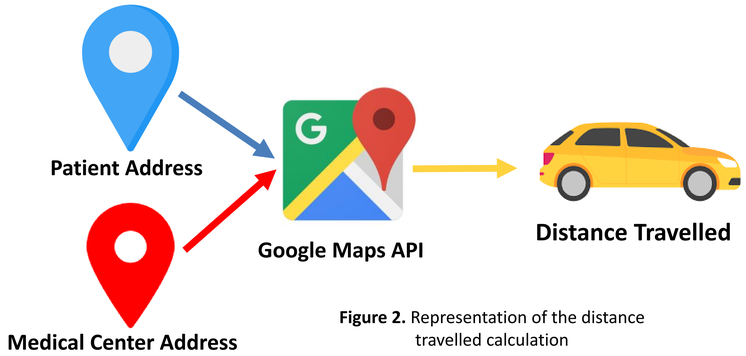


Figure 2. Representation of the distance travelled calculation

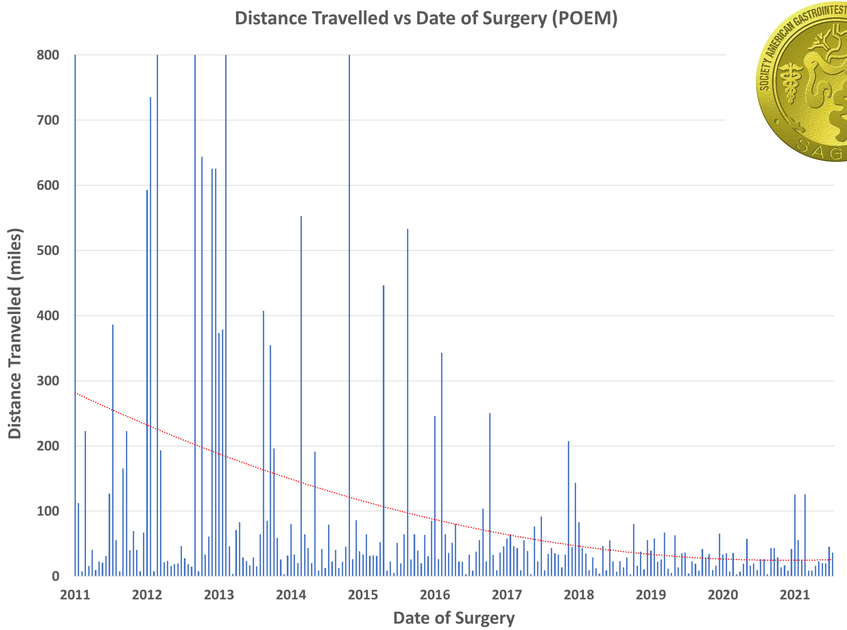


Figure 3. Distance travelled by the patient to undergo POEM

Results

- 222 patients were included in the study
- The average distance travelled over the first 5.5 years was 176 miles while the average distance travelled over the following 5.5 years was 37 miles ($p<0.01$)
- The polynomial regression had a significant negative coefficient and the linear regression showed a non-zero (negative) slope with a p-value of < 0.0001

Conclusions

- In the early development of POEM, patients procedural access was poor with patients traveling significant distances to undergo surgery
- With time however, patients were able to access the procedure closer to home as evidence by the significantly less miles driven by patients over time
- This is a unique measure of provider acceptance, provider training, and national implementation of POEM

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3. Inoue H, Sato H, Ikeda H, Onimaru M, Sato C, Minami H, Yokomichi H, Kobayashi Y, Grimes KL, Kudo SE. Per-oral endoscopic myotomy: a series of 500 patients. Journal of the American College of Surgeons. 2015 Aug 1;221(2):256-64.

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