

Never judge a book by its cover: the role of timed barium esophagography in patients with complete symptom relief after peroral endoscopic myotomy

Tae Hee Lee

Institute for Digestive Research, Digestive Disease Center, Soonchunhyang University Seoul Hospital, Seoul, Korea

See “Timed barium esophagography to predict recurrent achalasia after peroral endoscopic myotomy: a retrospective study in Thailand” by Tharathorn Suwatthanarak, Chainarong Phalanusitthepa, Chatbadin Thongchuan, et al., Clin Endosc 2024;57:610–619.

The treatment options for achalasia include botulinum toxin injection, pneumatic balloon dilatation (PD), peroral endoscopic myotomy (POEM), and surgical myotomy.¹ When PD is performed on patients with achalasia, those whose symptoms have improved are likely to have good emptying on timed barium esophagography (TBE), while those whose symptoms have not improved are likely to have poor emptying on TBE. Nonetheless, never judge a book by its cover. The study by Vaezi et al.² performed in the United States of that was published in *Gut* was a TBE study in which the authors assessed the role of TBE amongst patients with initially reported near-complete symptom relief after PD. In the study, TBE was performed 1 month after PD. The patients were instructed to drink a volume of barium they could tolerate without regurgitation or aspiration (usually between 100 and 250 mL). The researchers evaluated how many symptom recurrences occurred in patients who initially reported near-complete symptom relief with a concordant TBE finding (complete esophageal emptying) versus

a discordant TBE finding (poor esophageal emptying). In the study, 30% of patients with near-complete symptom resolution following PD had poor esophageal emptying, and the majority (90%) had recurrence within 1 year of treatment.² Importantly, a subset of patients showed poor esophageal emptying despite reports of excellent symptom relief after PD. Furthermore, poor emptying on TBE following surgical myotomy for achalasia has been reported to predict the risk of procedure failure or lack of symptom relief.³⁻⁵

POEM is the endoscopic equivalent of surgical myotomy and a newer technique for the management of achalasia.¹ POEM utilizes the principles of submucosal endoscopy to transform the submucosal layer in the esophagus and proximal stomach into a tunnel through which esophageal and gastric myotomy are carried out using a flexible endoscope.¹ Given previous TBE studies, post-POEM TBE could provide benefits for identifying those who are more likely to fail therapy and require additional intervention. However, DeWitt et al.⁶ reported that post-POEM TBE has limited utility in predicting a patient's clinical response. In the study, they performed TBE using 100 mL of water-soluble contrast (gastrografin), not barium. TBE was performed within 24 hours of POEM. They compared the number of patients with an Eckardt score >3 at 24 months after POEM between those with good esophageal emptying (<10% retention) and those with poor esophageal emptying (>10% retention). No significant difference in recurrence was observed between

Received: May 7, 2024 Revised: June 9, 2024 Accepted: June 10, 2024

Correspondence: Tae Hee Lee

Institute for Digestive Research, Digestive Disease Center, Soonchunhyang University Seoul Hospital, 59 Daesagwan-ro, Yongsan-gu, Seoul 04401, Korea
E-mail: iman0825@naver.com

© This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<https://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

those with good and poor emptying (6% vs. 13%, $p=0.37$).⁶ The limited utility of the TBE reported in the study would not surprise me. The timing of performing the post-POEM TBE was too early compared to that in other studies. Mucosal edema associated with both mechanical and thermal injury during POEM might be more prominent immediately after POEM and thus lead to more esophageal stasis during TBE. The different types of contrast and fixed dosage might mislead the results. These are probable causes of the observation suggesting failure to identify its utility. Fortunately, the study by Suwatthanarak et al.⁷ that was published in this issue of *Clinical Endoscopy* was a well-designed post-POEM TBE study in which the role of TBE amongst patients with improved symptoms following POEM in the prediction of recurrence was evaluated.⁷ In this study, TBE was performed at 1 month after POEM, and the recurrence was defined as an Eckardt score >3 . They demonstrated that the recurrence rate was higher in the discordant group (Eckardt score improved $>50\%$, TBE decreased $<50\%$) compared to that in the concordant group (both the Eckardt score and TBE improved $>50\%$). The discordant group had a 6.8-fold higher recurrence rate than the concordant group (52.9% vs. 7.7%, $p=0.017$). Therefore, this study concluded that TBE led to benefits for predicting recurrent achalasia after POEM. More favorable outcomes for POEM have been reported in patients who do not respond well to conventional therapies and who have failed prior endoscopic and surgical myotomy. However, POEM is unable to correct the underlying pathophysiology and thus, does not normalize swallowing but merely improves it. Moreover, the efficacy of POEM tends to decrease with time. Thus, long-term follow-up and frequent repeated or alternative treatments will be required.⁸ Therefore, TBE after POEM should be utilized to detect patients who have a high risk of recurrence even in those who initially reported symptom relief.

Conflicts of Interest

The author has no potential conflicts of interest.

Funding

This work was supported by the Soonchunhyang University Research Fund.

ORCID

Tae Hee Lee

<https://orcid.org/0000-0003-3049-8252>

REFERENCES

1. Han SY, Youn YH. Role of endoscopy in patients with achalasia. *Clin Endosc* 2023;56:537–545.
2. Vaezi MF, Baker ME, Achkar E, Richter JE. Timed barium oesophagram: better predictor of long term success after pneumatic dilation in achalasia than symptom assessment. *Gut* 2002;50:765–770.
3. Kostic SV, Rice TW, Baker ME, et al. Timed barium esophagogram: a simple physiologic assessment for achalasia. *J Thorac Cardiovasc Surg* 2000;120:935–943.
4. Tsoukali E, Gouvas N, Tsiaoussis J, et al. Specific esophagogram to assess functional outcomes after Heller's myotomy and Dor's fundoplication for esophageal achalasia. *Dis Esophagus* 2011;24:451–457.
5. Andersson M, Lundell L, Kostic S, et al. Evaluation of the response to treatment in patients with idiopathic achalasia by the timed barium esophagogram: results from a randomized clinical trial. *Dis Esophagus* 2009;22:264–273.
6. DeWitt JM, Siwec RM, Perkins A, et al. Evaluation of timed barium esophagram after per-oral endoscopic myotomy to predict clinical response. *Endosc Int Open* 2021;9:E1692–E1701.
7. Suwatthanarak T, Phalanusitthepa C, Thongchuan C, et al. Timed barium esophagography to predict recurrent achalasia after peroral endoscopic myotomy: a retrospective study in Thailand. *Clin Endosc* 2024;57:610–619.
8. Kahrilas PJ. Treating achalasia; more than just flipping a coin. *Gut* 2016;65:726–727.