

## Case Report

# Double-Scope Peroral Endoscopic Myotomy Technique: Light at the End of the Tunnel!

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**ABSTRACT** Peroral Endoscopic Myotomy has become the preferred therapy for achalasia cardia. An important predictor of the success and safety of this technique remains the correct identification of the Esophago gastric junction and the extent of myotomy. However, this key step may be difficult in a subset of patients. The present case highlights the use of double scope technique to manage such technical issues.

**KEYWORDS:** Achalasia, esophagus, myotomy

## INTRODUCTION

Achalasia cardia is an important cause of motor dysphagia characterized by esophageal aperistalsis and impaired relaxation of the lower esophageal sphincter during swallowing.<sup>[1]</sup> Peroral Endoscopic Myotomy (POEM) was first introduced by Inoue *et al.*<sup>[2]</sup> (Showa University Northern Hospital, Japan) and has become the preferred therapy for achalasia owing to its safety and effectiveness. An important predictor of the success and safety of POEM is correct identification of the Esophagogastric junction (EGJ) and the extent of myotomy. However, this key step may be difficult in a subgroup of patients, especially in those with sigmoid esophagus. We share our experience of a similar situation which was managed using double-scope technique.

## CASE REPORT

In our limited experience of three cases of POEM, we found difficulty in localization of EGJ in one patient. The patient was 32-year-old male with type I achalasia cardia and Eckardt score of 9. He had a dilated, sigmoid esophagus as noted on barium swallow [Figure 1]. After obtaining written informed consent, POEM was done under general anesthesia. An adult esophagogastroscope (9.8 mm, Olympus EVIS-EXERA GIF-HQ 190) was used. Submucosal tunneling was performed using dual knife. However, it was difficult to assess whether the scope had reached the EGJ area despite using the conventional methods, which are discussed

below. To overcome this problem, transnasal insertion of pediatric upper esophagogastroscope (5.6 mm, GIF-XP190N) was done. The position of the EGJ was identified by noting the transillumination of adult upper esophagogastroscope in retroflexed position [Figure 1]. This helped in guiding the submucosal dissection in accurate direction. The tunneling was done under the guidance of the second scope and continued up to 2–3 cm into the cardia. Myotomy of the circular muscles was done using IT knife. The patient had an uneventful recovery postprocedure with significant symptomatic improvement.

## DISCUSSION

Stavropoulos *et al.*<sup>[3]</sup> have reported the following methods for correct identification of the EGJ during POEM—depth of the endoscope from the incisor, presence of palisade vessels near the EGJ, presence of spindle-like veins in the submucosa and muscularis, and presence of criss-cross bundles of longitudinal muscle fibers inserting into the circular layer of the muscularis propria. These landmarks may, however, be difficult to interpret during the procedure. Preinjection of indocyanine green in the submucosa of the cardia, fluoroscopic imaging of an endoclip placed on the wall

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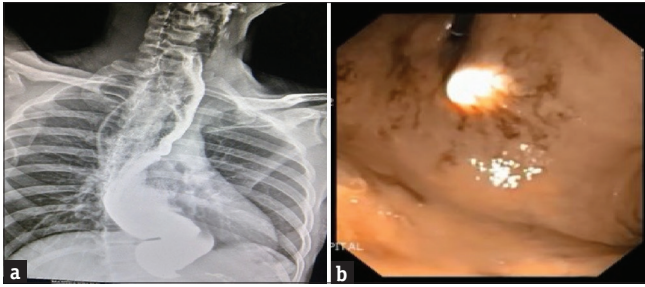
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**Figure 1:** (a) Barium swallow showing sigmoid esophagus (b) transillumination of adult endoscope as noted from the fundus using ultrathin pediatric endoscope

opposite the EGJ, and use of Endo FLIP system have been tried to address this issue.<sup>[3-5]</sup>

Double-scope POEM is advancement in POEM technique and is based on the appropriate identification of the cardia in the retroflexed position using a second ultrathin gastroscope. The efficacy of the approach has been demonstrated in randomized controlled trials.<sup>[6]</sup> In the trial, the method was used only to confirm the extent of myotomy after completion of myotomy and not during the procedure. Hong *et al.* have described the simultaneous use of oral insertion of gastroscope and thin transnasal endoscope for better results.<sup>[7]</sup> This technique does not require any specialized equipment, is useful in sigmoid esophagus and hiatal hernia, and has higher success rate with fewer complications<sup>[6,7]</sup>

The present report highlights the fact that double-scope POEM can be used safely for better identification of EGJ and adequate myotomy.

#### Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have

given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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#### Conflicts of interest

There are no conflicts of interest.

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