

# Difficult Closure of Buried and Inverted Entry Site during Per Oral Endoscopic Myotomy: Applying Proximal Clip First May Be the Solution!

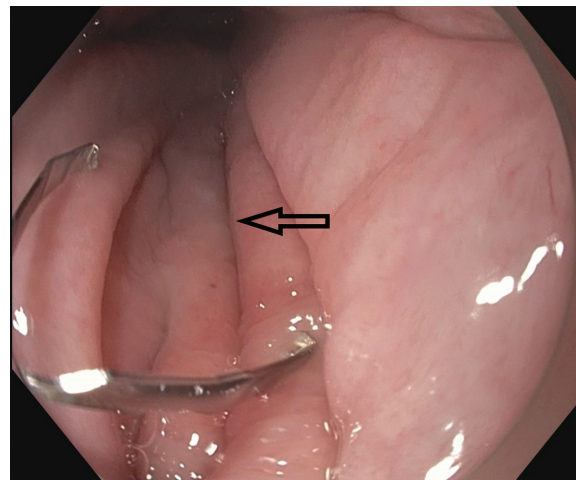
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A 45-year-old woman presented with an 8-year history of dysphagia and was diagnosed with type I achalasia cardia. The patient underwent peroral endoscopic myotomy (POEM) through a posterior approach and a 7-cm myotomy was performed. Closure of the entry site was difficult due to buried, inverted, and thickened mucosal flaps. Symmetrical approximation of mucosal flaps without pocket formation is essential to prevent delayed complications.<sup>1</sup> Approximation of deeper submucosal rather than the epithelial side of the mucosal flaps should prevent potential space formation below the closure line. The first clip is usually placed distal to the entry site.<sup>2</sup> In the present patient, the first clip was initially attempted distal to the entry site. Because of thick buried and inverted flap margins, repeated attempts to optimally close the entry site were not successful, even after insufflating the lumen with CO<sub>2</sub> (►Fig. 1). An alternate technique was used for appropriate closure of the entry site (►Video 1). The first clip was applied to normal mucosa proximal to the entry site. Immediately after the application of the first clip, the right flap margin got everted (►Fig. 2). The second clip was applied distal to the entry site, and subsequent clips were placed on the central part of the entry site (►Fig. 3) approximating the submucosal side of flaps (►Fig. 4). The postoperative course was uneventful, and the patient was discharged 24 hours after the procedure. Adequate closure of the entry site during the POEM procedure is essential to prevent delayed complications of leakage and infection. Inverted and buried mucosal flaps pose a challenge to successful closure of the entry site and various alternate techniques have been described previously for difficult closures. Over-the-scope clips<sup>3,4</sup> and the clip-with-line method have been described previously in such situations.<sup>5</sup> In the present case, a simple technique of



**Fig. 1** Buried and inverted mucosal flap margins (black arrow) at the entry site.

application of the first clip on mucosa proximal to the entry site everted the mucosal flaps and made subsequent closure easier.

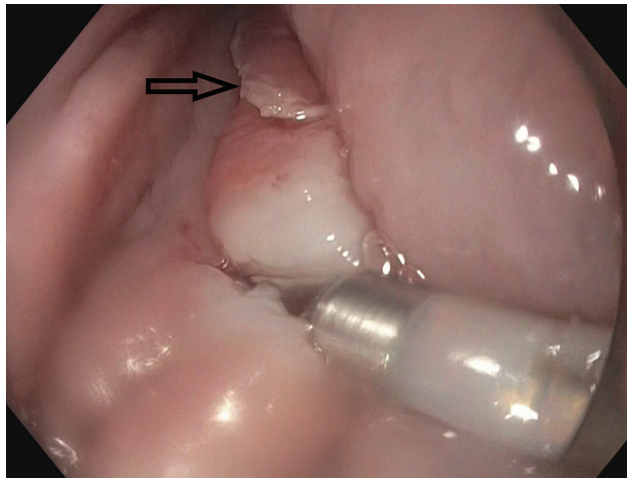
## Video 1

Application of the first clip proximal to the entry site to overcome difficulty in the closure of entry site during per oral endoscopic myotomy. Online content including video sequences viewable at: <https://www.thieme-connect.com/products/ejournals/html/10.1055/s-0044-1789008>.

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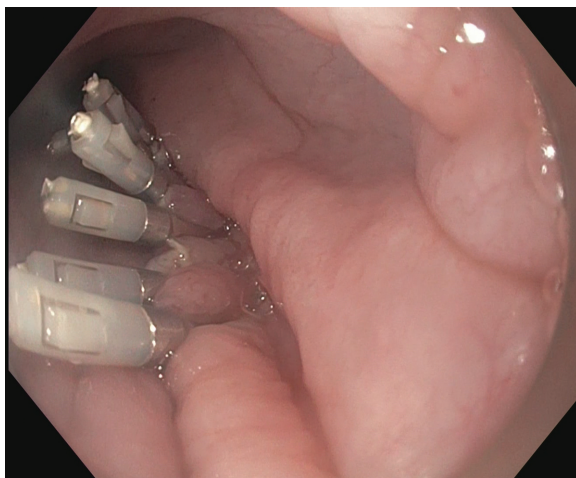
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**Fig. 2** Application of the first clip to normal mucosa proximal to the entry site and eversion of the right flap margin (black arrow).



**Fig. 3** Application of the central clip at the entry site.



**Fig. 4** Closure of the entry site.

#### Authors' Contribution

P.G. contributed to conception and design of the work, and editing the manuscript. V.S. contributed to conception of the work and writing the manuscript. P.S., M.R.S., and K.A. contributed to analysis or interpretation of data for the work. H.S. and A.S. contributed to acquisition of data.

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#### Conflict of Interest

None declared.

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