

First Successful Independent Peroral Endoscopic Myotomy (POEM) for Achalasia Cardia: A Milestone Case Report from Nepal

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INTRODUCTION

Achalasia cardia is an idiopathic primary esophageal motility disorder, with hallmark features of impaired relaxation of the lower esophageal sphincter (LES) and absence of esophageal peristalsis.¹ Treatment aims to relieve functional obstruction at the gastroesophageal junction. Peroral Endoscopic Myotomy (POEM), introduced in 2010, is a novel endoscopic technique that has shown efficacy comparable to laparoscopic Heller's myotomy and is now considered a first-line treatment in many centers globally.²⁻⁴ POEM is a form of natural orifice transluminal endoscopic surgery that is completed by creating a submucosal tunnel in the lower part of esophagus to reach the inner circular muscle bundles of the LES to perform myotomy, while preserving the outer longitudinal muscle

ABSTRACT

Achalasia cardia is an uncommon esophageal motility disorder characterized by failure of relaxation of the lower esophageal sphincter and loss of peristalsis in the lower part of the esophagus. Peroral Endoscopic Myotomy (POEM) has emerged as a minimally invasive intervention equivalent to Heller myotomy and an effective treatment modality. We present the first successful solo peroral endoscopic myotomy procedure performed in Nepal by an interventional gastroenterologist, who has managed a 45-year-old patient with long-standing dysphagia and a history of failed pneumatic dilatation with success. The procedure was uneventful. The patient showed symptomatic improvement postoperatively with minimal reflux. This case highlights the feasibility and safety of independently performed peroral endoscopic myotomy in a resource-limited setting. It shows the diaspora of interventional gastroenterology in Nepal and begins a new era for the same.

KEY WORDS

Achalasia cardia, Dysphagia, Eckardt score, Peroral endoscopic myotomy (POEM)

bundles.³ The result is decreased resting pressure of the LES, facilitating the passage of ingested material. POEM was initially introduced to treat achalasia by targeting the LES. POEM has expanded to include gastric POEM (G-POEM), myotomy of the pyloric sphincter to treat gastroparesis, and per rectal endoscopic myotomy (PREM) to treat adult Hirschsprung's disease.^{5,6}

In Nepal, POEM has been performed in a few cases previously, but these were conducted by visiting Indian gastroenterologists. This case represents the first solo POEM procedure performed by a Nepali endoscopist. This case report has been reported in accordance with the SCARE criteria.⁷

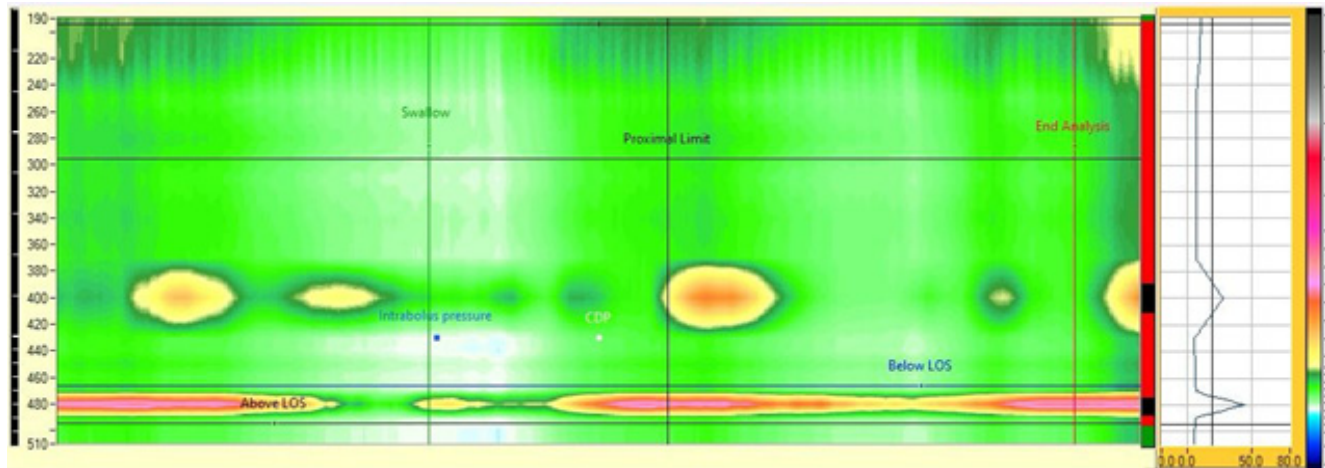


Figure 1. High Resolution Esophageal Manometry(HREM) showed elongated esophagus (Upper Esophageal Sphincter not visualized). All swallows had failed peristalsis with incomplete lower esophageal sphincter relaxation. Integrated relaxation pressure was high (IRP = 22.1). Findings were suggestive of long standing Type I Achalasia Cardia.

CASE REPORT

A 45-year-old male presented with progressive dysphagia to both solids and liquids for the past five years, associated with occasional regurgitation and weight loss. He underwent pneumatic dilatation up to 30 mm six months prior with transient relief. There were no significant comorbidities. High-resolution esophageal manometry was done which confirmed Type I achalasia (Fig. 1).

After informed consent, the patient underwent POEM under general anesthesia. A standard posterior submucosal tunneling approach was used with a 5 cm myotomy. The procedure time was approximately 100 minutes with no significant intraoperative complications.

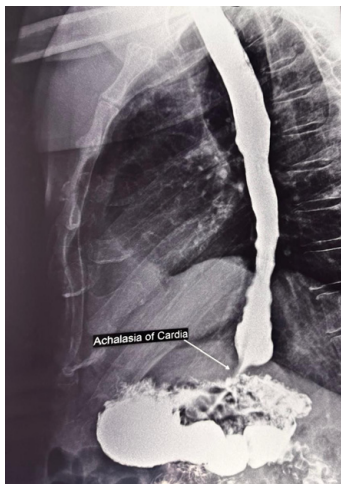


Figure 2. Barium swallow classic bird-beak appearance at the gastroesophageal junction.

The procedure began with injecting diluted methylene blue 10 cm above the LES (Fig. 2). It was followed by mucosotomy with submucosal entry (Fig. 3). Gradual submucosal tunnel creation was done (Fig. 4). Large submucosal vessels were coagulated with coagrasper (Fig. 5). Full thickness myotomy was done. (Fig. 6, 7) Hemostasis was achieved with a coagrasper forcep (Fig. 8). The mucosa was sealed with hemostatic clips at the incision site (Fig. 9).



Figure 3. Injection of diluted Methylene Blue

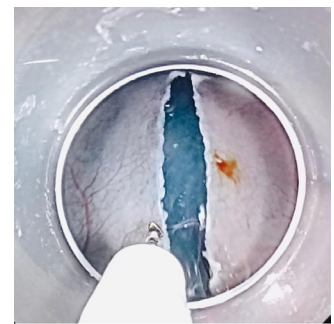


Figure 4. Mucosotomy with Submucosal entry

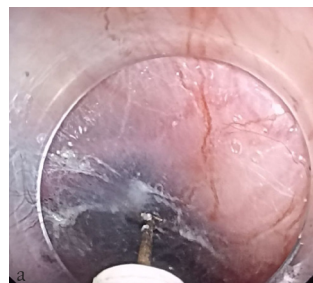


Figure 5 (a,b). Tunnel Creation



Figure 6. Coagulate large vessels with coagrasper

Post-procedure, the patient was managed conservatively and resumed a liquid diet on the second day. He was discharged on postoperative day 3 in stable condition.

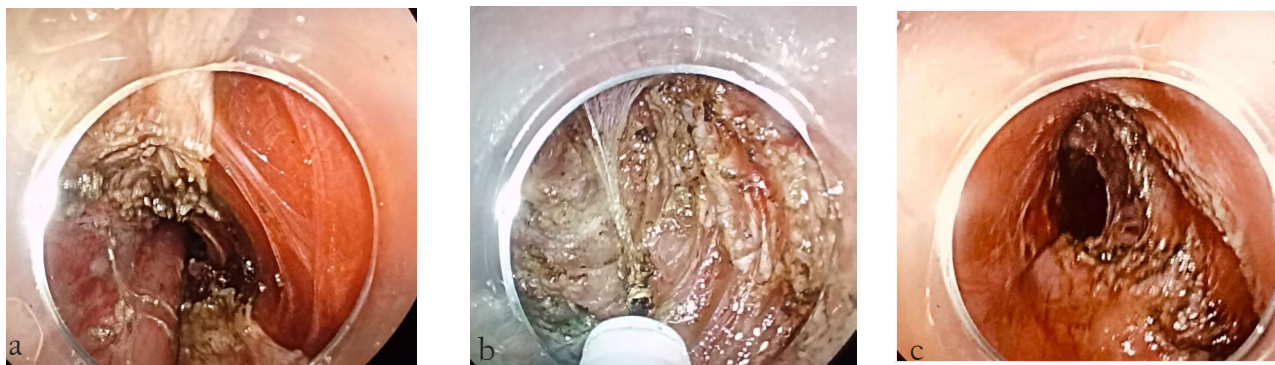


Figure 7 (a,b,c). Myotomy

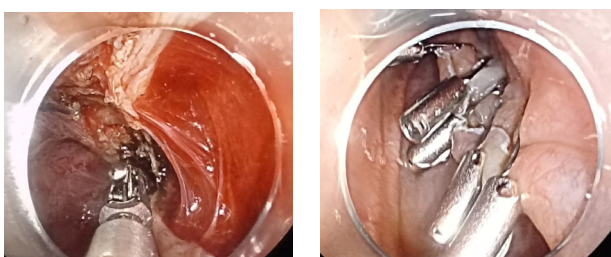


Figure 8. Achieving Hemostasis

Figure 9. Mucosal seal

On follow up after 4 weeks the patient revealed significant symptomatic improvement, with a decrease in Eckardt score from 6 to 1.⁸ No adverse events were noted.

DISCUSSION

POEM is a bridge that helps transforming the management of achalasia by providing a less invasive alternative with shorter recovery times and comparable efficacy to surgical myotomy.^{9,10} This case underscores its safety and effectiveness, even in a resource-limited setting like Nepal.

A recent case series done in KMC Teaching Hospital, Nepal shows surgeons still prefer Heller's myotomy with anterior Dor's fundoplication.¹¹ The advent of POEM opens the door to a minimal invasive approach with a lower complication rate for all types of achalasia cardia.^{9,12}

In HAMS Hospital, we have already performed six cases of POEM. The initial five cases were performed under the guidance of Dr. Vikas Singla, Interventional Gastroenterologist, MAX Hospital, INDIA. This case report highlights the first instance of performing a POEM by a Nepali interventional endoscopist without assistance. In January 2025, Paudel et al. published a case report mentioning two cases of POEM being performed for the first time in Nepal.¹³ It was done with the assistance of a gastroenterologist from AIIMS. So this case report

highlights the first independently done POEM for the first time in Nepal without the assistance of any international faculty, marking a milestone in the evolution of advanced endoscopic therapy in the country.

As per the white paper summary, with clinical success rates ranging from 82% to 100%, self-limited adverse events occurring in less than 10% of cases, minimal severe morbidity, and no fatality, published studies describing the results of over 1000 POEMs at a mean follow-up of 3 to 12 months are extremely encouraging.¹⁴

The patient's rapid postoperative recovery, absence of complications, and significant reduction in Eckhardt score assure the procedure's efficacy.¹⁰ As technical expertise grows in resource limited country like ours, POEM may become more accessible and replace more invasive procedures, particularly in recurrent or complex cases.

Post-POEM, many patients develop mild esophagitis and reflux symptoms. They can be managed by proton pump inhibitors (PPIs). In our case, we prescribed PPI for 6 weeks with good patient response. In the follow-up, they had only mild reflux with no other complications.

This report is the documentation of the first independently performed POEM in Nepal, with successful clinical outcomes and no complications. It shows that performing advanced endoscopic interventions in resource-limited setting is equally safe and successful. It paves the way for broader adoption of POEM in the treatment of all types of achalasia in Nepal. The day may not be far away when we will be seeing G-POEM and PREM in our country.

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