Use of cyanoacrylate to treat mucosal perforations during or after peroral endoscopic myotomy

Peroral endoscopic myotomy (POEM) is a safe and effective procedure for patients with achalasia [1]. Mucosal perforation is an inadvertent complication that is difficult or impossible to treat with standard clips [2]. Over-the-scope clips, endoluminal suturing devices, and fully covered stents have been used successfully [3, 4]. Cyanoacrylate is used as a sealant because of its rapid solidification rate [5]. We report on three patients who were treated successfully with cyanoacrylate following failure of standard closure.

Case 1: a 26-year-old woman underwent an uncomplicated POEM procedure but presented nausea, vomiting, and tachycardia 48 hours later. On endoscopy, a wide mucosal injury was found at the esophagogastric junction and 3 cm below. An attempt at closure was unsuccessful. Therefore, 2 mL of undiluted cyanoacrylate was applied, and subsequent esophagram confirmed no leaks. The patient was discharged at 3 days later. Endoscopy 8 months later showed a small scar (Fig. 1).

Case 2: a 51-year-old woman underwent POEM and showed contrast leak into the submucosal tunnel 24 hours after the procedure. The clips could not be rearranged to close the defect, and 2 mL of cyanoacrylate was applied successfully. The patient was discharged 48 hours later. Endoscopy confirmed normal mucosal healing (Video 1).

Case 3: a 40-year-old man underwent a difficult POEM procedure owing to the presence of submucosal fibrosis. He showed tearing of the mucosal entry site, which could not be closed with clips. Therefore, 3 mL of cyanoacrylate was applied successfully. The patient was discharged 48 hours later without complications (Fig. 2).

This is the first report of the use of cyanoacrylate glue to seal mucosal defects during or after POEM in order to prevent leakage of esophageal contents into the tunnel, mediastinum or peritoneum. This polymer represents an inexpensive, feasible, and effective alternative when standard options fail.