Minimizing reflux after peroral endoscopic myotomy: navigational pocket technique

Peroral endoscopic myotomy (POEM) is an established and effective treatment for patients with achalasia. However, post-POEM reflux is a common complication [1]. POEM with posterior approach enables better scope positioning and has similar efficacy to the anterior approach [2]. The gastric oblique muscles are contiguous with the circular muscles of the distal esophagus and important for preventing gastroesophageal reflux [3]. These muscle fibers are routinely encountered and easily disrupted on the posterior approach, which may increase the frequency of post-POEM reflux [4]. The oblique muscle fibers are most sparse along the lesser curvature [3]. A POEM strategy that minimizes disruption of the oblique muscles while maintaining the posterior approach may attenuate post-POEM reflux.

We present a modified posterior approach using a tunnel method, which allows predictable navigation of the myotomy to finish at the lesser curve of the stomach (Video 1). We used pre-injected blue color to navigate the tunnel, which reduces the number of injections needed inside the tunnel.

Submucosal injection of saline with methylene blue was performed at entry point. Subsequently, injections were performed in a spiral fashion toward the lesser curvature of the stomach, resulting in continuous mucosal elevation with the desired submucosal tunnel configuration (Fig.1). The standard POEM procedure was then performed. After tunneling, an ultraslim scope was used to confirm that the end of the tunnel was in the lesser curvature (Fig.2). By modifying the standard posterior approach for POEM, we devised a method to minimize disruption of the oblique muscles and potentially decrease post-POEM reflux. Creating a submucosal pocket by serial injections through the mucosa with visual guidance to the lesser curvature overcomes the limitation of navigating from within the tunnel. In addition, fewer injections are required inside the tunnel (Fig.3). By merely following the pre-injected blue color, the navigation within the tunnel was clear and predictable.
Competing interests

The authors declare that they have no conflict of interest.

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