

內視鏡抗逆流手術之新進展

Endoscopic anti-reflux surgery for GERD: An update

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The incidence of gastroesophageal reflux disease (GERD) is increasing. GERD not only affects the patient's quality of life, but also increases the risk of development of Barrett's esophagus and esophageal adenocarcinoma.

Proton pump inhibitors (PPIs) have been the mainstay of medical management of GERD. However, about 20% to 30% of patients with erosive reflux disease and 40% of patients with non-erosive reflux disease do not respond to PPIs. Moreover, no significant improvement is observed in symptoms with doubling the dose of PPIs.

The potential adverse effects of long term PPIs use are also a matter of concern.

These adverse effects include *Clostridium difficile* infection, bone fracture, hypomagnesemia, higher incidence of chronic kidney disease in susceptible populations and community-acquired pneumonia.

Anti-reflux surgery (ARS: open or laparoscopic fundoplication) has been the mainstay of treatment for patients not responsive to PPIs and documented reflux on pH-impedance analysis. However, a quarter of patients restart PPIs on long-term follow-up. Moreover, a requirement of re-intervention exists in about 15% and 30% patients after laparoscopic or conventional fundoplication, respectively. Other adverse events known to occur with ARS include dysphagia, gas bloating, and inability to belch. Patients with refractory GERD may not agree to ARS due to its invasive nature and possible adverse events as mentioned above. In a randomized controlled trial comparing ARS with PPIs, the remission rates are similar in both arms at 5-year follow-up. However, adverse events, including gas bloating, dysphagia and flatulence were significantly higher in the ARS arm.

There is an unmet need for minimal invasive treatment modalities for patients who do not respond to PPIs and are unwilling for ARS. Minimally invasive endoscopic options for GERD have been in place for more than a decade now. Some of these have not stood the test of time either due to inefficacy, non-durable response, or safety issues. These include implantation of injection devices (Enteryx [Boston Scientific Corp, Natick, MA, USA], Gatekeeper [Medtronic, Minneapolis, MN, USA], Plexiglas microspheres [Artes Medical, San Diego, CA, USA], NDO Plicator [NDO Surgical, Mansfield, MA, USA]). The currently available endoscopic anti-reflux modalities (EARMs) include radiofrequency ablation (RFA), transoral incisionless fundoplication (TIF), medigus ultrasonic surgical endostapler (MUSE), and anti-relux

mucosectomy/ mucosal ablation (ARMS/ARMA).

In this lecture, these novel procedures will be presented and discussed.