

Hybrid argon plasma coagulation-assisted mucosal ablation in the management of refractory gastroesophageal reflux disease

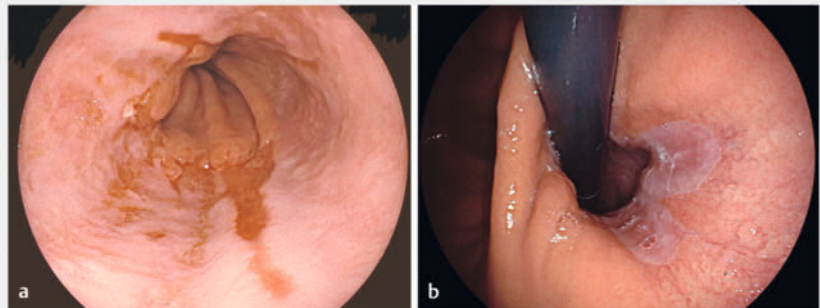
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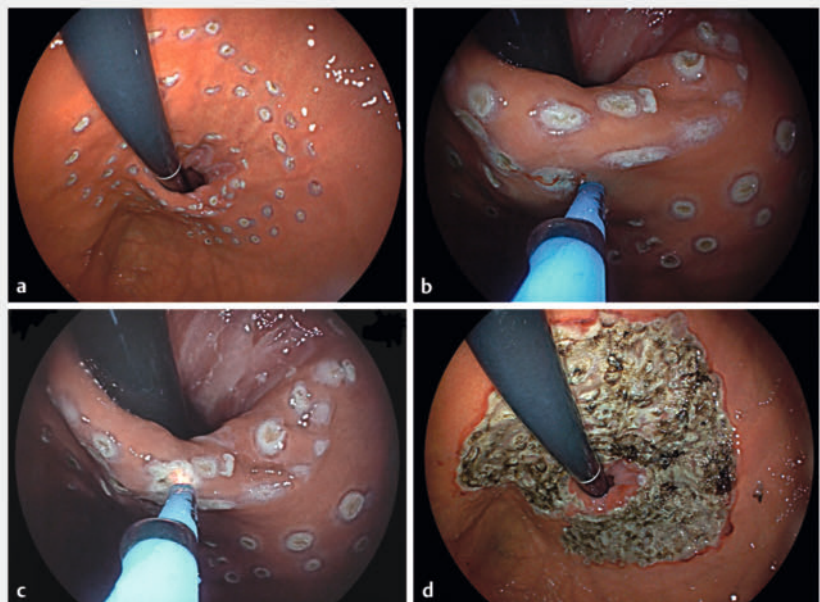
▶ Video 1 Hybrid argon plasma coagulation-assisted mucosal ablation in the management of refractory gastroesophageal reflux disease.

A 59-year-old woman was admitted to our hospital for the management of refractory gastroesophageal reflux disease (GERD). Gastroscopy, ascertaining the presence of GERD, revealed a manifestation classified as LA-C, accompanied by a conspicuous abnormality in the gastroesophageal flap valve, graded as Type III (▶ **Fig. 1**). Dynamic reflux monitoring unveiled an acid exposure time of 32%, accompanied by a DeMeester score of 144.9.

Following comprehensive patient consultation, the feasibility of endoscopic anti-reflux therapy was contemplated, subsequently leading to the application of hybrid argon plasma coagulation (hAPC) in the context of anti-reflux mucosal ablation (▶ **Video 1**). During the procedure, we initiated the delineation of the ablation territory employing hAPC, forming a horseshoe-shaped demarcation (▶ **Fig. 2a**). Subsequently, we executed submucosal injections directly within the marked region, utilizing hAPC (▶ **Fig. 2b**), followed by the argon plasma coagulation procedure atop the elevated mucosal surface (▶ **Fig. 2c**). Key technical nuances comprise the execution of ablation spanning a width of approximately



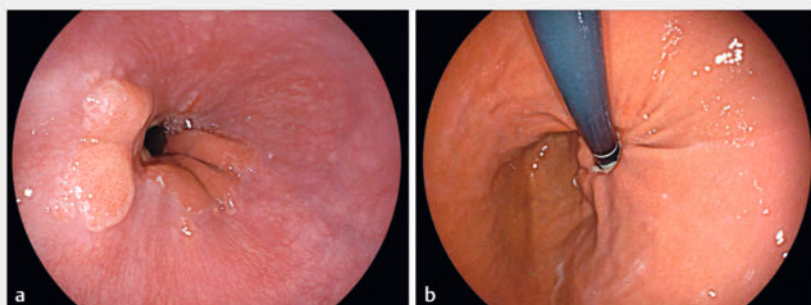
▶ Fig. 1 **a** The preoperative examination gastroscopy revealed reflux esophagitis LA-C. **b** It was accompanied by a conspicuous abnormality in the gastroesophageal flap valve, graded as Type III.



▶ Fig. 2 **a** A delineation of the ablation territory employing hybrid argon plasma coagulation (hAPC), forming a horseshoe-shaped demarcation. **b** Submucosal injections within the marked region, utilizing hAPC. **c** The argon plasma coagulation procedure atop the elevated mucosal surface. **d** The execution of ablation spanning a width of approximately 2–4 centimeters, with a circumferential dimension exceeding 90%, and reaching the submucosal layer's depth.

2–4 centimeters, with a circumferential dimension exceeding 90%, and reaching the submucosal layer's depth (▶ **Fig. 2d**). Postoperatively, the patient commenced

a liquid diet after 24 hours; no perforation, hemorrhage, or pyrexia were encountered. One month post-procedure, mucosal flap valve reshaping was



► **Fig. 3** One month post-procedure, mucosal flap valve reshaping was observed, resulting in the formation of an unobstructed contractile annulus.

observed, resulting in the formation of an unobstructed contractile annulus (► **Fig. 3**).

The application of anti-reflux mucosal ablation in the management of GERD [1] has been substantiated as an efficacious and secure approach, culminating in the amelioration of GERD-related symptoms and enhancement of overall quality of life [2,3]. A pioneering technique called hAPC amalgamates submucosal injections via a high-pressure water jet system, thereby establishing a protective cushion preceding ablation, ensuring that the ablation reaches the submucosal layer without incurring excessive harm [4]. Our utilization of hAPC in anti-reflux mucosal ablation not only attested to the achievement of submucosal ablation but also mitigated the inherent risks of perforation and postoperative stricture. To our knowledge, this represents the inaugural global case report delineating the implementation of hAPC within anti-reflux mucosal ablation for GERD management, thereby furnishing a salient reference for subsequent clinical therapeutic endeavors.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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