

Radiofrequency ablation of Barrett's esophagus using an overtube

We report on the use of an overtube and thin enteroscope to perform radiofrequency ablation (RFA) using the HALO⁹⁰ system (BARRX Medical, Sunnyvale, California, USA) in a 73-year-old man who had undergone radiotherapy to a head and neck squamous cell carcinoma and distal esophagectomy for adenocarcinoma of the esophagus (Ivor Lewis operation). He still had Barrett's epithelium present in the remaining esophagus with tongues extending 4 cm proximally to the anastomosis. Histology revealed low grade dysplasia.

As a result of the previous radiation therapy, his proximal esophagus was tortuous, stiffened, and partially stenotic. However, it was possible to pass a regular endoscope (GIF-E160; Olympus, Tokyo, Japan) and the HALO³⁶⁰ device. An initial ablation using the HALO³⁶⁰ device successfully eradicated 90% of the Barrett's epithelium. At follow-up endoscopy, however, some metaplastic epithelium still remained that needed to be ablated with a HALO⁹⁰ device. Because of the distorted esophageal anatomy, it was not possible to advance the scope with this device as it kinked at a point 22 cm distal to the incisors.

We therefore decided to place an overtube, with outer and inner diameters of 19.5 mm and 16.7 mm respectively, into the esophagus (Guardus; US Endoscopy, Mentor, Ohio, USA). This overtube consists of two tubes. The inner part contains an extension that covers the shaft of the endoscope, which allows it to be passed smoothly across kinks and strictures. In addition, the distal part of the overtube is soft and tapered. Once the overtube had passed the stricture and esophageal kinking, the scope and inner overtube were removed.

As the standard gastroscope (9.8 mm outer diameter) loaded with the HALO⁹⁰ device could not be advanced into the overtube, we elected to use a smaller diameter enteroscope (EN-450T5; Fujifilm, Tokyo, Japan). Because of its narrower outer diameter (9.4 mm) passage of this scope with the loaded HALO⁹⁰ device was feasible (▶ Fig. 1) and RFA was effectively applied (▶ Fig. 2).

An effective ablation of the remaining Barrett's epithelium was mandatory in this patient with a history of esophageal adenocarcinoma [1–3]. The challenges of delivering therapy were overcome by adapting to the difficult anatomy using other available instruments, such as the overtube and a thinner endoscope. The presence of the overtube allowed us to easily negotiate the tortuous, kinked, and stenotic esophagus.

We anticipate that more patients who require RFA for Barrett's epithelium but who have difficult esophageal anatomy will be encountered in the future. These include patients with problems such as esophageal stenosis, diverticuli, and pharyngeal pouches. Although delivery of RFA can be accomplished with the smaller HALO⁶⁰ device, the device is not widely available, and it may still not be possible to pass it through a tortuous and stenotic esophagus. Thus, we believe that the use of an overtube represents a viable solution to allow RFA to be performed using the various HALO devices.

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Competing interests: None

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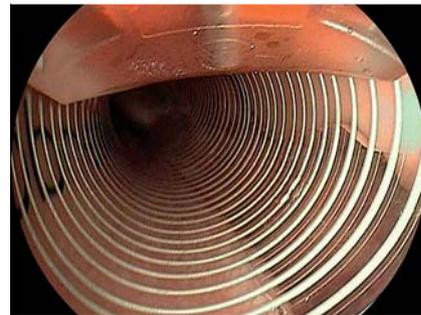


Fig. 1 The enteroscope loaded with the HALO⁹⁰ device is easily advanced through the overtube, which is bridging the curves and stenosis present in the upper esophagus.

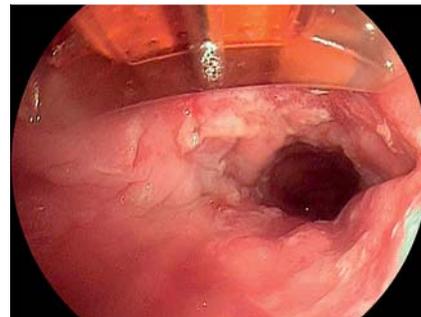


Fig. 2 The overtube has been pulled back slightly to expose the scope with HALO⁹⁰ system and effective radiofrequency ablation is then applied to the remaining Barrett's epithelium.

Bibliography

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