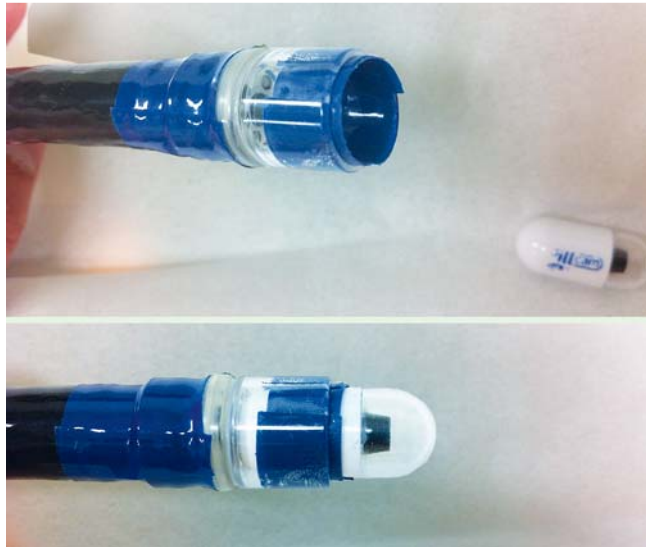
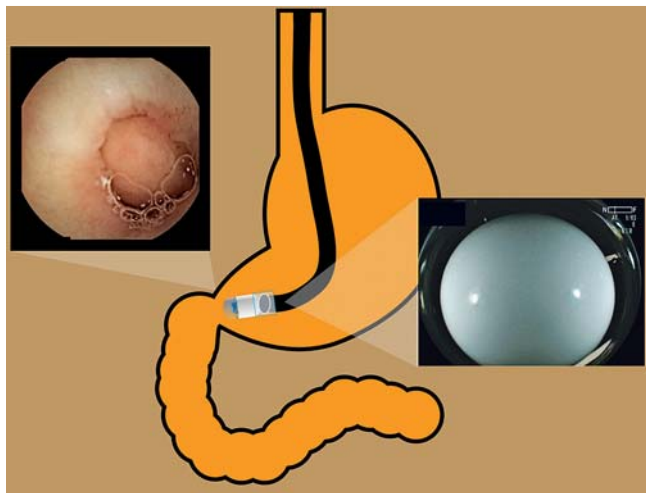


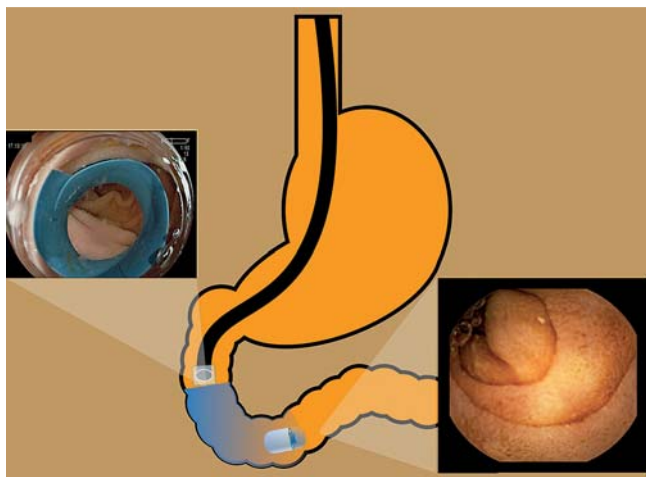
## A novel method for endoscopic placement of a capsule endoscope with use of a transparent hood and real-time viewer



**Fig. 1** a,b A novel method for endoscopic placement of a capsule endoscope. **a** A transparent hood, whose inside wall is lined with vinyl tape, is attached to the tip of the endoscope. **b** The capsule is placed inside the transparent hood, with the same tilt angles used for both the endoscopic image and the capsule endoscope image.



**Fig. 2** Because the capsule prevents visualization of the endoscopic image, the RAPID real-time viewer is used to watch the capsule endoscope image while the endoscope with the capsule is advanced through the pharynx, esophagus, and stomach into the duodenum.



**Fig. 3** The capsule is released into the duodenum by injecting water through the accessory channel.

Capsule endoscopy relies on an intact swallowing mechanism and unimpeded passage of the capsule through the pylorus [1]. A new method for endoscopic placement of the capsule is described.

A transparent hood (MH-464; Olympus, Tokyo, Japan), whose inside wall is lined with vinyl tape, is attached to the tip of the endoscope (● Fig. 1 a). The activated capsule endoscope is monitored with a RAPID real-time viewer (Given Imaging, Yokne'am Illit, Israel). The capsule is placed inside the transparent hood, with the same tilt angles used for both the endoscopic image and the capsule endoscope image (● Fig. 1 b). Because the capsule prevents visualization of the endoscopic image, the RAPID real-time viewer is used to watch the capsule endoscope image while the endoscope with the capsule is advanced through the pharynx, esophagus, and stomach into the duodenum (● Fig. 2). The capsule is then released into the duodenum by injecting water through the accessory channel (● Fig. 3). The procedure is shown in ● Video 1.

Six patients underwent successful endoscopic duodenal placement of the capsule without complications. In one case, biopsy forceps were needed to eject the capsule because the capsule was not released after water had been injected. A complete small-bowel examination was achieved in all six patients. The mean time required for the capsule to pass from the pharynx through the pylorus was 5 minutes. Therefore, our method is speedier and easier to use than previously reported methods [2–4].

Because the currently available capsule endoscope (PillCam SB 2; Given Imaging) provides two frames per second, the operator may be aware of a time lag between maneuvering the endoscope and viewing the capsule endoscope images. However, this will not occur when a newer version of the capsule endoscope with adaptive frame rate technology is used. The described method for endoscopic placement of the capsule endoscope in patients with dysphagia, anatomical abnormalities, or gastroparesis is safe and effective.

### Video 1

Endoscopic placement of a capsule endoscope with use of a transparent hood and real-time viewer.

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**Competing interests:** None

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