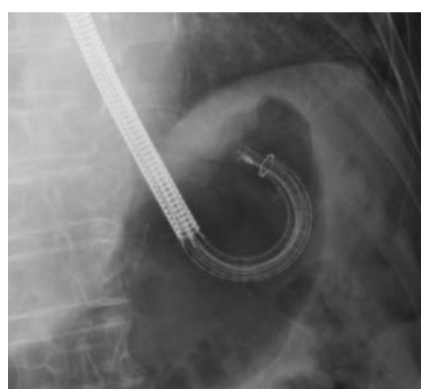


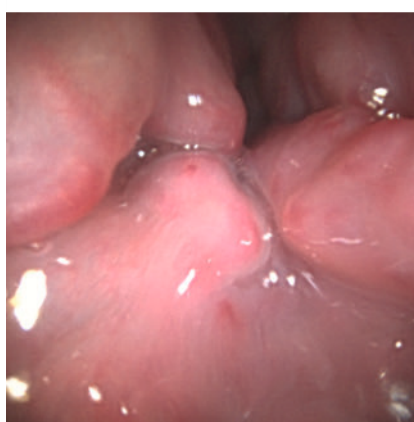
# Endoscopic injection sclerotherapy with ligation for esophageal varices using single-use endoscope: Report of a video case



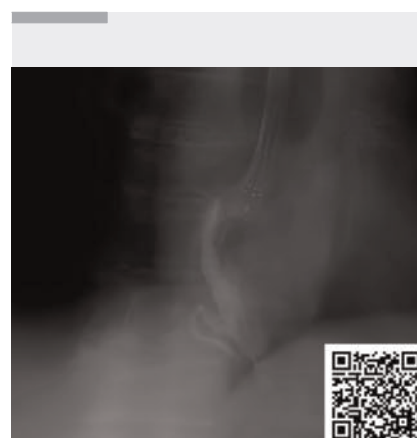
► **Fig. 1** Single-use endoscope (aScope Gastro; Ambu A/S, Tokyo, Japan).



► **Fig. 2** Single-use endoscopes have a wide range of motion. The scope tip is translucent during fluoroscopy.



► **Fig. 3** Varices showed strong development.

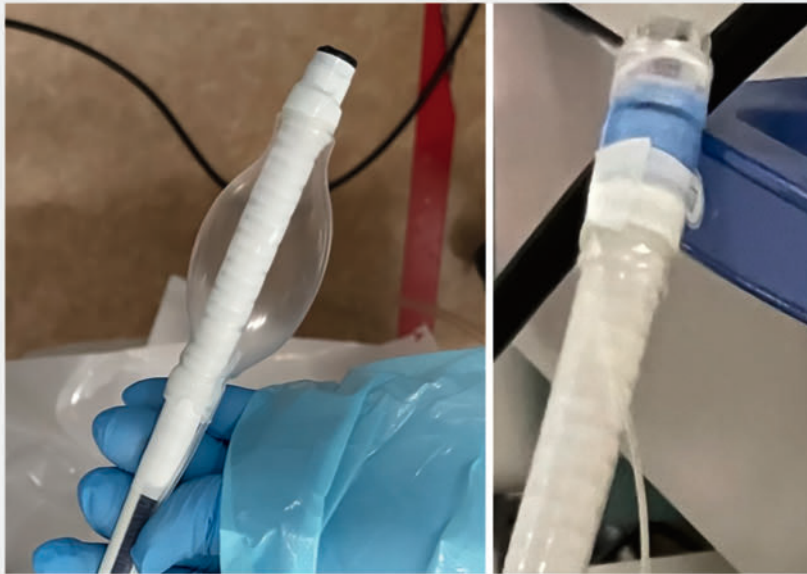


► **Video 1** This report is the first video case report describing performance of endoscopic injection sclerotherapy with ligation for esophageal varices using a single-use endoscope. This scope is useful for varix treatment using fluoroscopy.

In recent years, single-use endoscopes (► **Fig. 1**) have been used for diagnosis and treatment [1,2]. They have a wide range of motion. Moreover, the scope tip is translucent during fluoroscopy (► **Fig. 2**). Their wide range of motion makes endoscopic variceal ligation (EVL) easy to perform. Additionally, because of the highly radiolucent structure of the scope tip, the flow of the injected sclerosing agent supplemented with contrast medium can be observed clearly

during endoscopic injection sclerotherapy (EIS). This case report includes the first video recording of the use of a single-use endoscope for endoscopic injection sclerotherapy with ligation (EISL) for esophageal varices. This video presents a typical case (► **Video 1**). The 77-year-old man had alcoholic cirrhosis and esophageal varices (► **Fig. 3**). A single-use endoscope (aScope Gastro; Ambu A/S, Tokyo, Japan) equipped with a balloon and an EVL

device at its tip was used (► **Fig. 4**). After inflating a balloon attached to the endoscope tip, the varices were punctured using a 25-gauge needle (Varixer; TOP Corp., Tokyo, Japan). Use of the balloon prevents migration of sclerosant into the drainage flow. Sclerosant (ethanolamine oleate) was injected into the feeder while we confirmed the injection using fluoroscopy. The tip structure facilitates checking whether sclerosant is flowing into the drainage flow (► **Fig. 5**). This confirmation can prevent an embolism into the general circulation. After EIS, EVL was performed for the puncture hole. No adverse event occurred. Recently, EVL has been reported as commonly leading to recurrence when used alone [3]. By contrast, EISL, a combination of EIS and EVL, is reportedly useful as a treatment combining embolization of the blood supply by EIS and local blood flow blockage by EVL [4]. The fea-



► **Fig. 4** A balloon and endoscopic variceal ligation (EVL) device attached to the endoscope tip can be inflated to prevent embolization of the drainage flow. EVL can be performed quickly.



► **Fig. 5** During fluoroscopy, the scope tip is translucent, which allows clear identification of the balloon and ethanolamine oleate flow.

ture of the single-use scope demonstrably makes it possible to perform EVL/EIS both safely and effectively.

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### Conflict of Interest

The authors declare that they have no conflict of interest.

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