

## A Case of Esophageal Hemangioma Successfully Treated by Endoscopic Injection Sclerotherapy

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A 44-year-old man was referred to our hospital for therapy for an esophageal hemangioma that had increased remarkably in size over three years of endoscopic follow-up. Although the patient had no history of dysphagia or hematemesis, prophylactic removal of the tumor was planned to prevent hemorrhage. The hemangioma was treated successfully by two rounds of endoscopic injection sclerotherapy (EIS) using 5 % monoethanolamine oleate. Only mild chest pain was noted during therapy.

Esophageal hemangioma is a rare disease that may cause bleeding or difficulty eating. Surgical resection, endoscopic mucosal resection, endoscopic submucosal dissection, and laser therapy have all been reported as treatment measures for these lesions. We opted for EIS in the present case because of its low invasiveness and ability to treat lesions protruding from the esophageal wall. Blood flow volume and the precise location of the tumor in the esophageal wall should be evaluated by imaging examinations when deciding on the treatment for esophageal hemangioma. *Shinshu Med J 64 : 75–78, 2016*

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### I Case report

A 44-year-old man was referred to our hospital due to the remarkable growth of an esophageal hemangioma over the course of three years of endoscopic follow-up. He had no complaints of dysphagia or hematemesis. The tumor was detectable as a soft dark-bluish submucosal lesion in the thoracic esophagus. It was 40 mm in length, occupied approximately one third of the esophageal circumference, and contained reddish areas in endoscopic examination (**Fig. 1**). The lesion appeared as an isoechoic heterogeneous mass with partially hypoechoic structures in endoscopic ultrasonogra-

phy (EUS) examination. The majority of the mass was located in the submucosal layer, with a part of it protruding from the esophageal wall through the muscle layer (**Fig. 2**). Computed tomography (CT) examination disclosed thin staining of the lesion during late phase contrast enhancement (**Fig. 3**). The diagnosis of cavernous hemangioma was made based on these findings. Although the patient experienced no additional symptoms, prophylactic removal of the tumor was planned to reduce the risk of hemorrhage since the lesion had been expanding and parts of the mucosal surface were thinning. We selected endoscopic injection sclerotherapy (EIS) for the initial treatment primarily because of its low invasiveness. Endoscopic resection was contraindicated due to an elevated risk of massive bleeding and perforation of the esophagus from the protruding tumor. EIS of the hemangioma was performed using 5 % monoethanolamine oleate (EO) containing

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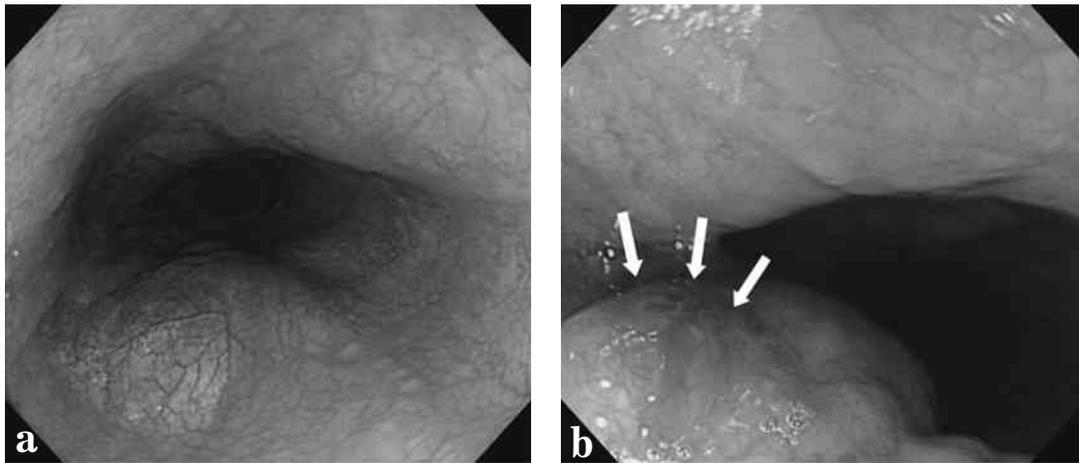


Fig. 1 Endoscopic findings prior to treatment.  
a : The lesion appears as a dark blue swelling in the submucosal layer.  
b : A red spotted area can be seen at the top of the lesion (arrows).



Fig. 2 Endoscopic ultrasonography (EUS) image acquired with a 20 MHz miniature probe showing an isoechoic mass (arrows) localized mainly in the submucosal layer and partially protruding from the esophageal wall through the muscle layer (arrowheads).



Fig. 3 Computed tomography (CT) image revealing thin staining of the lesion during late phase contrast enhancement (arrows).

iopamidol according to our institutional EIS procedures for esophageal varices. After a total of 4 ml EO was injected into the hemangioma from two injection points, the multinodular structure that represented the hemangioma was visualized by X-ray fluoroscopy (**Fig. 4**). The EO remained in the hemangioma for a relatively long time, which indicated slow blood flow in the tumor. No adverse events were observed apart from mild chest pain. The hemangioma became markedly reduced in size but was still present during endoscopic examination six months later. Thus, a second round of EIS therapy was carried out using a total volume of 4.5 ml EO into three injection points. The patient complained of mild chest pain similar to that in the first procedure. Periodic follow-up endoscopic examinations have confirmed the disappearance of the lesion for at least 18 months (**Fig. 5**).

## II Discussion

Esophageal hemangioma is a rare disease that accounts for 2-4 % of benign esophageal tumors<sup>1)</sup>. It is usually detected by endoscopy as a soft dark-bluish submucosal tumor which is relatively easy to distinguish from other tumors. Although typically harmless when small, advanced cases of esophageal hemangioma may pose a risk of bleeding and passage obstruction. However, there exists no established treatment approach for such larger lesions.

As venous anomalies, hemangioma lesions often possess slow blood flow in tumor masses, which is why endoscopic resection and EIS can be applied in many cases. Tumors can also be removed by endoscopic mucosal resection or endoscopic submucosal dissection if they are restricted to the mucosal or submucosal layer, but those that protrude from the esophageal wall, as in this case, should not be resected endoscopically due to a high risk of hemorrhage or perforation<sup>2)</sup>. Thus, we opted for the mildly invasive EIS as the first treatment for our patient. Absolute ethanol, 1 % polidocanol, and 5 % EO that is typically used for sclerotherapy of esophageal varices has been reported as effective for sclerotherapy of hemangioma in two case reports<sup>3,4)</sup>. We used

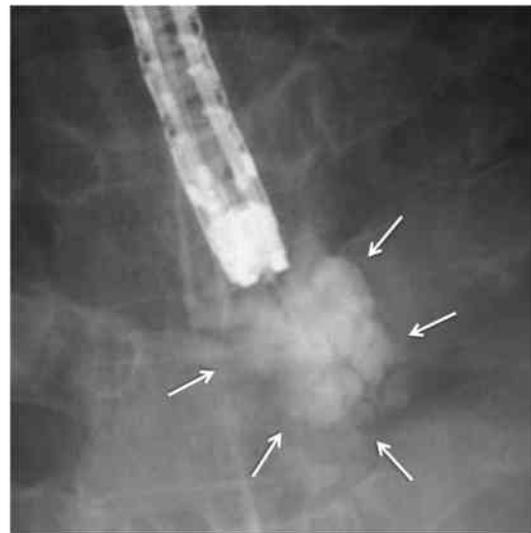


Fig. 4 Endoscopic hemangiogram during injection sclerotherapy. The cavities and vessel structures of the hemangioma are visible (arrows).



Fig. 5 Endoscopic examination 18 months after treatment shows residual scars only (arrows).

5 % EO containing iopamidol in the present case since it is most commonly employed for sclerotherapy of esophageal varices at our institution. It makes the sclerosant visible in the esophageal wall, so that we can inject an adequate quantity to avoid hemolysis and perforation as side effects of sclerotherapy.

Surgical resection is generally considered to be preferable over endoscopic therapy when blood flow in the tumor is abundant or when the lesion extends

prominently from the esophageal wall<sup>5)</sup>. Hence, lesion blood flow should be assessed using enhanced CT examination and/or EUS to rule out the option of endoscopic treatment.

Lastly, potassium titanyl phosphate/yttrium aluminum garnet laser therapy has also been reported as effective for esophageal hemangioma<sup>6)</sup>. However, frequent doses of radiation are required to eradicate lesions, which may be most suitable for smaller

tumors or those that cannot be treated by other measures.

In conclusion, we encountered a rare case of esophageal hemangioma that could be resolved successfully with EIS following consideration of the tumor location and blood flow. Further consensus is needed on the conventions for treatment of this disorder.

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