Underwater endoscopic mucosal resection of colon hemangiomas compatible with the blue rubber bleb nevus syndrome, following endoscopic ultrasonography

Blue rubber bleb nevus syndrome (BRBNS) is a rare congenital disease with venous malformations on the skin and in the gastrointestinal tract. Gastrointestinal venous malformations frequently cause bleeding and/or iron deficiency anemia [1]. Endoscopic approaches such as endoscopic mucosal resection [2], electrocoagulation, sclerotherapy, and ligation [3] have been reported for the treatment of symptomatic gastrointestinal hemangiomas associated with BRBNS. Recently, underwater endoscopic mucosal resection (UEMR) has rapidly been becoming a game-changing technique for endoscopic polyp resection. UEMR is usually simpler, cheaper, and more reliable than other conventional endoscopic resection techniques. When endoscopic ultrasonography (EUS) is performed prior to UEMR, EUS can allow prediction of the safety and reliability of UEMR because lesion characteristics such as depth, blood vessels, and echodensity are evaluated [4]. We illustrate a case in which colon hemangiomas compatible with BRBNS were resected endoscopically using UEMR.

▶ Fig. 1 Blue lesion in the transverse colon of a 35-year-old man, examined using magnifying narrowband light colonoscopy. A 10-mm soft, blue, elevated lesion was shown. ▶ Fig. 2 Endoscopic ultrasonography (EUS) of the transverse colon lesion using a 20-MHz miniature probe, showing a 10-mm isoechoic/slightly hyperechoic round submucosal mass and the submucosal layer between the lesion and the muscularis. No dilated blood vessels were seen that would be of concern during resection. ▶ Video 1 Underwater endoscopic mucosal resection of colon hemangiomas compatible with the blue rubber bleb nevus syndrome, following endoscopic ultrasonography. ▶ Fig. 3 Sequential endoscopic pictures of the underwater endoscopic mucosal resection (UEMR) of the transverse colon lesion. The lesion became more subpedunculated after water immersion. a The tip of the snare was securely placed on normal mucosa beyond the lesion with a sufficient proximal margin. b The resected specimen. Blood oozed from the stump of the specimen.
A 35-year-old man was referred for evaluation of a blue polyp in the cecum and another in the transverse colon found on colonoscopy after a positive fecal immunochromatography test. The patient had undergone surgical resection of skin hemangiomas on his right leg at 1 and 4 years of age. Outpatient colonoscopy in our institution revealed elevated blue lesions, one in the cecum and one in the transverse colon. Magnifying narrowband light examination (EC-760ZP-W/M, Fujifilm, Tokyo, Japan) with a distal attachment (D-201-14304, Olympus, Tokyo, Japan) using blue-light imaging did not show the typical vascular pattern of a neoplasm but showed a normal surface pattern. The characteristics were classified as type 1 (Japan NBI Expert Team pattern. The characteristics were classified as type 1 (Japan NBI Expert Team classification), consistent with a gastrointestinal lesion of blue rubber bleb nevus syndrome. The margin of the hemangioma was negative.

The snare captured the entire lesion with its surrounding normal mucosa, while at the same time the water was aspirated. Once the snare was closed, the lesion was completely captured inside it. The secured lesion was cut with coagulation-mode diathermy (ESG-100, Olympus). The hemangioma was removed endoscopically. The mucosal defect was closed with a reusable clip (Sureclip Plus, Micro-Tech Co. Ltd., Nanjing, China) and endoclips (EZ-clip, Olympus). For both lesions, UEMR was completed without complications (Fig. 3b). Pathologic evaluation revealed submucosal hemangiomas compatible with BRBNS (Fig. 4).

This patient’s case demonstrates that colon hemangiomas compatible with BRBNS can be safely and completely resected using UEMR after the submucosal characteristics have been confirmed using EUS.

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Competing interests

H. Yamamoto has a consultant relationship with the Fujifilm Corporation and has received honoraria, grants, and royalties from the company. The other authors have no conflicts of interest to disclose.

The authors

Yuko Shibuya1, Masahiro Okada1, Munefumi Arita2, Yoshikazu Hayashi1, Hirotoshi Kawata3, Alan Kawarai Lefor2, Hironori Yamamoto1

1 Department of Medicine, Division of Gastroenterology, Jichi Medical University, Shimotsuke, Japan
2 Department of Surgery, Jichi Medical University, Shimotsuke, Japan
3 Department of Diagnostic Pathology, Jichi Medical University, Shimotsuke, Japan

Corresponding author

Yoshikazu Hayashi, MD, PhD
Department of Medicine, Division of Gastroenterology, Jichi Medical University, 3311-1 Yakushiji, Shimotsuke, Tochigi, Japan
hayashi@jichi.ac.jp

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