

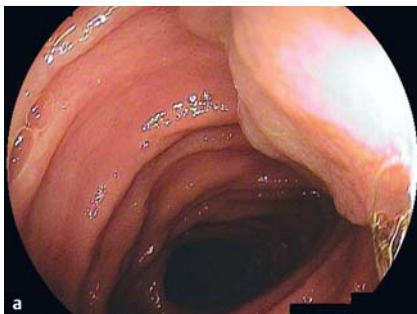
## Cyanoacrylate glue in the management of blue rubber bleb nevus syndrome



**Fig. 1** Case 1. Hemangiomas of the foot.



**Fig. 2** Case 1. Capsule endoscopy picture of a bluish, nipple-like rubbery vascular lesion of the jejunum, compatible with a blue rubber bleb nevus.



**Fig. 3** **a** Case 1. Hemangioma of the proximal jejunum. **b** Solidification of the glue inside the lumen. Inadvertent sticking of the needle inside the lesion or adherence of the glue to the needle was avoided by flushing at least 2 ml water for injection after each aliquot of Glubran 2 and Lipiodol. **c** Typical lesion of the transverse colon.

Case 1. A 16-year-old boy with blue rubber bleb nevus syndrome (BRBNS) was admitted for occult bleeding. He had a history of gastric and colonic hemangiomas treated 2 years earlier by argon plasma coagulation and alcohol injection respectively. Clinical examination showed a few hemangiomas on his back and feet (● **Fig. 1**).

Capsule endoscopy (Pillcam SB2; Given Imaging, Yoqneam, Israel) disclosed three blebs of the small bowel (● **Fig. 2**), and the patient underwent double-balloon enteroscopy (Fujinon, Saitama, Japan).

A 2-cm bleb was found at the jejunum, two smaller lesions at the ileum, and one at the transverse colon. N-butyl-2-cyanoacrylate and methacryloxysulfolane (Glubran 2), 1 ml, diluted with Lipiodol, 1 ml, was injected in aliquots of 1 ml per injection and up to 4 ml at each lesion (● **Fig. 3**). No complications occurred. At 6-month follow-up the patient had no anemia.

Case 2. An 11-year-old girl with BRBNS was addressed for hematochezia due to colonic blebs. Colonoscopy revealed a bleeding lesion at the cecum (● **Fig. 4**). After initial failure to stop the bleeding with a hemostatic grasper (Coagrasper, Olympus), Glubran 2 was injected successfully. Two more blebs of the right colon were treated similarly. After 2 years the patient remained asymptomatic.



**Fig. 4** Case 2. Bleeding hemangioma of the cecum near the ileocecal valve.

BRBNS is a rare condition characterized by multiorgan cavernous hemangiomas. Gastrointestinal bleeding is the major problem, and several endoscopic therapeutic approaches have been proposed: Nd:YAG laser, bipolar or argon plasma coagulation, band ligation, snare resection, and sclerotherapy [1–4]. Our patients were treated successfully by Glubran 2 injection, commonly used in the management of gastric varices. Endoscopic obliteration of cavernous hemangiomas with

n-butyl-2-cyanoacrylate (Histoacryl) has been previously described, in the rectum [5]. However, these appear to be the first cases of cyanoacrylate glue injection to control bleeding in the small bowel and colon in the setting of BRBNS.

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## References

- 1 *Shahed M, Hagenmüller F, Rösch T et al.* A 19-year-old female with blue rubber bleb nevus syndrome. Endoscopic laser photocoagulation and surgical resection of gastrointestinal angiomata. *Endoscopy* 1990; 22: 54–56
- 2 *Maunoury V, Turck D, Brunetaud JM et al.* Blue rubber bleb nevus syndrome. 3 cases treated with a Nd:YAG laser and bipolar electrocoagulation [in French with English abstract]. *Gastroenterol Clin Biol* 1990; 14: 593–595
- 3 *Bak YT, Oh CH, Kim JH.* Blue rubber bleb nevus syndrome: endoscopic removal of the gastrointestinal hemangiomas. *Gastrointest Endosc* 1997; 45: 90–92
- 4 *Arguedas MR, Wilcox CM.* At the focal point. Blue rubber bleb nevus syndrome. *Gastrointest Endosc* 1999; 50: 544
- 5 *Zurakowski J, Swiercz P, Wróblewski T et al.* Diffuse cavernous hemangioma of rectosigmoid colon treated with n-butyl-2-cyanoacrylate injections. *Endoscopy* 2008; 40: E120–121

## Bibliography

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