Figure 1 Endoscopic views of a giant exposed blood vessel in a gastric ulcer treated by endoscopic sclerotherapy with N-butyl-2-cyanoacrylate. The patient's bleeding was seen to be coming from a giant exposed blood vessel (a). Ethanol was injected into the navel-like region in the center of the ulcer (b), but pulsatile bleeding began from the injection point after the needle was removed (c). We decided to use N-butyl-2-cyanoacrylate for sclerotherapy: polymer was observed to form on the surface of the blood vessel and the pulsatile bleeding finally stopped 5 minutes after the injection (d). Follow-up endoscopy indicated that regenerative mucosa was growing around the ulcer and that the ulcer was gradually diminishing in size (e, f).

An 80-year-old man was admitted with hematemesis. Endoscopic examination revealed a deep giant gastric ulcer, and bleeding from the exposed blood vessel was detected in the lesser curvature of the angles of the stomach (Figure 1a). We thought that only the navel-like region in the center of the ulcer was an exposed blood vessel, and ethanol was injected into the edge of this region (Figure 1b). However, after the needle was removed, pulsatile bleeding began from the injection point (Figure 1c), revealing that the wider area around the navel-like region was also part of the giant exposed blood vessel, which measured 10 mm (using biopsy forceps).

We decided to use N-butyl-2-cyanoacrylate. Immediately after injecting a small amount of 50% glucose, 0.5 mL of stock solution of N-butyl-2-cyanoacrylate (Histocryl; Aesculap AG & Co., Tuttlingen, Germany) was injected into the center of the exposed blood vessel, followed by further injection of a small amount of 50% glucose. The formation of polymer was observed on the surface of the blood vessel and the pulsatile bleeding finally

stopped 5 minutes after the injection of N-butyl-2-cyanoacrylate (Figure 1d). Follow-up endoscopy indicated that regenerative mucosa was growing around the ulcer and that the ulcer was gradually diminishing in size (Figure 1e, f).

If the blood vessel had been a real varix, an embolism produced by the moving polymer of N-butyl-2-cyanoacrylate could have arisen after the sclerotherapy [1,2], so we used the stock solution of N-butyl-2-cyanoacrylate without diluting it in lipiodol. The injected N-butyl-2-cyanoacrylate did not appear to move from the surface of the exposed blood vessel. It is therefore sometimes useful to use the stock solution of N-butyl-2-cyanoacrylate for hemostasis of bleeding from a giant exposed blood vessel.

Endoscopy_UCTN_Code_TTT_1AO_2AD

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