



**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 1 a). 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 1 b). However, after the needle was removed, pulsatile bleeding began from the injection point (Figure 1 c), 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 (Histoacryl; 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 1 d). Follow-up endoscopy indicated that regenerative mucosa was growing around the ulcer and that the ulcer was gradually diminishing in size (Figure 1 e, 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.

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