Embolic complications associated with endoscopic injection of cyanoacrylate for bleeding duodenal ulcer

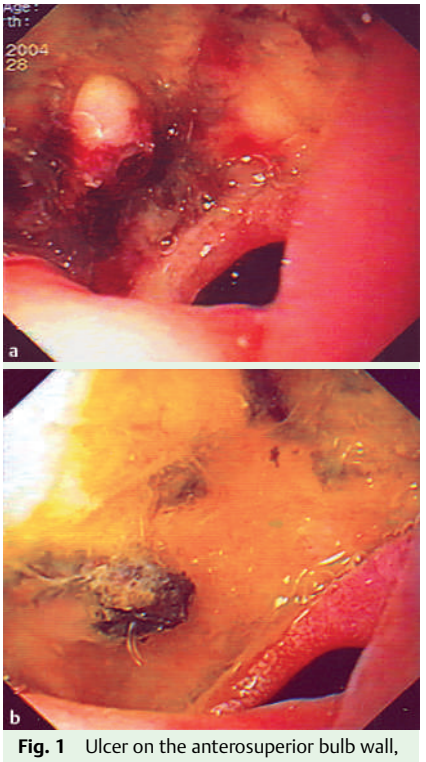

Fig. 1 Ulcer on the anterosuperior bulb wall, on 24-hour second-look endoscopy: **a** with visible vessel; **b** after second NB2C treatment.

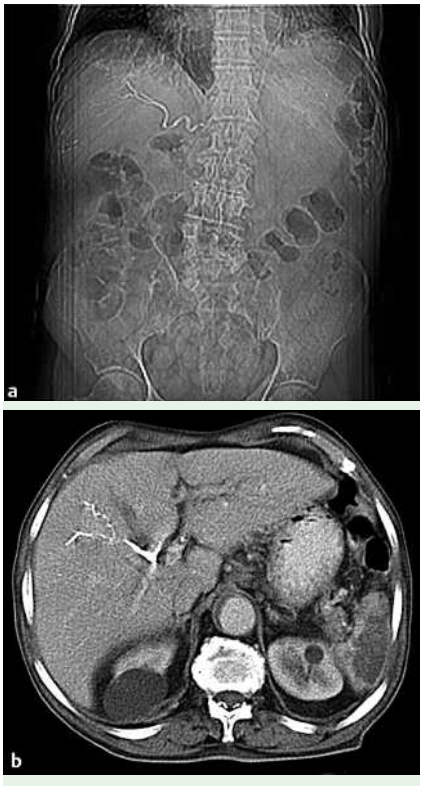

Fig. 2 Abdominal CT scan showing radiopaque material in **a** the common hepatic artery and **b** its right branch and some splenic branches. Multiple areas of splenic infarctions are visible in **b**.

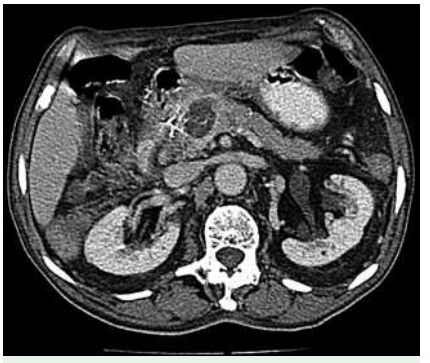

Fig. 3 Abdominal CT scan showing a heterogeneous area in the pancreatic head.

An 87-year-old man with severe cardiac disease, on treatment with an antiplatelet agent, was admitted to our department with acute melena, in a hemodynamically unstable state, and with a hemoglobin level of 6 mg/dL. Emergency endoscopy revealed an extensive ulcer in the anterosuperior bulb wall with pulsatile bleeding. This was initially injected with epinephrine and fibrin glue (as it was a deep ulcerated lesion). When this failed to stop the bleeding, we used a 1 : 0.6 mixture of *N*-butyl-2-cyanoacrylate (NB2C; Histoacryl) and lipiodol, which did stop it. At second-look endoscopy, a large pulsatile vessel was still present (**Fig. 1 a**), which was permanently occluded after a second NB2C application (**Fig. 1 b**). Five days later, the patient developed febrile peaks (40 °C) without complaints but with leukocytosis and a five-fold increase in levels of aminotransferases, amylase, and lipase. A thoracoabdominal computed tomography (CT) scan showed linear opacification of the common hepatic artery (**Fig. 2 a**), its right branch, and some splenic branches (**Fig. 2 b**), with a heterogeneous area in the spleen (**Fig. 2 b**) and in the pancreatic head (**Fig. 3**) highly suggestive of infarction lesions. The patient started treatment with an intravenous broad-spectrum antibiotic, along with nutritional support measures, and the liver test parameters improved considerably. Blood cultures failed to isolate any bacterial strain. The patient was discharged on day 15. Six-month imaging follow-up showed remarkable improvement.

Bleeding peptic ulcer is still the main cause of upper gastrointestinal hemorrhage [1]. Several endoscopic hemostatic methods of similar efficacy are currently available [1]. The use of NB2C, a successful and well-established substance used in variceal hemorrhage, is still controversial in the context of bleeding peptic ulcer [2,3]. Encouraging results have shown it to have good hemostatic efficacy when conventional endoscopic techniques have failed to control bleeding [2,3]. However, it has been associated with severe embolization with infarction [2,4,5]. The present case highlights a potential adverse effect of cyanoacrylate use.

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