

### Duodenal Variceal Bleeding Treated with a Combination of Endoscopic Ligation and Sclerotherapy

A 69-year-old woman with cirrhosis was admitted to hospital due to melena. Her previous medical history included a diagnosis of diabetes mellitus at the age of 65. She had also undergone subtotal gastrectomy for a gastric ulcer when she was 49, and received a blood transfusion at that time.

An emergency endoscopy on admission revealed esophagogastric varices and a duodenal varix 10 cm from the gastroduodenal anastomosis. The duodenal varix had a red thrombus attached, and was believed to be responsible for her melena (Figure 1). We carried out endoscopic variceal ligation (EVL) at two variceal sites in the duodenum, using a single-shot ligator – the Pneumo-Activate EVL device (Sumitomo-Bakelite, Shinagawaku, Tokyo, Japan). Despite receiving treatment with vasopressin for four days, the patient re-bled on the fifth day after the ligation treatment. A repeat endoscopy confirmed that the re-bleeding was from the ligated duodenal varix. We carried out two more ligations around this bleeding point, and injected a total of 15 ml 1% polidocanol. The following day, the patient's bleeding stopped. A follow-up endoscopy three months later demonstrated complete eradication of the duodenal varix (Figure 2).

EVL therapy for duodenal varices was initially reported by Tazawa et al. (1). Duodenal variceal bleeding was also controlled using EVL in their patient, but the patient died of progressive liver failure two days after the EVL. Rebleeding can be a problem with EVL therapy (2). The present patient re-bled five days after the first EVL procedure. We were able to stop the rebleeding by performing repeat EVL and adding sclerotherapy. D'Imperio et al. suggest that undiluted *N*-butyl-2-cyanoacrylate is effective in treating bleeding duodenal varices (3). Sans et al. presented a case in which thrombin and 5% ethanolamine injection therapy were effective (4). However, we believe that additional sclerotherapy may not be necessary unless rebleeding occurs after EVL. Saeed described the safety and the efficacy of the Saeed Six-Shooter device (Wilson-Cook Medical, Winston-Salem, North Carolina, USA) for esophageal and gastric varices (5). However, the use of this device to treat



**Figure 1:** The duodenal varix with red thrombus, before endoscopic ligation.



**Figure 2:** Duodenal ulcer scars three months after the second endoscopic ligation with sclerotherapy.

duodenal varices has not been reported. The present patient has not re-bled, and has remained well during 18 months of follow-up after the first variceal bleed. We consider that EVL, possibly with the addition of sclerotherapy, is effective in eradicating duodenal varices.

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