# Intramural hematoma: a rare complication of endoscopic injection therapy for bleeding peptic ulcers

Intramural hematomas of the gastrointestinal tract are a rare entity. We report two cases of intramural hematoma that developed following endoscopic therapy for bleeding ulcers.

**Case 1:** A 67-year-old man with diabetes was admitted to the intensive care unit for acute respiratory distress syndrome after a bout of pneumonia. He was being treated with prednisolone, ranitidine, and enoxaparin. Fourteen days later, his hemoglobin decreased from 9.6 g/dL to 6.7 g/dL and he was transfused with 3 units of packed red blood cells (with the hemoglobin rising to 10.2 g/dL). Endoscopy revealed oozing bleeding from an ulcer on the anterior wall of the duodenal bulb. Hemostasis was achieved by injecting 5 mL of diluted epinephrine (1 : 10 000) and 1 mL of absolute alcohol. However, after 3 days, the patient's hemoglobin decreased again (from 9.1 g/dL to 7.8 g/dL). A second-look endoscopy showed a conspicuous, violet-colored bulge in the duodenum, which seemed to be an intramural hematoma (**Video 1**).

This was confirmed by computed tomography (**Fig. 1**).

Conservative treatment was instituted, but 20 hours later, the patient developed acute abdomen. An emergency laparotomy revealed a large duodenal hematoma extending into the retroperitoneum, with necrosis of the posterior wall (**Fig. 2**).

The hematoma was drained and there were no surgical complications. However, the patient died 30 days later from respiratory failure.

**Case 2**: A 76-year-old man was admitted with angina and melena since 2 days. He had a history of myocardial infarction, which had been treated with clopidogrel and acetylsalicylic acid. His hemoglobin was 11.8 g/dL. Endoscopy revealed an

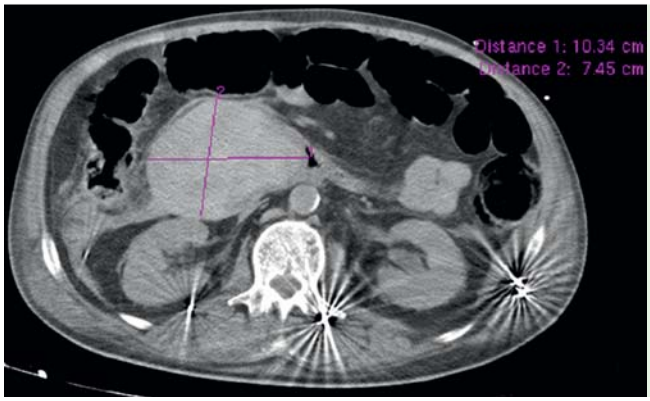


**Fig. 1** Computed tomography scan showing an inhomogeneous, hyperdense mass, 10 × 7.5 cm in size, in the duodenum wall.

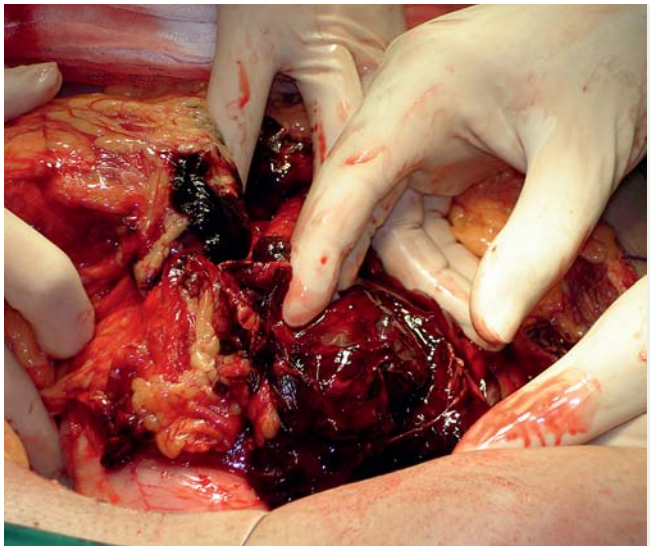

**Fig. 2** At surgery, a large duodenal hematoma was visualized, with necrosis of the posterior wall and extending into retroperitoneum.

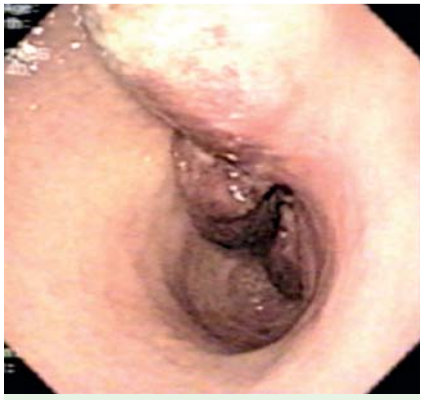

**Fig. 3** Second-look endoscopy – 24 hours after hemostasis – showing three violet-colored bulges in the posterior wall of the antrum, corresponding to intramural hematomas.

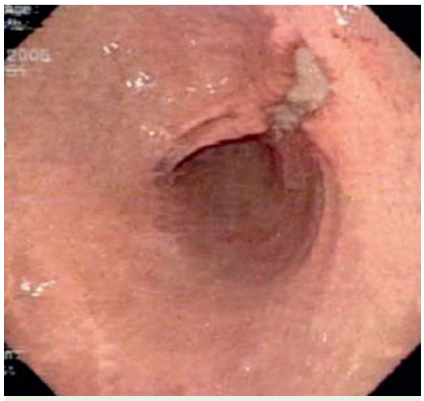

**Fig. 4** Endoscopy, 6 days later, showing a longitudinal ulcer and complete resolution of the hematomas.

**Video 1**

Endoscopy showing oozing bleeding from an ulcer on the anterior wall of the duodenal bulb; hemostasis was achieved with 5 mL of diluted epinephrine (1 : 10 000) along with 1 mL of absolute alcohol. Three days later, endoscopy showed a prominent violet-colored bulge, corresponding to an intramural hematoma.

oval ulcer on the posterior wall of the gastric antrum, with oozing bleeding. Hemostasis was achieved by injecting 4 mL of diluted epinephrine (1:10000) and 0.5 mL of absolute alcohol. A second-look endoscopy, 24 hours later, revealed three intramural hematomas (**Fig. 3**).

Another endoscopy 6 days later showed complete resolution of the hematomas (**Fig. 4**).

The cause of most intramural hematomas is blunt abdominal trauma; however, they have also been reported to occur as a complication of anticoagulant therapy [1] and blood dyscrasias [2], and after endoscopic biopsy [3] or therapy [4,5]. In this latter case, the use of large amounts of injected substances and antiplatelet/anticoagulation therapy may favour their development [4]. We believe that in our cases, the presence of comorbidities in the first patient and the excessive anti-aggregation therapy in the second patient were implicated in the development of the intramural hematomas.

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**Competing interests:** None

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