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Abrupt Duodenal Obstruction Caused by Traumatic Intramural Hematoma

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Summary. We experienced a case of intramural duodenal hematoma that was caused by a blunt trauma toward the upper abdomen in a 33-year-old man. Contrast-enhanced computed tomography (CT) was considerably effectual in diagnosis, visualizing a cystic lesion located at the upper second portion of the duodenum. Duodenography showed a so-called coiled spring appearance, and endoscopy revealed a tumor that was covered by normal duodenal mucosa and obstructed the whole duodenal lumen. We employed a conservative therapy in this case. The patient was discharged after 50 days hospitalization without any serious complications.

Key words— intramural duodenal hematoma, duodenal obstruction.

INTRODUCTION

Intramural duodenal hematoma, a relatively rare disease, is most often traumatic and sometimes misdiagnosed since the symptoms or signs are not characteristic of this condition. New imaging techniques such as computed tomography (CT) and/or magnetic resonance imaging (MRI) have greatly aided in its detection. Here we report a case of intramural duodenal hematoma in a male patient which was treated as acute gastritis in our emergency unit at his first visit. Abdominal ultrasound and CT were employed to diagnose it correctly. The patient recovered and was discharged without any complications of the disease. Finally, we reveal some findings characteristic of the disease and briefly discuss these.

CASE REPORT

A 33-year-old man injured himself in attempting to pull off the handle from the drive shaft of his car. The handle suddenly detached, rebounded, and directly hit his upper abdomen. The man felt nausea and vomited recurrently, and experienced continuing abdominalgia. The patient visited our emergency unit twice where he was treated for acute gastritis. Although he received a medical care, his symptoms continued without any relief. He was finally admitted to our hospital after five days of his injury.

Blood biochemical analysis showed no abnormalities other than a slight elevation of urine amylases (504 IU/L, normal range: ~ 480 IU/L). Plain abdominal X-ray at a standing position revealed no sign of free air or air-fluid level. Abdominal ultrasound exhibited a cystic lesion (5.4 x 3.7 cm) at the second to the third portion of the duodenum (Fig.1a). Abdominal contrast-enhanced CT showed a cystic lesion existing at the duodenum with a fluid-to-fluid level formation inside (Fig.1b). We assumed this cystic lesion was an intramural hematoma of the duodenum since the narrow, but true lumen of the duodenum was discernible neighboring this lesion at the right side (surrounded by arrows in Fig.1b).

Since this cystic lesion completely obstructed the duodenal lumen, the patient was curtailed of food intake and drinking, a stomach tube was inserted, and total parenteral nutrition was started. Duodenography by using Gastrographin® showed a so-called coiled spring appearance[1] at the upper second portion of the duodenum (Fig.2a). We performed an upper gastrointestinal endoscopy on the 16 days hospitalization. A large mass covered by normal mucosa completely obstructed the

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Abbreviations– CT, computed tomography.

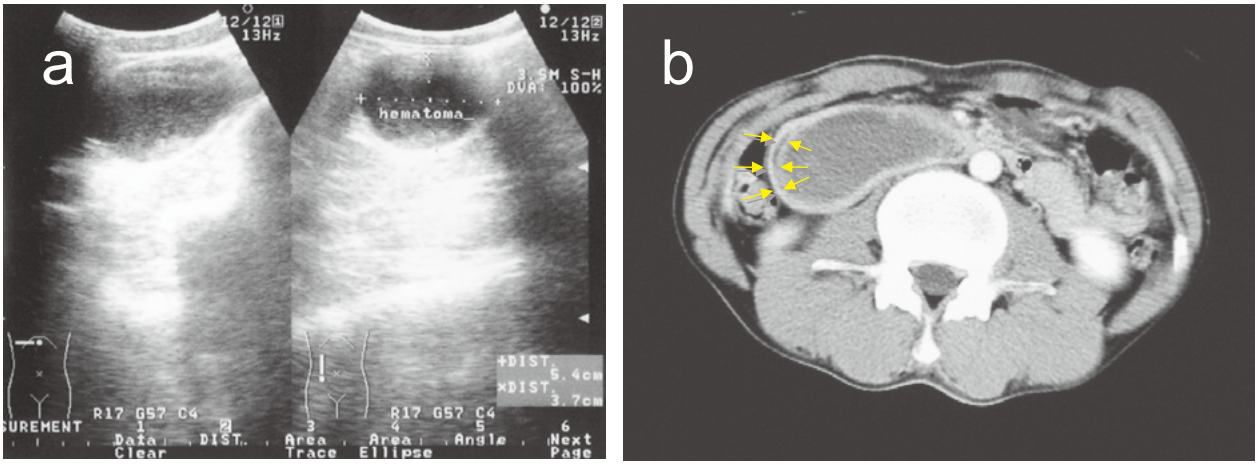

Fig. 1 a. Abdominal ultrasonic image (US) exhibits a cystic lesion (5.4 x 3.7 cm) at the second to a third portion of the duodenum. There are high echogenic substances at the cystic bottom probably corresponding to the coagulated blood. **b.** The contrast enhanced abdominal computed tomograpy (CT) shows the same cystic lesion located at the duodenum with a fluid-to-fluid level formation inside. The narrow portion that is surrounded by *yellow arrows* is the true duodenal lumen.

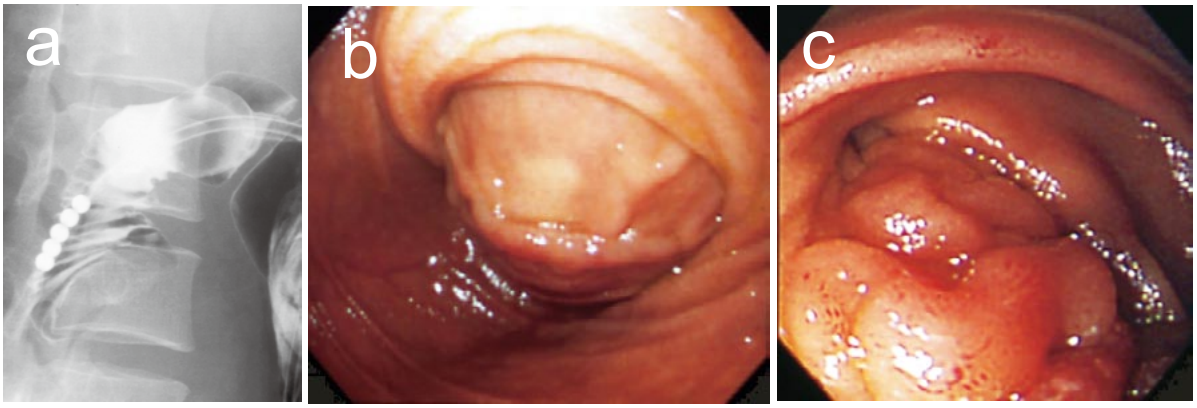

Fig. 2 a. Duodenography reveals a coiled spring appearance at the upper second portion of the duodenum. **b.** The second portion of the duodenum is completely obstructed by a large mass covered by normal duodenal mucosa. **c.** Spontaneous shrinkage of the intramural duodenal hematoma is seen. The duodenum is a narrow but open at the left upper corner.

second portion of the duodenum (Fig.2b).

During his hospitalization, mild elevations of total bilirubin (up to 3.3 mg/dl) and serum amylase (up to 226 IU/L, normal range ~118 IU/L) probably due to a temporary and a partial obstruction of the duodenal papilla, were noted. The patient was permitted to drink water on the 17th day. The stomach tube was drawn on the 38th day, and liquid nourishment was started on the 41st day. The patient was discharged from our hospital on the 50th day without any complications of the disease. The upper gastrointestinal endoscopy that was performed on the 42nd day revealed a narrow but open lumen at the second portion of the duodenum (Fig.2c).

DISCUSSION

McLauchlan[2] first reported an autopsy case of intramural duodenal hematoma in 1838. It is most common among intramural hematomas of the digestive tracts, and more than 90% of cases are traumatic. Until the mid 1960s, surgery was the treatment of choice. Conservative therapy then became the first choice in most cases since the Mahour's report[3] in 1971. According to Mahour's description, a conservative therapy should be employed when a case: 1) has no complication; 2) is associated with no massive and/or continuing hemorrhage; 3) improves within seven to 10 days by treatment. Echo-guided percutaneous drainage[4] or endoscopic drainage of the hematoma can be another therapeutic option when the requisites for these options are satisfied. We employed a conservative therapy in our case which led to a favorable outcome although the parenteral nutrition period seemed to be longer than that in other therapeutic options.

Most of the duodenum is located in the retroperitoneum that is not easy to move, and exists just in front of the vertebra. This position makes this organ more susceptible to dull trauma toward the abdomen. Moreover, this is a semi-closed digestive tract between the pylorus and Treitz's ligament. The abdominal aorta and the superior mesenteric artery vertically pass behind and in front of it, respectively. This anatomical position of the duodenum results in such vulnerability of this organ to blunt trauma. Abundant blood supply for this portion of the duodenum may also contribute to the hematoma formation. Whatever the case, any gastrointestinal endoscopist should be aware of the fact; namely this peculiar endoscopic picture of a stuffed tumor covered by normal mucosa in the duodenum indicate a great possibility of the intramural duodenal hematoma in patients suffering blunt abdominal trauma.

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