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CASUISTIC PAPER

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A rare and overlooked cause of massive gastrointestinal bleeding: Distal duodenal GIST

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ABSTRACT

Introduction. Gastrointestinal stromal tumors (GIST) are tumors of mesenchymal origin which originate from the walls of gastrointestinal system (GIS) organs.

Aim. In this case report we aim to discuss the clinical, labaratory and radiological presentation of distal duodenal GIST as a rare and overlooked cause of life-threatining GIS bleeding.

Description of the case. A 76-year-old male patient was presented to the emergency department with massive gastrointestinal bleeding. Computerized tomography revealed a mass soft tissue density of 4x4cm at the level of the 3-4th segment of the duodenum. At the endoscopy, there was a deep ulcer in the proximal part of the 3rd segment of the duodenum with a diameter of 2 cm with a bleeding vessel protruding into the lumen. After endoscopic treatments, biopsies were taken from the edges of the ulcer. Histopathological examination revealed a sheet-like infiltration composed of mildly pleomorphic cells with oval-spindle nuclei and abundant eosinophilic cytoplasm in the duodenal lamina propria, as the patient was diagnosed of GIST.

Conclusion. GIST and its clinical, labaratory and radiological presentation should be kept in mind in the approach to massive duodenal GIS bleeding.

Keywords. duodenum, gastrointestinal stromal tumor, GIST, massive gastrointestinal bleeding

Introduction

Gastrointestinal stromal tumors (GIST) are rarely encountered tumors of mesenchymal tissue, often localized in the gastrointestinal system (GIS). Stomach is the GIS segment where tumors are most frequently seen with a rate of 50-70%.[1] GISTs constitute up to 1% of all GIS tumors and are most frequently observed in the small intestine after the stomach.[2] These tumors, which are thought to originate from interstitial Cajal cells, were classified as leiomyoma, leiomyosarcoma and leiomyoblastoma, considering that they were smooth muscle cell-derived tumors due to their similar appearance in light microscopy.[3] However, with immunohistochemical methods, GISTs are now accepted as a completely different disease. Although the clinical symptoms often vary depending on the location of the GIS where the tu-

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mor is located, patients may apply to these areas with non-specific complaints.[4,5] Although GISTs may cause some non-specific symptoms, their detection is usually coincidental.

Aim

In this case report, we aimed to discuss a case in the light of the literature who was consulted from the emergency department with a pre-diagnosis of massive upper GIS bleeding and was diagnosed with duodenal GIST as a result of the examinations performed.

Description of the case

A 76-year-old male patient was presented to the emergency department with complaints of melena, hematemesis and dizziness. In physical examination, his arterial blood pressure was 100/60 mmHg, pulse: 110/min and there was melena in the rectal examination. Labarotory tests were as hemoglobin 6.6 g/dL, hemotocrite 19.5%, urea 65 mg/dL, and creatinine 0.9 mg/dL.

At the endoscopy, there was a deep ulcer in the proximal part of the 3rd segment of the duodenum with a diameter of 2 cm with a bleeding vessel protruding into the lumen on the medial wall. Sclerotherapy of adrenaline was applied around the ulcer, and a clip was placed on the root of the vessel (Figure 1).

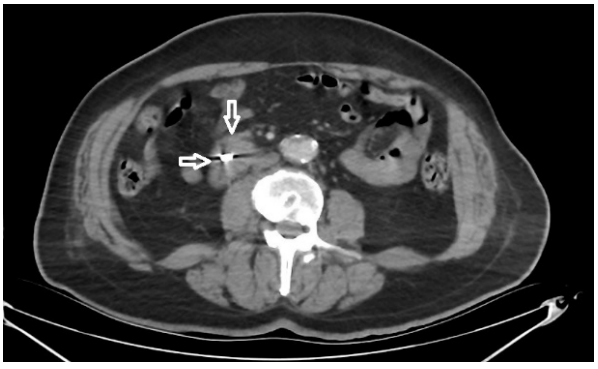

Fig. 1. Millimetric hyperdensity of hemostatic clip can be observed in the centre of the soft tissue density

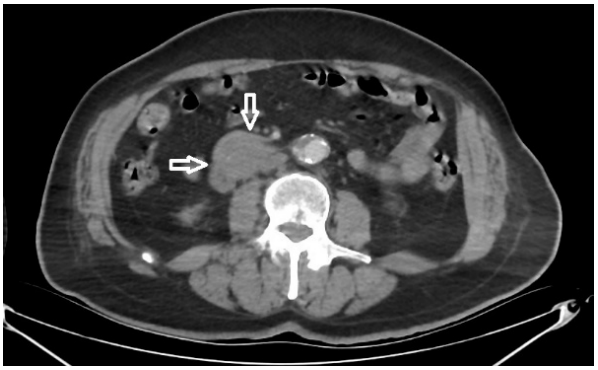

Fig. 2. CT of the abdomen with i.v. contrast, showing a mass soft tissue density of 4x4cm at the level of the 3-4th segment of the duodenum

The hemorrhage were controlled, but there were leakage from the ulcer floor in the upper part of the vessel. This area was coagulated with argon plasma and the hemorrhage stopped. After the endoscopy, computerized tomography revealed a mass soft tissue density of 4x4cm at the level of the 3-4th segment of the duodenum (Figure 2). In the control endoscopy, biopsies were taken from the edges of the ulcer (Figure 3).

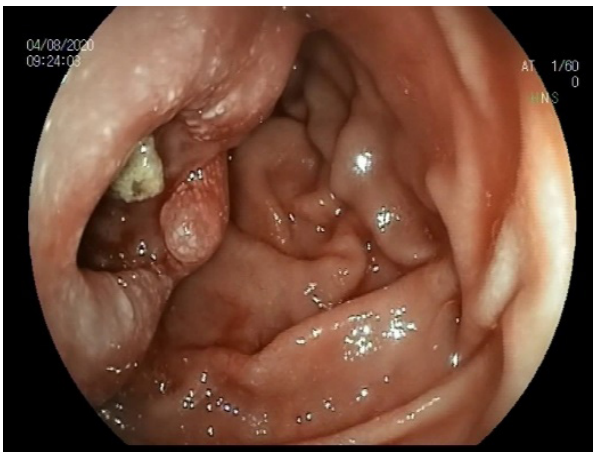

Fig. 3. Control endoscopy of deep ulcer in the proximal part of the 3rd segment of the duodenum which had 2 cm diameter with a bleeding vessel protruding into the lumen on the medial wall

On histopathological examination, a sheet-like infiltration composed of mildly pleomorphic cells with oval-spindle nuclei and abundant eosinophilic cytoplasm was observed in the duodenal lamina propria and the patient was diagnosed as gastrointestinal stromal tumor (GIST) of distal duodenum (Figure 4).

Immunohistochemical analysis showed positive staining for CD117, DOG1 and SMA. Pan-Cytokeratin, S100 and CD34 were negative. The proliferation index (ki-67) was as 3%. Computed tomography revealed a mass of 4x4 cm diameter in the distal duodenum. Surgery has been planned for the patient.

Discussion

Gastrointestinal system tumors are rare mesenchymal tumors that arise from the walls of the GIS organs and whose behavior is unpredictable. Although GIS bleeding is one of the findings that can be observed in these patients, cases of duodenal GIST presenting with life-threatining GIS bleeding are rare. With this case report; we wanted to mention that duodenal GIST may be present in patients presenting with massive GIS bleeding. However, we wanted to draw attention to the fact that pre-surgical endoscopic intervention may be effective in case of emergency bleeding.

Although ultrasonography is partially helpful in determining the location and size of the tumor in di-

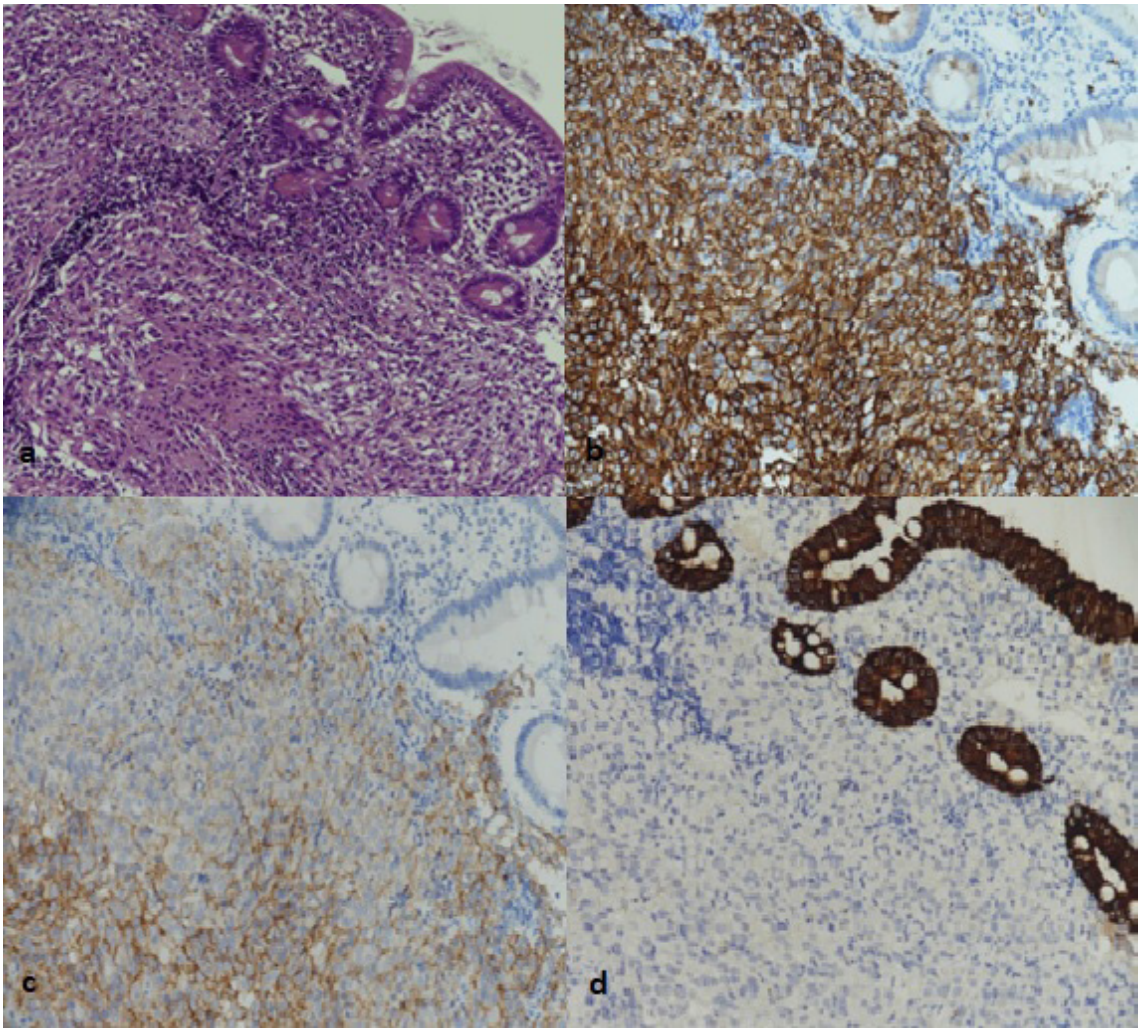

Fig. 4. Sheet-like infiltration composed of mildly pleomorphic cells with oval-spindle nuclei and abundant eosinophilic cytoplasm in the duodenal lamina propria. A. Duodenal lamina propria (H&Ex100), B. Diffuse membranous staining for CD117 (x200), C. Patchy membranous staining for DOG1 (x200), D. Negative pan-Cytokeratin staining (x200).

agnosis, today abdominal CT and magnetic resonance imaging (MRI) are considered the gold standard. It provides great benefit in diagnosis especially in patients with tumor diameter over 2 centimeters. However, these examinations have a special importance in ruling out the presence of metastasis. Another method for diagnosis is endoscopic examinations. Endosonographic examination can be performed if a lesion of different diameter and thought to be of submucosal origin is observed in the upper/lower GIS endoscopic evaluation. The diagnosis is confirmed by histopathological examination of the tissue sample.[6] Chemotherapy and radiotherapy do not have a significant place in treatment. Surgical removal of the mass is the most effective treatment method.[7] The most important point to be considered in surgery in terms of preventing recurrence is the removal of the tumor en-block at a distance of at least 2 cm from the surgical margin. Imatinib, a tyrosine kinase inhibitor, can be given lifelong at a dose of 400 mg/day in cases of unresectable, advanced stage, relapse or metastatic disease.[8] In tumor progression, the dose can be increased to 800 mg/day. If the patient cannot tolerate Imatinib, another tyrosine kinase inhibitor, Sunitinib, can be used. Surgical treatment was planned in the first place because no spread was detected in the abdominal CT of our patient. GISTs are tumors of mesenchymal origin which are rare and originate from the walls of GIS organs.[9-12] GIS bleeding is one of the findings in these patients, but distal duodenal GIST presenting with life-threatining GIS bleeding are much more rare.[13]

Conclusion

GIST and its clinical, labaratory and radiological presentation should be kept in mind in the approach to duodenal GIS bleeding. When there is no typical source of bleeding in typical site (cardia-Mallory Weiss, antrum, duodenal bulb-ulcer etc, the endoscopists should always try to go to the third part of duodenum, which is not assessed routinely on endoscopy.

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