Duodenal large mass causing severe anemia missed by capsule endoscopy but detected by single balloon enteroscopy

Kapsül endoskopi ile atlanan fakat balon enteroskopi ile saptanan anemiye neden olan büyük duodenal kitle

To the Editor,

Gastrointestinal bleeding is a common problem encountered by gastroenterologists during clinical practice. Proximal and distal bleeding sites are mostly identified by means of endoscopy and colonoscopy. The bleeding source can not be identified in 3-5% of cases despite the utilization of multiple studies (1). Most of these patients have small bowel lesions that may cause iron deficiency anemia or overt bleeding. Properties of the small bowel make the entire examination difficult.

Capsule endoscopy (CE) still has some weaknesses, such as inability to biopsy or to treat the detected lesions (2). These obstacles have been overcome with the introduction of balloon- assisted enteroscopy (BAE) devices, double- (DBE) and single-balloon (SBE) enteroscopes, into clinical practice (3-5).

A 24-year-old female patient with a two-year history of refractory iron deficiency anemia and unevaluated melena complaint was referred to our center for CE examination. Endoscopy and colonoscopies were reported to be normal and did not disclose any lesion. Her blood chemistries were normal except for mild anemia. Her physical examination was unremarkable.

Capsule endoscopy (CE) showed blood pool in the proximal jejunum but no mass (Figure 1). BAE by SBE (Olympus, Inc., Tokyo, Japan) showed a non-bleeding 2 cm mass with ulcer, suggestive of gastrointestinal stromal tumor at the distal duodenum (Figure 2). The mass was close to the papilla (Figure 3), which was resected segmentally while preserving the papilla. Histological examination revealed a neoplasm comprised of spindle cells. No necrosis, nuclear atypia or increased mitotic activity was observed (mitosis rate: 1/10 high power fi-

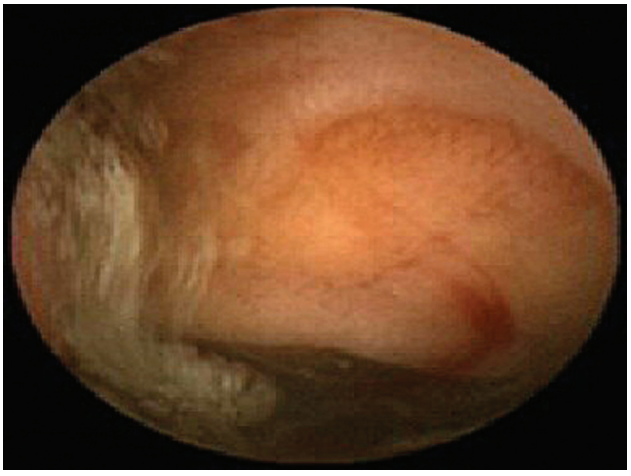

Figure 1. Capsule endoscopy image showing blood pooling in the proximal jejunal segments.

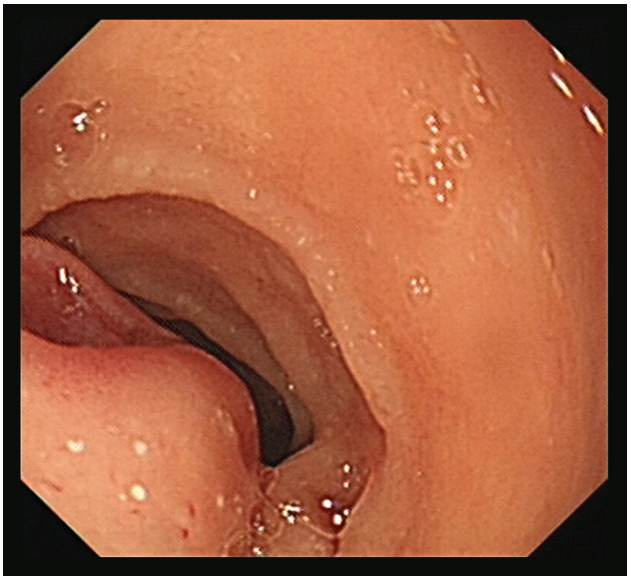

Figure 2. Single balloon enteroscopy found a non-bleeding 2 cm submucosal mass in the distal duodenum, covered by normal looking mucosa and 1 cm ulcer at the top that was suggestive of gastrointestinal stromal tumor.

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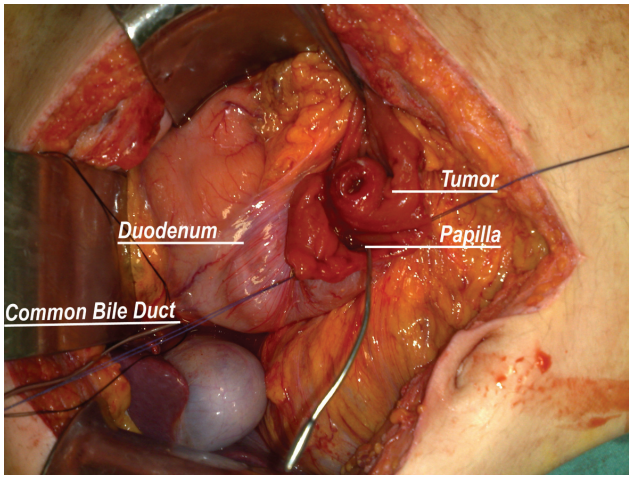

Figure 3. Submucosal mass was viewed intraoperatively before resection.

eld [HPF]). Immunohistochemical examination showed strongly positive staining for CD117, SMA and CD34 of the tumor cells, whereas the tumor was negative for S100. Proliferation index was 1%, which was calculated with Ki 67 stain. It was confirmed to be a low-grade gastrointestinal stromal tumor as diagnosed in SBE. The patient is in her postoperative second month and is doing well.

There is no doubt that CE has changed our management of small intestinal diseases. The capsule moves passively without insufflation or closer examination, and as a result, focal lesions are more likely to be missed. Mass lesions located in the proximal small bowel may be missed because of the capsule velocity and tumble. It is possible that transit through the first and second parts of the duodenum may be more rapid than elsewhere in the small bowel and the increase in speed may result in a missed lesion. In addition, collapsed bowel, large folds, sharp turns of the bowel by tumors, and blood pooling in the lumen may obscure visualization (6).

BAEs are helpful for diagnosing small bowel diseases. A direct comparison of CE and BAE showed that CE detects more abnormality than BAE (90% vs 70%) (7). However, these two techniques are complementary to each other and each can detect new lesions missed by the other modality (8).

It is alarming that CE overlooked such a relatively large mass (3 cm in diameter). Small bowel masses are a rare but serious source of obscure gastrointestinal bleeding (OGIB). Most of the masses have malignant potential, but CE is not the diagnostic gold standard for OGIB due to mass lesion. Duodenal and proximal jejunal lesions are most likely to be missed by CE and may be overlooked in upper endoscopy because of the intermittent nature of certain entities like ulcers and erosions. Thus, careful re-endoscopy should be the first step in the evaluation of OGIB. If the suspicion persists, evaluation of the proximal jejunum and duodenum by means of esophagogastroduodenoscopy would be helpful.

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