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Diagnosis of gastrointestinal stromal tumors with double-balloon enteroscopy

Gastrointestinal stromal tümörlerin tanısında çift balon enteroskopi

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Traditional imaging techniques are insufficient for diagnosis of small bowel diseases. Double-balloon endoscopy is a novel method for the diagnosis of this region. Here, we report three cases diagnosed with gastrointestinal stromal tumors by double-balloon enteroscopy, which were missed by the other imaging techniques including capsule endoscopy. In summary, double-balloon enteroscopy should be performed if there is high clinical suspicion for small bowel pathology even if the capsule endoscopy is negative.

Geleneksel görüntüleme teknikleri ince barsağın incelenmesinde yeterli olmamaktadır. Çift balon enteroskopi bu bölgenin incelenmesi için geliştirilen yeni bir tekniktir. Bu yazıda ince barsağın kapsül endoskopi de dahil, diğer görüntüleme yöntemleri ile atlanmış ve çift balon enteroskopi ile gastrointestinal stromal tümor tanısı konulmuş üç hasta bildirildi. Özet olarak, kapsül endoskopi sonucu negatif olsa bile, klinik şüphe varlığında ince barsak görüntülenmesi çift balon enteroskopi ile yapılmalıdır.

Anahtar kelimeler: Double-balloon enteroscopy

Key words: Çift balon enteroskopi

INTRODUCTION

Small bowel malignant tumors account for little more than 1% of all gastrointestinal (GI) malignancies. Annual incidence of these tumors was 0.96 per 100,000 from 1972-1982 (1). The most common type of small bowel malignancy is adenocarcinoma. Gastrointestinal stromal tumors (GISTs) are rare in this group. Annual incidence of GISTs is approximately 15 cases per million, and the majority of GISTs arise in the stomach, while 20% to 30% arise in the small intestine and less than 10% in the esophagus, colon and rectum (2). Diagnosis of GISTs is not easy, even with development of new imaging techniques such as capsule endoscopy (CE). Although studies have reported that CE was superior for diagnosis of obscure GI bleeding (3), some case studies have shown that CE can miss GISTs (4). Here, we report three cases diagnosed as GISTs by double-balloon enteroscopy (DBE), which were missed by the other imaging techniques, including CE.

CASE REPORT

Case 1

A-Y, a 51-year-old male, was admitted to our center complaining of fatigue and melena. Gastroscopy, colonoscopy, small bowel barium study and abdominal computerized tomography (CT) were normal. CE was also performed, and no pathologic findings were reported. We performed DBE and revealed a 3 cm in diameter protruding submucosal mass in the proximal jejunum (Figure 1A). After biopsies, bleeding started, but was successfully treated with thermal coagulation [Gold probe (Boston Scientific) electrohemostasis catheter]. Endoscopic mucosal biopsies were negative. Partial resection of the small bowel was performed (Figure 1B) and histological specimens revealed GIST.

Case 2

R-K, a 36-year-old male, was referred to our center for DBE. He had iron deficiency anemia, and no pathologic reason was found by gastroscopy, colonoscopy, small bowel enteroclysis, CT, and CE. DBE showed a 2.5 cm in diameter polypoid mass in the distal jejunum (Figure 2A). Bleeding occurring after biopsy was stopped by thermal coagulation. Mucosal biopsies were also negative, as in the pre-

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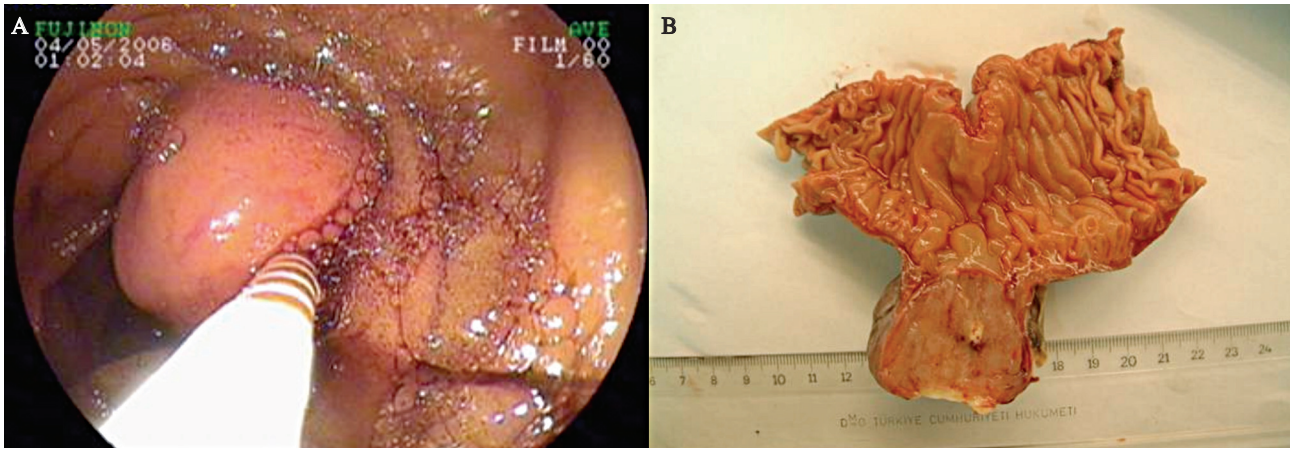

Figure 1. A-B: Protruding submucosal mass, 1.5 cm in diameter (endoscopic and surgical view).

vious case. He was operated (Figure 2B) and the histological specimen was confirmed as GIST.

Case 3

E-U, a 63-year-old female, was referred for further investigation of occult GI bleeding. Imaging studies including gastroscopy, colonoscopy, CE, CT, and small bowel barium study were negative, as in the previous cases. DBE was performed and a 15 mm ulcerated polypoid mass was found in the distal jejunum (Figure 3). Severe bleeding occurred after biopsy (negative as in the other cases) and thermal coagulation was performed.

DISCUSSION

Many imaging techniques are used for investigation of small bowel illness, but none of them is completely sufficient for diagnosis. CT is not sufficient for diagnosis of mucosal or small lesions of the small bowel. Small bowel barium study is the most commonly used technique for detection of small bowel lesions, but diagnostic accuracy is 30-40% (5). Although diagnostic accuracy of enteroclysis is higher than the barium study, it can sometimes be negative, just as in one of our cases. CE was developed and routinely used in clinical practice since the beginning of 2000. Studies were reported about its diagnostic superiority for small bowel pathology (6). While CE is a noninvasive and well-tolerated method, it is not possible to take a biopsy or perform therapeutic procedures. DBE is a novel method for examination of the entire small bowel (7), and it is possible to perform therapeutic interventions and to take biopsies for histological diagnosis. If deep multiple biopsies are not taken in the ulcerated area, these samples

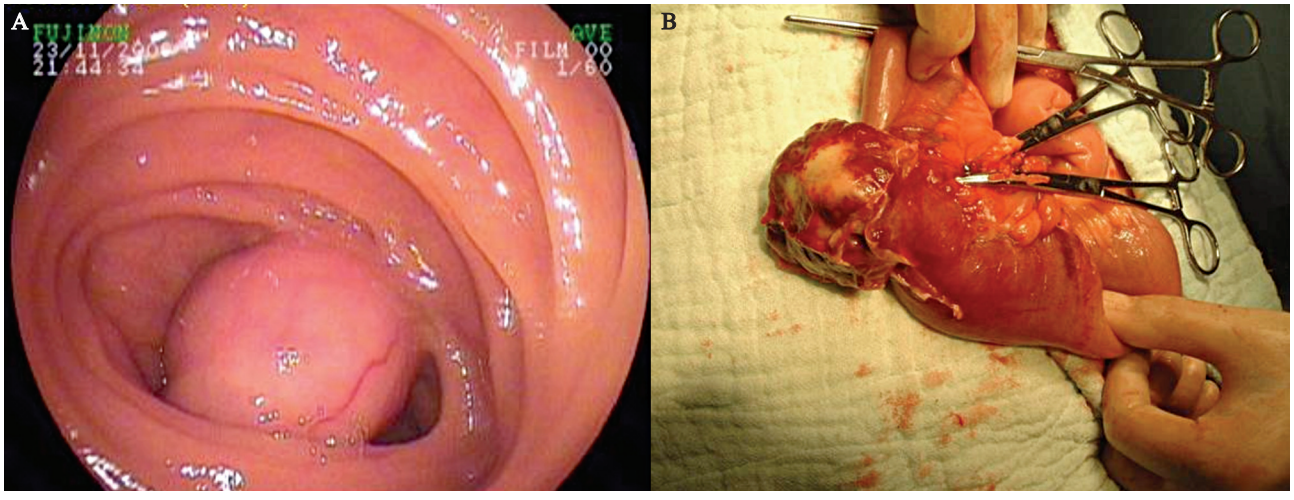

Figure 2. A-B: Polypoid mass in the distal jejunum (endoscopic and surgical view).

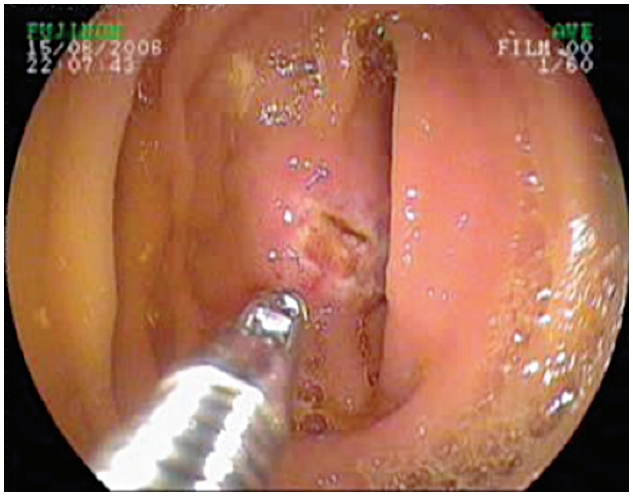

Figure 3. 15 mm ulcerated polypoid mass.

in submucosal stromal tumors will be negative. In any case, mucosal biopsies were taken in all our cases, but all were negative and bleeding occurred thereafter. Currently, it is accepted that endoscopic biopsy is unnecessary for diagnosis because surgical resection should be performed.

There have been few studies comparing CE and DBE in the diagnosis of small bowel pathology. Hadithi et al. (3) reported that CE was superior to DBE in the detection of small bowel abnormalities (80% vs. 60%). They concluded that CE should be the initial diagnostic imaging, which might be followed by therapeutic and interventional DBE. However, CE was performed in two of our three cases, and no pathologic lesion was detected. Chong et al. (4) reported four cases (2 GISTs, 1 lymphoma, and 1 adenocarcinoma) diagnosed as small bowel pathology by DBE but missed by CE. May et al. (8) and Matsumoto et al. (9) reported that DBE had a greater yield than CE. On the other hand, Li et al. (10) concluded that CE should be selected for the initial diagnosis in patients with suspected small bowel diseases, especially in patients with obscure GI bleeding, and that DBE could also serve as a good complementary approach after an initial diagnostic imaging using CE. However, polypoid masses can be missed by CE. If there is no contraindication for DBE (such as poor general condition, or significant respiratory or cardiovascular disease), the first choice in the diagnosis of GISTs should be DBE after gastroscopy, colonoscopy and small bowel enteroclysis.

In conclusion, DBE is superior for the detection of GISTs. If there is high clinical suspicion for small bowel pathology, DBE should be performed even if CE was negative.

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