32 Chronic Nonspecific Multiple Ulcer of the Small Intestine

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Chronic nonspecific multiple ulcer of the small intestine (CNSU) is an enteropathy characterized by persistent anemia and hypoproteinemia occurring in childhood or adolescence [1]. CNSU was advocated as an established disease entity in the 1960s. At one time, it was called "nonspecific ulcers in the small intestine," but this ragtag disease name was not suitable for an established disease entity.

32.1 Etiology

The etiology and pathogenesis of CNSU have not yet been clarified. Intermarriage has been reported in the family background of some patients, so a genetic factor may be involved.

32.2 Clinical Features

The lesions of CNSU are most common in the middle or lower ileum [2]; in some patients they appear in the jejunum or colon. Typical macroscopic findings are multiple, sharply marginated, circular, or oblique ulcers in the middle or lower ileum, except the terminal ileum [3] (Fig. 32.1). The ulcer is shallow, and the wall thickening of the small intestine is mild. Therefore, even though some strictures can be formed, endoscopic balloon dilation therapy is usually easier and safer than in Crohn's disease [4]. Recurrence after surgical resection often occurs.

CNSU occurs more often in women than in men [5]. Persistent anemia and hypoproteinemia result in easy fatigability, edema, growth impairment, or amenorrhea. Abdominal obstructive symptoms can occur because of stricture, but diarrhea or bloody stool is rare.

In spite of severe anemia or hypoproteinemia, the level of C-reactive protein (CRP) is normal or only mildly elevated. Fecal occult blood test is positive.

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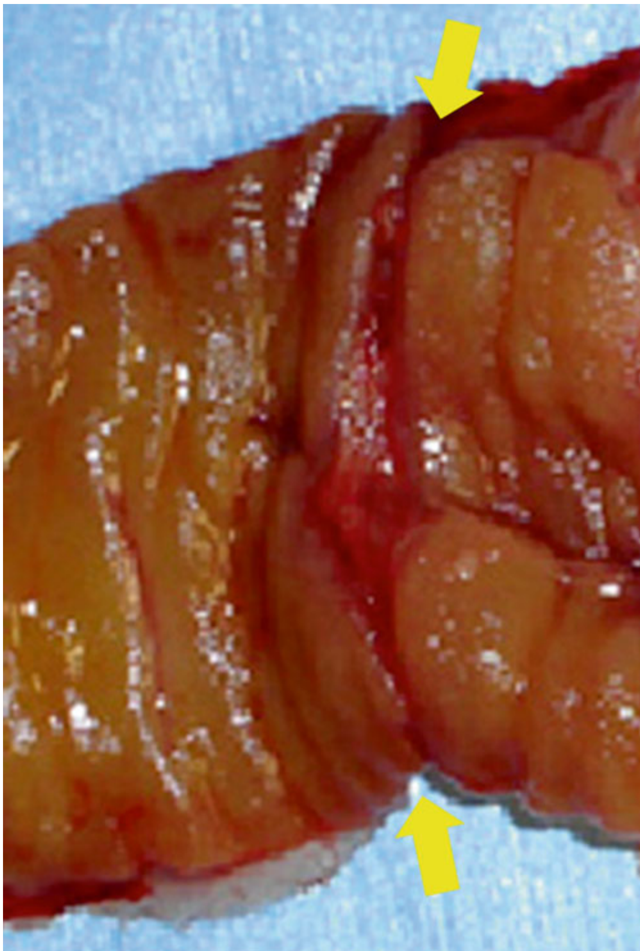

Fig. 32.1 This surgical specimen from a patient with chronic nonspecific multiple ulcer of the small intestine (CNSU) shows a sharply marginated, circular ulcer in the ileum. The *yellow arrows* point to sharply marginated circular ulcer

32.3 Histology

The ulcers are localized in the mucosal or submucosal layer (Fig. 32.2). Typical microscopic findings are mild inflammatory cell infiltrate with plasma cells, lymphocytes, and eosinophils.

32.4 Differential Diagnosis

The differential diagnosis of CNSU includes Crohn's disease, intestinal tuberculosis, radiation enteropathy, and nonsteroidal anti-inflammatory drug (NSAID) enteropathy. The typical findings for ulcer description, location, history, response to treatment, and supportive laboratory data are useful in making the diagnosis.

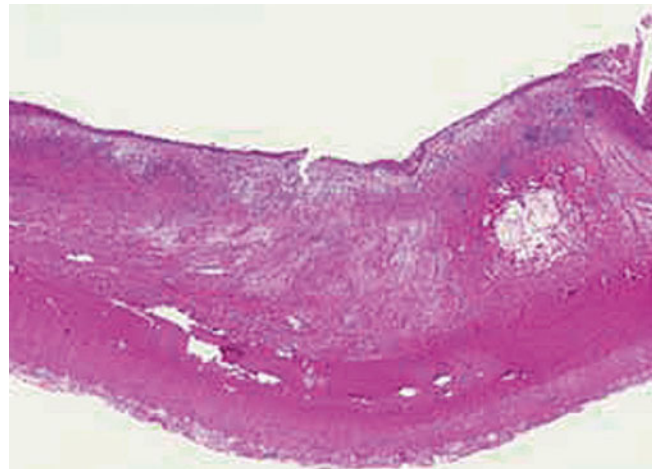

Fig. 32.2 Microscopic histological view of the surgical specimen shows that the ulcers are localized in the submucosal layer

32.5 Treatment

Anti-inflammatory treatments including steroids, 5-aminosalicylate, immunomodulators, and anti-TNFα agents have not been effective. At present, the only effective method to induce and maintain remission of CNSU is nutrition therapy with total parenteral nutrition or elemental diet.

32.6 Endoscopy

Circular or oblique, sharply marginated, shallow ulcers are observed mainly in the ileum [6] (Figs. 32.3 and 32.4). Scars, strictures, and pseudodiverticulosis also can be observed (Figs. 32.5 and 32.6). Double-balloon or single-balloon enteroscopy is useful for observation.

32.6.1 The Role of Capsule Endoscopy

Capsule endoscopy is useful for differential diagnosis or confirming treatment efficacy in some cases (Figs. 32.7 and 32.8). Confirming functional patency of the small intestine by using patency capsule is usually required prior to capsule endoscopy (Figs. 32.9 and 32.10) [7].

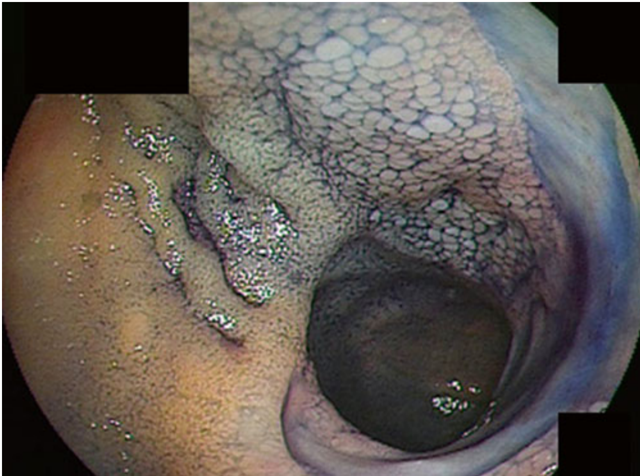

Fig. 32.3 Double-balloon enteroscopy (with chromoendoscopy using indigo carmine) shows a typical endoscopic finding in CNSU: an oblique, sharply marginated, shallow ulcer

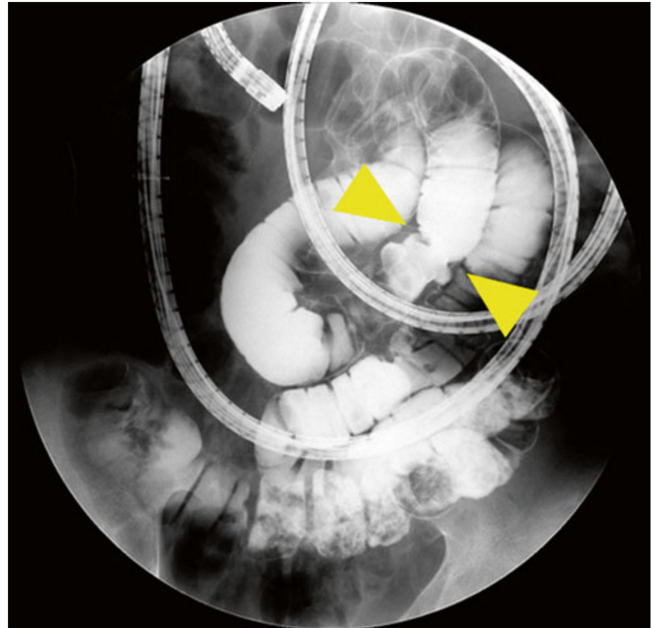

Fig. 32.5 Selective small bowel series with double-balloon enteroscopy shows mild stricture and pseudodiverticulosis. The *yellow arrows* point to mild stricture. And pseudodiverticulosis are shown at its oral side

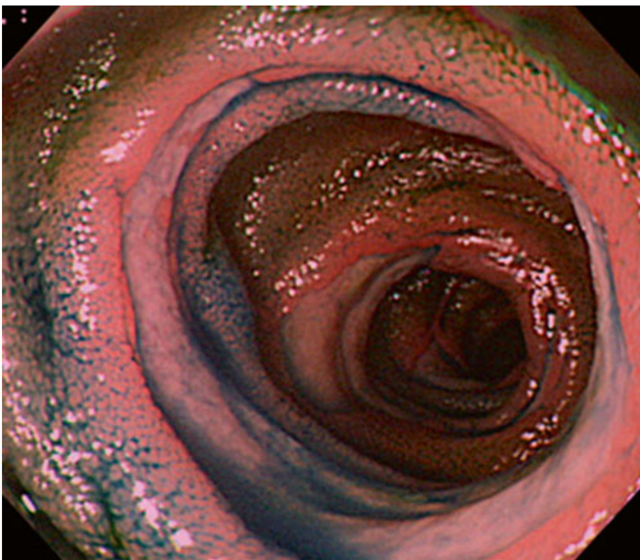

Fig. 32.4 Single-balloon enteroscopy (with chromoendoscopy using indigo carmine) shows a typical endoscopic finding in CNSU: a circular, sharply marginated, shallow ulcer

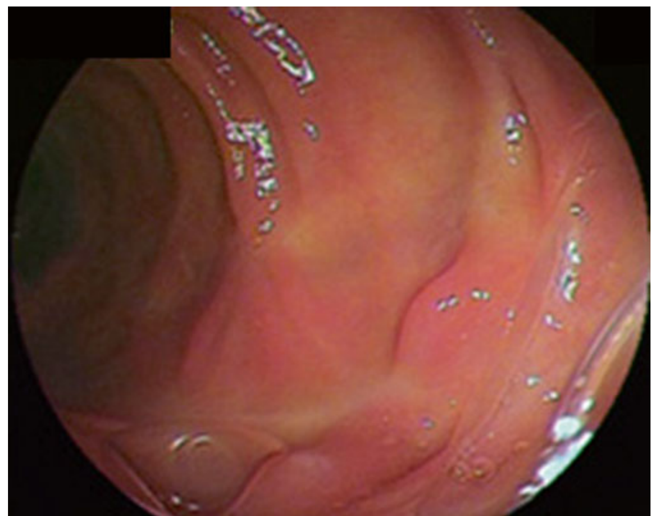

Fig. 32.6 Double-balloon enteroscopy shows mucosal healing with scars, achieved by treatment using total parenteral nutrition

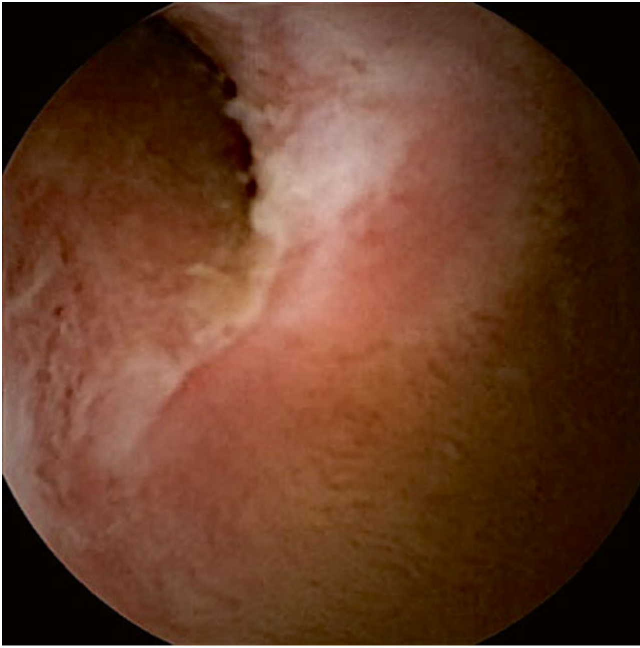

Fig. 32.7 Capsule endoscopy revealed part of an active, circular ileal ulcer in a patient with CNSU

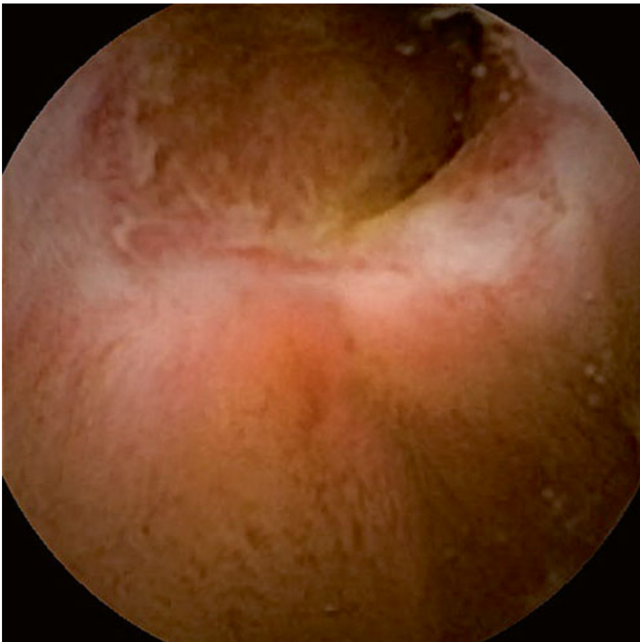

Fig. 32.8 Capsule endoscopy also revealed part of an active, circular ileal ulcer or scar in a patient with CNSU

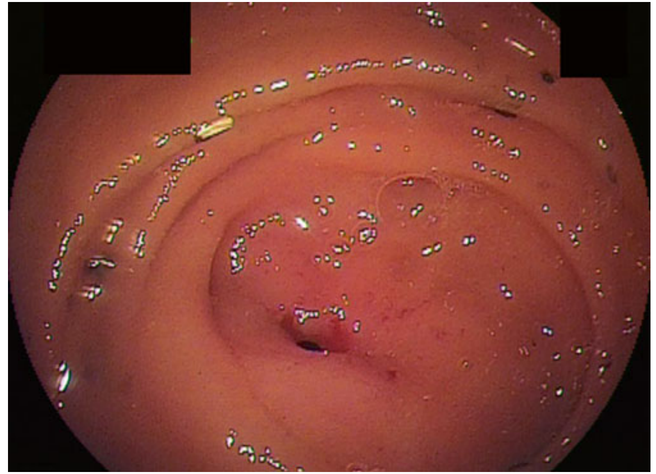

Fig. 32.9 Double-balloon enteroscopy shows severe stricture in the middle ileum

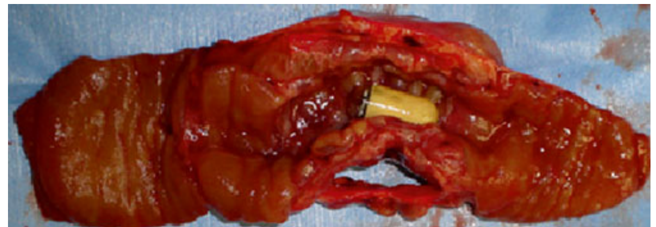

Fig. 32.10 Macroscopic findings of ileum resected because of severe stricture with capsule retention

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