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Neutropenic enterocolitis secondary to propylthiouracil-induced agranulocytosis

To the Editor,

First described by Cooke in 1930 (1), neutropenic enterocolitis (NE), also termed necrotizing enterocolitis or neutropenic typhlitis, is a necrotizing inflammatory disease of the ileocecal region. Its pathogenesis is not entirely known. It is a complication of severe neutropenia and often occurs after high-dose chemotherapy. An association between NE and the use of certain antineoplastic drugs has been described (2,3). Propylthiouracil (PTU) is used widely in the treatment of hyperthyroid disorders. Its most notable side effect is decrease in the neutrophilic granulocyte count. Development of agranulocytosis is related to the dose of the anti-thyroid drug administered (4).

We present a case of a 56-year-old man with NE who was admitted to our emergency department because of abdominal pain that began 2 days earlier. His medical history included hyperthyroidism, for which he was currently taking PTU at 800 mg per day in 8-hour intervals. An abdominal examination revealed noticeable tenderness and guarding in the right lower quadrant with diffuse tenderness in other quadrants. A complete blood count showed a low leukocyte count (1000/mm^3) and a low neutrophil count (100/mm^3). Aspartate transaminase and alanine transaminase levels were 126 U/L and 101 U/L, respectively, while the remainder of the biochemistry test results were normal. Abdominal ultrasonography and computed tomography (CT) showed thickening of the ileal and cecal walls and pericecal fluid and inflammation in the pericecal soft tissue (Figure 1). The patient underwent immediate surgery because of acute abdomen. The cecum and the proximal part of the ascending colon were gangrenous. The mesenteric vessels were patent with good pulsations. Right hemicolectomy and ileocolostomy were performed. Histopathology revealed a nonspecific infarction necrosis of the bowel wall with multiple ulcerations in the cecum, but no evidence of major vessel thrombosis. Consistent with NE, a pathology specimen showed ischemic mucosal injuries, including submucosal bleeding and vascular congestion (Figure 2). The patient died because of multiple organ failure secondary to sepsis.

We suggest that use of PTU was the cause of NE in this case. The patient was taking PTU when his abdominal pain began, and his medical history did not include malignancy, cytotoxic chemotherapy, or other potential causes of NE. Therefore, this case may be the first case of PTU-induced NE reported in the literature. Management of NE is controversial because a large number of cases of NEs have not been examined. The mortality rate of untreated NE is 50% to 100%; however, this is reduced to 23% to 31% via appropriate medical or surgical management (5). NE remains a major clinical challenge in terms of both diagnosis and management. Clinicians should be acutely aware of the association of NE with PTU-induced agranulocytosis.

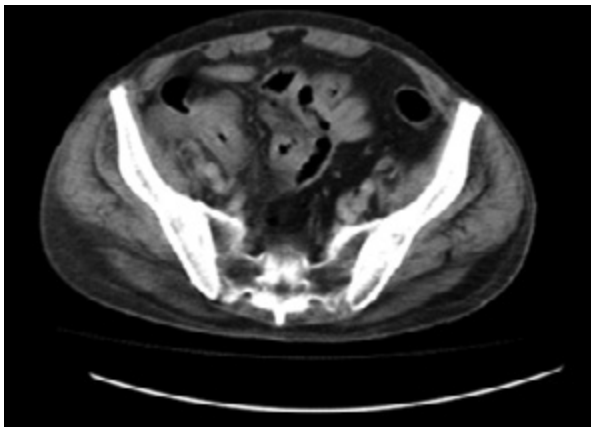

Figure 1. A computed tomography scan shows thickening of the ileal and cecal walls and pericecal fluid and inflammation in the pericecal soft tissue.

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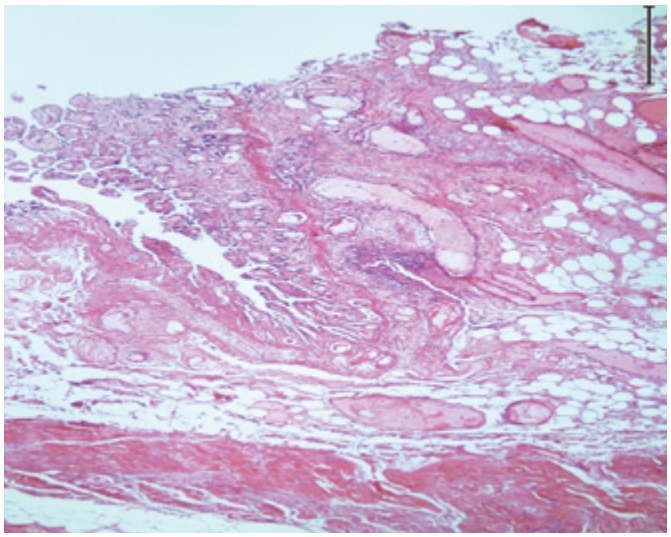

Figure 2. A pathology specimen shows ischemic mucosal injuries, including submucosal bleeding and vascular congestion.

Ethics Committee Approval: N/A.

Informed Consent: Written informed consent was obtained from patient who participated in this case.

Peer-review: Externally peer-reviewed.

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REFERENCES

1. Williams N, Scott AD. Neutropenic colitis: A continuing surgical challenge. Br J Surg 1997; 84: 1200-5. [CrossRef]
2. Hayes D Jr, Leonardo JM. Neutropenic enterocolitis in a woman treated with 5-fluorouracil and leucovorin for colon carcinoma. N C Med J 2002; 63: 132-4.
3. Ferrazi E, Toso S, Zanotti M, Giuliano G. Typhlitis (neutropenic enterocolitis) after a single dose of vinorelbine. Cancer Chemother Pharmacol 2001; 47: 277-9. [CrossRef]
4. Dai WX, Zhang JD, Zhan SW, et al. Retrospective analysis of 18 cases of antithyroid drug (ATD)-induced agranulocytosis. Endocr J 2002; 49: 29-33. [CrossRef]
5. Gomez L, Martino R, Rolston KV. Neutropenic enterocolitis: Spectrum of the disease and comparison of definite and possible cases. Clin Infect Dis 1998; 27: 695-9. [CrossRef]