

## CLINICAL IMAGE

# The comb sign in a patient with Crohn's disease

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**Keywords:** diagnostic reasoning, gastrointestinal medicine, internal medicine

## 1 | THE COMB SIGN IN A PATIENT WITH CROHN'S DISEASE

A 19-year-old boy experienced malaise for several months and was admitted to a hospital. He underwent a blood test and computed tomography (CT) scan of his abdomen without contrast media. The C-reactive protein (CRP) level was slightly high, and the only abnormality found on the CT scan was small multiple lymphadenopathies on the small mesentery. He was referred to our hospital for further evaluation. He reported no fever, abdominal pain, back pain, diarrhea, appetite or weight loss, tarry or bloody stool, or night sweats. On admission, body temperature was 37.1°C, blood pressure was 118/78 mmHg, pulse rate was 78 beats/min, and respiratory rate was 16 breaths/min. His abdomen was soft and nontender, and the remainder of the examination was normal. The initial white blood cell count was 8,200/ $\mu$ L, and the serum CRP level was 2.14 mg/dL. The CT scan performed at the previous hospital showed multiple linear opacities on the mesenteric side of the affected small bowel (Figure 1), which was an indication of vascular dilatation known as the comb sign, in addition to small lymphadenopathies on the small mesentery. Although no gastrointestinal symptoms were reported, the comb sign led to the suspicion of inflammatory bowel disease. Colonoscopy was performed, and histopathological examination revealed findings consistent with Crohn's disease. Mesalazine and budesonide were prescribed.

Crohn's disease is a chronic idiopathic inflammatory bowel disease characterized by skip lesions and transmural inflammation that can affect the entire gastrointestinal tract. Patients often present with gastrointestinal symptoms such as abdominal pain, diarrhea, and bloody stool. However, some only have nonspecific symptoms such as low-grade fever, fatigue, or weight loss.<sup>1</sup> Endoscopic and histopathological examinations are important for diagnosis; however, a CT scan, which is not sensitive for detecting the mucosal abnormalities of mild inflammatory bowel disease (IBD), also aids in the diagnosis.<sup>2</sup>

Computed tomography findings suggestive of Crohn's disease include bowel wall thickening, increased bowel wall enhancement after the administration of intravenous contrast media,<sup>3</sup> and parallel engorged mesenteric vessels known as the comb sign is not specific for Crohn's disease. This sign indicates an active disease with mesenteric hypervascularity that resembles the teeth of a comb and may be seen in vasculitis, mesenteric thromboembolism, and bowel strangulation.<sup>4</sup> It is difficult to detect mucosal abnormalities with a non-contrast CT scan; however, the comb sign is not difficult to detect in CT scans without contrast media, and it is very useful though not specific for Crohn's disease. If you know the sign, it may be a clue to diagnose IBD.

**CONFLICT OF INTEREST**

The authors have stated explicitly that there are no conflicts of interest in connection with this article.

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**FIGURE 1** A coronal view of the abdominal CT scan without contrast media shows an increase in mesenteric vascularity resembling the teeth of a comb (white arrows)

## INFORMED CONSENT

We have obtained the consent of the patient for publication.

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**How to cite this article:** Ueda Y, Yanagi H. The comb sign in a patient with Crohn's disease. *J Gen Fam Med.* 2022;23:120–121. <https://doi.org/10.1002/jgf2.499>