

The Reversed Question Mark Sign and the Dragon Sign of Ulcerative Colitis

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ABSTRACT

In gastroenterology, a sign is usually a marker or indicator of the presence of a particular disease and many signs are related to findings on clinical examination. In relation to ulcerative colitis (UC), only a few signs have been described that may assist with the interpretation of imaging studies. The well-known sign of UC is tubular appearance. We highlight other radiological findings in UC that we have called “the reversed question mark sign” and “the dragon sign”.

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Key words: Ulcerative colitis; Computed tomography

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TO THE EDITOR

We report impressive pictures from two patients with ulcerative colitis (UC). A 36-year-old man with 1-year history of UC presented with hematochezia and lower abdominal pain. Physical examination showed tenderness in the left lower quadrant without rebound. Computed tomography (CT) scan revealed circumferential and symmetric wall thickening of the sigmoid colon and the rectum (Figure

1). Together with the target appearance of the rectum, this CT feature resembles a reversed question mark. Hyperemic pericolic stranding, increased presacral space and enlarged lymph nodes are also presented. Sigmoidoscopy confirmed the exacerbation of UC. The patient improved with the administration of mesalazine and prednisolone. Another picture is from a 16-year-old woman with a 3-year history of UC presented with hematochezia and lower abdominal pain. CT scan revealed diffuse wall thickening and luminal narrowing of the rectum and the sigmoid colon and hyperemic mesenteric vessels (Figure 2), which resembles a dragon. Sigmoidoscopy confirmed the diffuse exacerbation of UC. She improved with the administration of mesalazine and prednisolone.

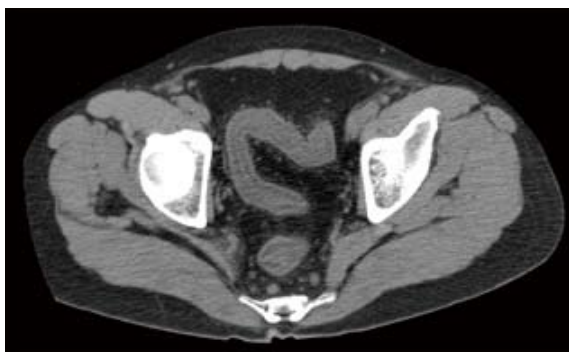


Figure 1 Axial contrast-enhanced computed tomography, showing circumferential and symmetric wall thickening of the sigmoid colon and the rectum, resembling the reversed question mark.

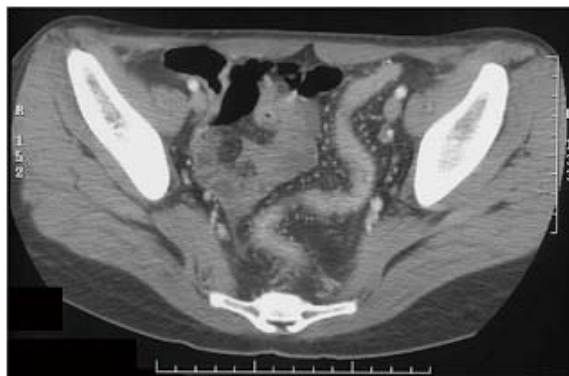


Figure 2 Axial contrast-enhanced computed tomography, showing circumferential and symmetric wall thickening of the sigmoid colon and the rectum, resembling the dragon.

In gastroenterology, a sign is usually a marker or indicator of the presence of a particular disease and many signs are related to findings on clinical examination. In relation to UC, only a few signs have been described that may assist with the interpretation of imaging studies. The well-known sign of UC is tubular appearance^[1], which refers to a loss of haustration that typically extends to the left colon, indicating active or quiescent inflammation. Another sign is target sign^[2], which indicates edematous layer of submucosa of lower attenuation is paralleled by external layer of muscularis propria and internal layer of hypertrophied mucosa, both of which show higher attenuation^[3,4]. In Figure 1, the rectum has the target appearance on axial scan and the longitudinal slice of the sigmoid colon present several layers of wall thickening, resembling the reversed question mark. In figure 2, CT shows wall thickening with uniform increased enhancement and hypervascularity of the involved mesentery, manifesting as vascular dilatation, tortuosity, and prominence. As a result, the rectum and the sigmoid colon present wall thickening and pericolonic stranding, resembling the dragon. All above features reflect the hyperemic state seen typically with active inflammation. Although the target appearance also occurs in Crohn's colitis, it usually display eccentric and discrete. In conclusion, we highlight other radiological findings in UC that we have called "the reversed question mark sign" and

"the dragon sign". Although the final diagnosis of the type of colitis is based on clinical and laboratory data and colonoscopic and biopsy findings, specific CT features help narrow the differential diagnosis. We plan to perform a larger study comparing CT imaging with clinical and endoscopic findings in patients with UC, in order to address a relationship between above radiologic signs and progression of the diseases.

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