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Images in Rheumatology

Misty Mesentery as an Initial Imaging Finding Suggestive of Large Vessel Vasculitis

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Large vessel vasculitis (LVV) refers to vasculitis predominantly affecting large arteries, including the aorta and its major branches. It encompasses conditions such as giant cell arteritis and Takayasu arteritis, as well as unclassified or idiopathic forms.[1] Imaging techniques, including computed tomography (CT), are essential for detecting large vessel involvement, particularly when biopsy findings are negative.[2]

We report the case of a 56-year-old man admitted with fever, headache, and upper abdominal pain lasting 2 weeks. On examination, he had scalp tenderness and upper abdominal tenderness without temporal artery enlargement. Laboratory tests revealed elevated C-reactive protein (CRP: 19.75 mg/dL) and normal IgG4 (45 mg/dL). Initial CT demonstrated increased attenuation of mesenteric fat (Figure 1), suggestive of misty mesentery. Antibiotic therapy for presumed infectious mesenteritis was ineffective, and CRP increased further to 30.20 mg/dL. Contrast-enhanced CT showed thickening of the aortic wall (Figure 2). Based on fever, headache, systemic inflammation, and aortic wall thickening, LVV was considered the most plausible diagnosis.

Prednisolone (1 mg/kg/day) was initiated after temporal artery biopsy (TAB). Immunosuppressants were not started because of financial constraints. The TAB demonstrated very focal, mild inflammatory cell infiltration limited to the adventitia, without disruption of the internal elastic lamina or medial granulomatous inflammation (Figure 3). These findings were nonspecific and insufficient for a definitive diagnosis of vasculitis. Following treatment, the patient's symptoms resolved and CRP levels normalized. Follow-up CT performed 2 months later demonstrated improvement in aortic wall thickening and resolution of misty mesentery (Figures 4 and 5).

Misty mesentery is a benign CT finding characterized by increased mesenteric fat attenuation and may be associated with various conditions, including edema, lymphedema, inflammation, hemorrhage, mesenteric panniculitis, and malignancies.[3] Autoimmune disorders, granulomatous diseases, and vasculitis have been reported as potential etiologies of mesenteric panniculitis.[3,4] Corticosteroids have been reported to relieve symptoms in symptomatic cases,[4] which may also explain the improvement observed in our CT findings.

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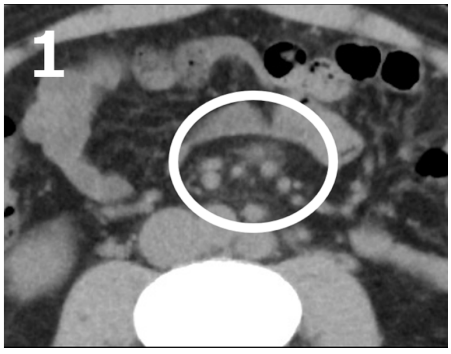

Figure 1. Contrast-enhanced computed tomography (CT) showing increased attenuation of the mesenteric fat tissue (white circle). The image was obtained from approximately the same anatomical level as Figure 4.

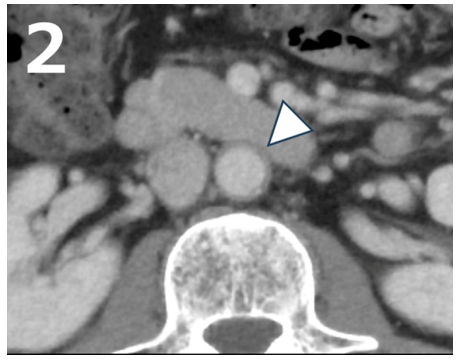

Figure 2. Contrast-enhanced CT revealing circumferential thickening of the aortic wall (white arrow). The image was obtained from approximately the same anatomical level as Figure 5.

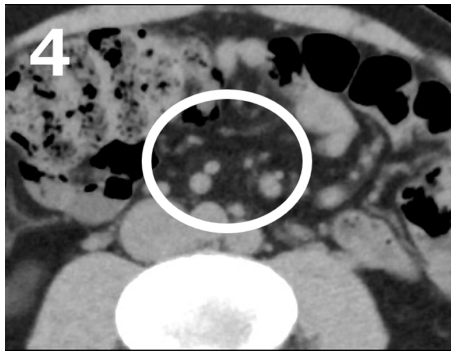

Figure 4. Follow-up contrast-enhanced CT showing the disappearance of the mesenteric fat tissue (white circle). The image was obtained from approximately the same anatomical level as Figure 1.

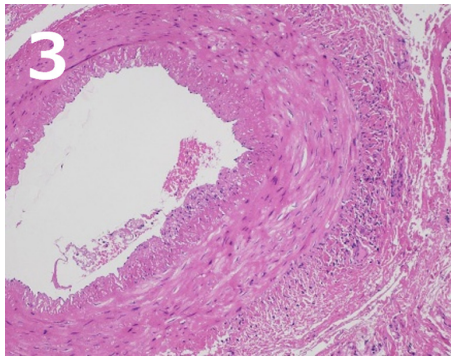

Figure 3. Histopathological examination of temporal artery biopsy showing mild inflammatory cell infiltration in a part of the adventitia (Hematoxylin and Eosin; ×10).

In our case, TAB did not demonstrate definite features of LVV, such as infiltration of polynuclear cells in the media and intima. Although isolated adventitial lymphocytic infiltration is not specific for LVV, aortic wall thickening has been reported in LVV[2] and may support the clinical suspicion of this condition.

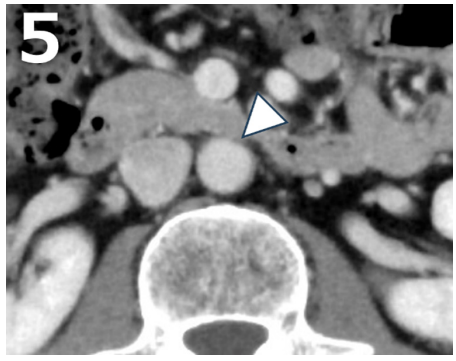

Figure 5. Follow-up contrast-enhanced CT revealing improvement in aortic wall thickening (white arrow). The image was obtained from approximately the same anatomical level as Figure 2.

Although LVV has been associated with mesenteric ischemia presenting as abdominal pain,[5] misty mesentery has not been previously described in this context. The resolution of misty mesentery with corticosteroid therapy suggests an inflammatory rather than ischemic mechanism. This case suggests that LVV may initially present with abdominal pain and mesenteric fat stranding, even when the biopsy findings are nondiagnostic. Recognizing such atypical imaging findings may lead to earlier consideration of LVV.

Data Availability Statement: The data that support the findings of this study are available on request from the corresponding author.

Artificial Intelligence Usage Statement: The authors used a generative AI tool (ChatGPT, OpenAI) to assist with language editing and improvement of readability. The authors reviewed and edited the output and take full responsibility for the content of the manuscript.

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