

Temporal artery thickening in giant cell arteritis

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DESCRIPTION

A 74-year-old woman presented with fever, jaw claudication and bilateral temporal pain lasting for 1 week. On examination, the bilateral temporal arteries (TAs) were nodularly swollen, tender and hypopulsatile (**figure 1A**). A blood test showed elevated white cell count ($9.33 \times 10^9/L$), high erythrocyte sedimentation rate (119 mm/h) and high level of C-reactive protein (11.03 mg/dL). Ultrasound (US) showed wall thickening (halo sign) and stenosis of the bilateral TAs (**figure 1B,C**). Contrast-enhanced MRI showed thickening of the TA bilaterally. Biopsy of the left TA led to the diagnosis of giant cell arteritis (GCA). Immediately after the biopsy, prednisolone at 1 mg/kg was administered orally, and her symptoms rapidly resolved.

GCA is a vasculitis of large and medium-sized blood vessels. Symptoms include headache, visual disturbance, jaw claudication and fever. Physical examination shows thickening, tenderness and pulselessness in the TA. However, any one of these findings alone is not sufficient for diagnosing or ruling out GCA.¹ US is useful for diagnosis with a sensitivity of 77% and specificity of 96%.² TA US in GCA reveals four characteristic findings: (1) 'halo sign', which is a hypochoic ring around the lumen reflecting vessel wall thickening, (2) 'compression sign', which is contrasting echogenicity induced between the artery wall and surrounding tissue by TA compression, (3) stenosis and (4) occlusion. Of

Patient's perspective

I had a fever and could not eat for a week because my jaw hurt during meals. It was very hard for me and I was worried that I might be suffering from a serious illness. However, I was relieved to find that my symptoms improved soon after the treatment started.

Learning points

- ▶ Temporal artery ultrasonography (US) is useful for the diagnosis of giant cell arteritis (GCA).
- ▶ 'Halo sign' is one of the characteristic findings of temporal artery US in GCA.

these findings, the halo sign is the most useful for diagnosis.² However, it is important to investigate the TAs bilaterally and as completely as possible because the lesions are often segmental and only evaluating part of the TAs may result in a false negative.

When GCA is suspected on the basis of physical examination, TA US should be checked for characteristic findings including the halo sign.

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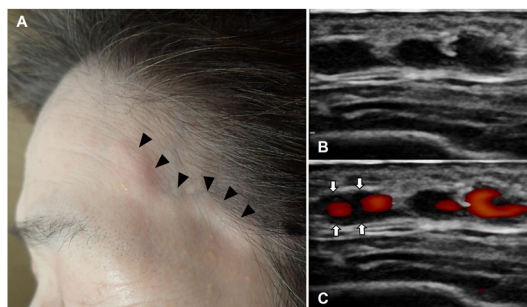


Figure 1 Nodular swelling of the temporal artery (arrowheads) (A) and ultrasound images showing the halo sign as a hypochoic area surrounding the artery (arrows) and stenosis as an area of no colour Doppler (B, C).



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