

Pseudohalo sign in temporal pseudoaneurysm

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A 40-year-old man presented with tenderness and swelling of the right frontotemporal region lasting for about 3 years. The symptoms started after the patient had bumped his right temple against a table's edge, but their severity increased in the last few weeks. No further signs of potential giant cell arteritis were found, with unremarkable inflammation parameters. Ultrasonography (US) of the affected temporal region in

transversal and longitudinal views revealed a hypoechoic, perivascular area with visible central arterial lumen of the right temporal artery (FIGURE 1A and 1B). Duplex US of the right temporal artery revealed a hypoechoic, perivascular area with central perfusion suggesting a halo sign. However, on closer examination, additional perfusion of subcutaneous hypoechoic areas and perfusion within the presumed halo sign were detected (FIGURE 1C

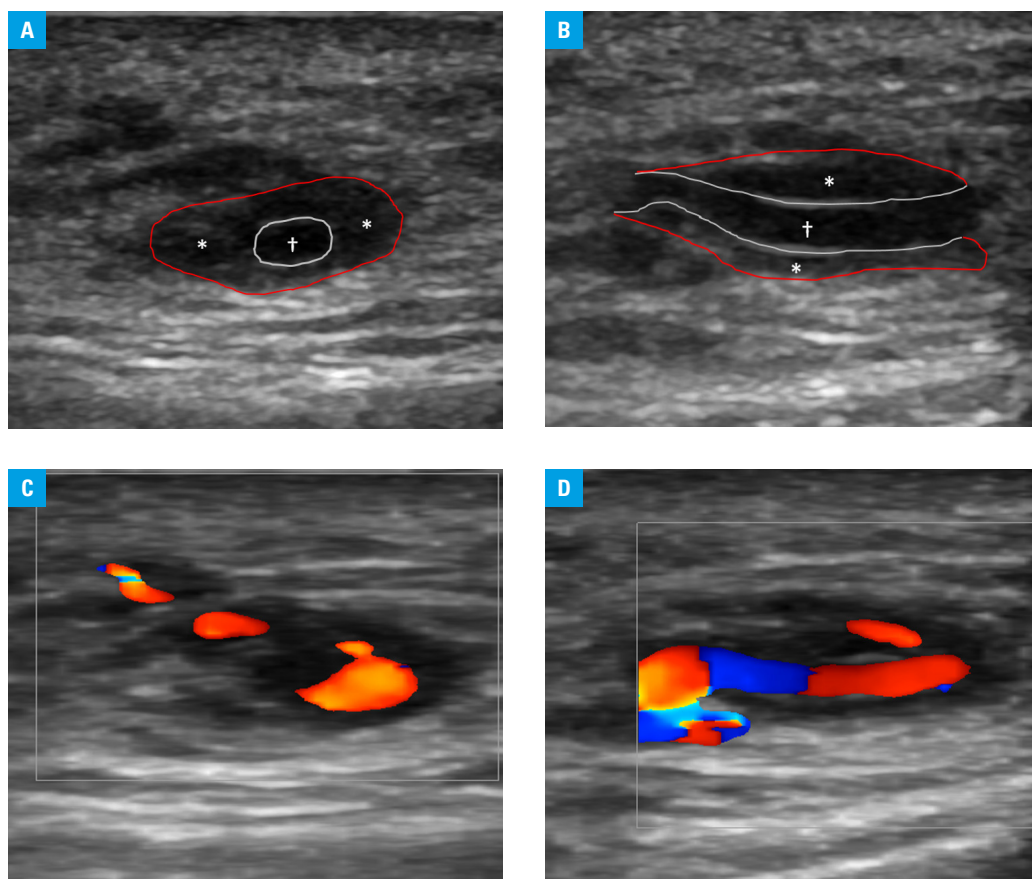


FIGURE 1 A, B – ultrasonography (US) of the right temporal artery in a transversal (A) and longitudinal (B) view showing a hypoechoic perivascular area (marked with asterisks, outlined in red) and visible central arterial lumen (marked with obelisk, outlined in white); additional hypoechoic areas were found near the hypoechoic perivascular area. C – duplex US of the right temporal artery in a transversal view showing a hypoechoic perivascular area with central perfusion mimicking a halo sign, and perfusion within the nearby hypoechoic areas; D – duplex US of the right temporal artery in a longitudinal view revealing a hypoechoic perivascular area with central perfusion, and additional perfusion within the nearby hypoechoic perivascular area

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Received: January 30, 2024.

Revision accepted:
February 15, 2024.

Published online: February 21, 2024.
Pol Arch Intern Med. 2024;

134 (4): 16685

doi:10.20452/pamw.16685

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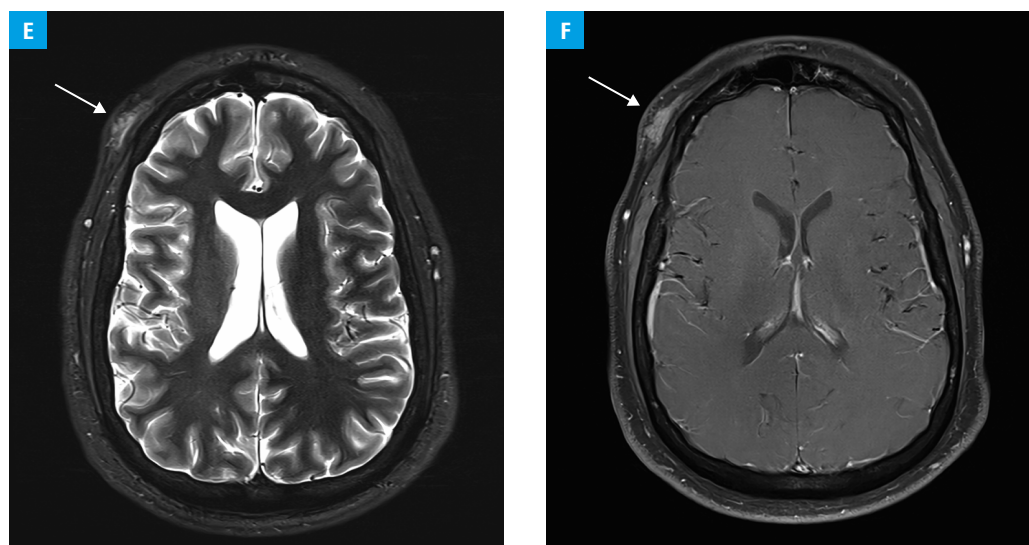


FIGURE 1 E, F – magnetic resonance imaging of the cranial arteries showing pseudoaneurysm of the right temporal artery (arrows; E – T2-weighted sequencing; F – fluid-attenuated inversion recovery sequencing)

and 1D). A pseudohalo sign caused by perivascular hematoma formation without lumen stenosis was suggested instead of a halo sign due to inflammatory vascular wall thickening with lumen stenosis. Temporal pseudoaneurysm was suspected; therefore, magnetic resonance imaging of the cranial arteries was performed, confirming pseudoaneurysm of the right temporal artery without potential inflammatory changes (FIGURE 1E and 1F). The patient underwent successful and uneventful surgical removal of the post-traumatic temporal pseudoaneurysm, without any histologic abnormalities indicating potential vasculitis on subsequent biopsy.

Duplex US is the first-line examination to confirm temporal pseudoaneurysm. During the examination, different US signs may be detected, including a yin-yang sign, to-and-fro pattern, or the abovementioned pseudohalo sign.^{1,2} Misdiagnosis of the latter with a halo sign, which is a classic US finding in cranial giant cell arteritis, should be avoided, especially in the cases with mismatching clinical signs and symptoms.³

ARTICLE INFORMATION

ACKNOWLEDGMENTS None.

FUNDING None.

CONFLICT OF INTEREST None declared.

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HOW TO CITE Jud P. Pseudohalo sign in temporal pseudoaneurysm. *Pol Arch Intern Med.* 2024; 134: 16685. doi:10.20452/pamw.16685

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