Swollen superficial temporal artery in dural arteriovenous fistula

Toshihiko Haisa, MD, PhD; Masaaki Shojima, MD, PhD

A 55-year-old man with no antecedent events was brought to the emergency department by ambulance soon after he suddenly felt motor weakness in the left extremities. Emergency CT demonstrated a right frontal cerebral hemorrhage (figure, A). On admission, he was well-oriented and had left-sided hemiparesis. He could barely lift his left knee, and his left upper extremity was completely paralytic. The bilateral superficial temporal arteries (STAs) were notably swollen (figure, B), which the patient reported he had noticed about 1 year prior. Carotid angiography disclosed multiple dural arteriovenous fistulas (dAVFs) at the superior sagittal sinus (SSS) and the left transverse sinus.

Figure Neuroimaging studies and photograph of the patient

(A) Cranial CT shows a right frontal lobe hematoma. (B) Photograph shows prominent swelling of the superficial temporal artery (STA). (C) Right external carotid angiogram, lateral view, discloses the superior sagittal sinus (SSS) dural arteriovenous fistula (dAVF) is fed by the STA and middle meningeal arteries. (D) Right external carotid angiogram, lateral view, discloses disappearance of the SSS dAVF. (E) Photograph shows shrinkage of the STA.

Department of Neurosurgery (TH), JR Tokyo General Hospital and Department of Neurosurgery (MS), University of Tokyo Hospital, Tokyo, Japan.

Funding information and disclosures are provided at the end of the article. Full disclosure form information provided by the authors is available with the **full text of this article** at Neurology.org/cp.

Correspondence to: haisat-kkr@umin.ac.jp

He was transferred to University of Tokyo Hospital, where endovascular obliteration of the SSS dAVF was successfully achieved by both transarterial (i.e., via the STAs) and transvenous embolization. The SSS dAVF had been fed by the bilateral STAs and middle meningeal arteries (figure, C), which disappeared following embolization (figure, D). At a 1-month follow-up visit, he could walk without a walking stick and raise the left upper extremity with the normalized STAs. However, the STAs became swollen again 7 months after embolization, with recurrence of the SSS dAVF. The second embolization was successful and the STAs shrunk once again (figure, E).

Swelling of the STA is known to be a sign of temporal arteritis^{1,2} but may be an indication of dAVF as well. Furthermore, the STA can be a barometer of its disappearance and recurrence.

REFERENCES

1. Hutchinson J. Diseases of the arteries. 1. On a peculiar form of thrombotic arteritis of the aged which is sometimes productive of gangrene. *Arch Surg* 1890;1:323–329.
2. Salvarani C, Cantini F, Boiardi L, Hunder GG. Polymyalgia rheumatica and giant-cell arteritis. *N Engl J Med* 2002;347:261–271.

Received July 7, 2015. Accepted in final form October 1, 2015.

AUTHOR CONTRIBUTIONS

Toshihiko Haisa: drafting/revising the manuscript, study concept or design, analysis or interpretation of data, acquisition of data. Masaaki Shojima: analysis or interpretation of data, acquisition of data.

STUDY FUNDING

No targeted funding reported.

DISCLOSURES

T. Haisa reports no disclosures. M. Shojima receives research support from the Ministry of Education, Culture, Sports, Science and Technology, Japan. Full disclosure form information provided by the authors is available with the **full text of this article at Neurology.org/cp**.

Discover Altmetrics

See real-time downloads and online activity for articles!

- Picked up by 8 news outlets
- Tweeted by 18
- Mentioned in 1 Google+ posts
- 12 readers on Mendeley

[See more details](#)

Authors and readers alike can view real-time data on articles including downloads and online activity across multiple sources. Click on the “Article Metrics” link in the right column of an article for details. To learn more about article metrics visit http://www.neurology.org/site/include/files/article_usage.xhtml.