Carotid Artery Stenosis in a Young Asymptomatic Patient
The Value of Multimodal Cross-Sectional Imaging

Camila Franco-Mesa, MD, Young Erben, MD, Michelle Lin, MD, MPH, Josephine F. Huang, MD, Sukhwinder S. Sandhu, MD, Jason L. Siegel, MD, Aziza Nassar, MD, MPH, MBA, and James F. Meschia, MD

Neurology® 2021;96:342. doi:10.1212/WNL.0000000000011417

Correspondence
Y. Erben
erben.young@mayo.edu

Figure Carotid Ultrasound, CT Angiography (CTA), MRI, and Stained Sections

(A) Carotid ultrasound with >70% stenosis. (B) Axial and (C) sagittal CTA with 1.5 mm lumen (white arrows); contrast filling within ulcerated plaque (blue arrows). (D) Axial MRI noncontrast double inversion recovery T1-weighted image with intrinsic, hyperintense T1 signal within the vessel wall (white arrow). (E) Double inversion recovery axial T1 with avid enhancement in this region (white arrow). (F) Hematoxylin & eosin stain with calcification and cholesterol crystals (blue arrow) with ×20 magnification. (G) Hemosiderin-laden macrophages (blue arrows) with ×40 magnification.

A 56-year-old right-handed patient presented with asymptomatic >70% left internal carotid artery (ICA) stenosis on ultrasound. The peak systolic and end diastolic velocities were 237 and 51 cm/s for an ICA/common carotid artery ratio of 2.8. CT angiography demonstrated 70% ICA stenosis with dissection/ulcerated plaque. Magnetic resonance angiography with vessel wall imaging demonstrated 70% stenosis with enhancing hemorrhagic ulcerated plaque. The patient underwent endarterectomy. Pathology demonstrated calcifications with cholesterol crystals and hemosiderin-laden macrophages (figure).

We present a case illustrating the value of additional imaging studies including visualization of vulnerable features including intraplaque hemorrhage, a predictor of stroke.

Study Funding
No targeted funding reported.

Disclosure
The authors report no disclosures relevant to the manuscript. Go to Neurology.org/N for full disclosures.

Reference
Carotid Artery Stenosis in a Young Asymptomatic Patient: The Value of Multimodal Cross-Sectional Imaging
Camila Franco-Mesa, Young Erben, Michelle Lin, et al.
Neurology 2021;96;342 Published Online before print December 22, 2020
DOI 10.1212/WNL.00000000000011417

This information is current as of December 22, 2020

Updated Information & Services
including high resolution figures, can be found at:
http://n.neurology.org/content/96/7/342.full

References
This article cites 1 articles, 1 of which you can access for free at:
http://n.neurology.org/content/96/7/342.full#ref-list-1

Subspecialty Collections
This article, along with others on similar topics, appears in the following collection(s):
All Cerebrovascular disease/Stroke
http://n.neurology.org/cgi/collection/all_cerebrovascular_disease_stroke
All Education
http://n.neurology.org/cgi/collection/all_education
Clinical neurology examination
http://n.neurology.org/cgi/collection/clinical_neurology_examination
Other cerebrovascular disease/Stroke
http://n.neurology.org/cgi/collection/other_cerebrovascular_disease__stroke
Outcome research
http://n.neurology.org/cgi/collection/outcome_research

Permissions & Licensing
Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at:
http://www.neurology.org/about/about_the_journal#permissions

Reprints
Information about ordering reprints can be found online:
http://n.neurology.org/subscribers/advertise

Neurology ® is the official journal of the American Academy of Neurology. Published continuously since 1951, it is now a weekly with 48 issues per year. Copyright © 2020 American Academy of Neurology. All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.