Disputes & Debates: Editors' Choice

Steven Galetta, MD, FAAN, Section Editor

Editors' note: Carotid plaques and detection of atrial fibrillation in embolic stroke of undetermined source

In "Carotid plaques and detection of atrial fibrillation in embolic stroke of undetermined source," Ntaios et al. studied 777 patients with embolic stroke of undetermined source (ESUS) and found that the presence of ipsilateral nonstenotic carotid plaque was associated with a significantly lower likelihood for atrial fibrillation. Siegler et al. questioned the modality used to identify nonstenotic carotid plaque and paroxysmal atrial fibrillation, given that this affects incidence rates. Furthermore, they noted that although the authors commented on the frequency of conditions during which atrial fibrillation was detected (such as routine ECG, stroke recurrence, and myocardial infarction), it would have been useful to compare the incidence rates for patients with and without plaque. Ntaios responded that unfortunately, they did not have access to information about the technique used to diagnose carotid plaque or atrial fibrillation and that they did not think it was appropriate to compare the incidence of conditions during which atrial fibrillation was detected without this information. Lattanzi et al. commented that it would be useful to assess the relationship between plaques and atrial fibrillation and other variables, such as atrial cardiopathy, which has been shown to be inversely related to artery-to-artery strokes. Ntaios responded that they have performed additional analysis and hope to have their results published soon. It is clear that further research into workup and management of ESUS is needed.

Ariane Lewis, MD, and Steven Galetta, MD
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Reader response: Carotid plaques and detection of atrial fibrillation in embolic stroke of undetermined source

James E. Siegler (Philadelphia), Jesse Thon (Philadelphia), and Brett L. Cucchiara (Philadelphia)
Neurology® 2020;94:849–850. doi:10.1212/WNL.0000000000009428

We read with much interest the multicenter observational experience of Ntaios et al.[1] regarding the incidence of atrial fibrillation among patients with embolic stroke of undetermined source (ESUS). The article added considerably to the increasing evidence regarding the heterogeneity of ESUS and the clinical relevance of nonstenotic carotid artery plaque.[2,3] It may also assist in decision making regarding outpatient cardiac event monitoring.

We were curious to know whether the investigators could expand on their variable definitions. For the primary independent variable of nonstenotic ipsilateral carotid plaque, the various imaging modalities used could lead to inaccurate prevalence estimates. It would be helpful to know which modalities were used in patients with plaque vs those without. Furthermore, were the methods used for detecting paroxysmal atrial fibrillation (pAF) similar between these groups? At our center, we routinely monitor for pAF for a minimum of 14 days in patients with ESUS older than 50 years—irrespective of the presence of nonstenotic plaque. But we confess to our own selection bias that longer monitoring may be pursued in patients who have minimal or no plaque and in older patients. As has been described previously,[4] the device and duration of

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event monitoring can dramatically affect the probability of detecting pAF in patients with cryptogenic stroke. The investigators presented data on conditions for which pAF was identified (table 2),[1] but it would be more important to compare the incidence rates for these conditions between patients with plaque and those without.

1. Ntaios G, Perlepe K, Sirimarco G, et al. Carotid plaques and detection of atrial fibrillation in embolic stroke of undetermined source. Neurology 2019;92:e2644–e2652.
2. Freilinger TM, Schindler A, Schmidt C, et al. Prevalence of nonstenosing, complicated atherosclerotic plaques in cryptogenic stroke. JACC Cardiovasc Imaging 2012;5:397–405.
3. Coutinho JM, Derkatch S, Potvin AR, et al. Nonstenotic carotid plaque on CT angiography in patients with cryptogenic stroke. Neurology 2016;87:665–672.
4. Choe WC, Passman RS, Brachmann J, et al. A comparison of atrial fibrillation monitoring strategies after cryptogenic stroke (from the cryptogenic stroke and underlying AF trial). Am J Cardiol 2015;116:889–893.

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George Ntaios (Larissa, Greece)

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I would like to thank Dr. Siegler and colleagues for their kind words and for their thoughtful comments on our article.[1] I agree that it would be useful to know which imaging modalities were used to assess carotid plaques; however, we did not register this information. Furthermore, we did not assess the type of modalities of heart rhythm monitoring that applied to our patients and therefore cannot provide information on whether they were used similarly between patients with or without carotid stenosis. I agree that it may be possible that these modalities were applied differently between these 2 groups. In this context, any comparison between these 2 groups about the incidence rates of the conditions during which atrial fibrillation was detected could lead to erroneous conclusions, which is why we refrained from providing these results in the article.[1]

1. Ntaios G, Perlepe K, Sirimarco G, et al. Carotid plaques and detection of atrial fibrillation in embolic stroke of undetermined source. Neurology 2019;92:e2644–e2652.

Reader response: Carotid plaques and detection of atrial fibrillation in embolic stroke of undetermined source

Simona Lattanzi (Ancona, Italy) and Mauro Silvestrini (Ancona, Italy)

Neurology® 2020;94:850–851. doi:10.1212/WNL.0000000000009430

We read with great interest the article by Ntaios et al.,[1] which demonstrated a lower cumulative probability of atrial fibrillation (AF) detection in patients with embolic strokes of undetermined source (ESUS) with ipsilateral nonstenotic carotid plaques compared with those without.

Far from being a single entity, ESUS constitute a heterogeneous group with high variability in clinical presentation and etiology. Remarkably, left atriopathy has been inversely associated with paradoxical and artery-to-artery embolic sources, including patent foramen ovale (PFO) and vulnerable substenotic atherosclerotic disease of aortic arch and neck arteries.[2] Carotid plaques with increased thickness, mobility, and ulceration were more common when ipsilateral than contralateral to the stroke site.[3] Young patients presented lower rates of vascular risk factors and left atrial enlargement, higher incidence of PFO, and no atherosclerosis.[4]

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Accordingly, it would be interesting to provide a more comprehensive analysis of data by exploring the relationships between nonstenotic carotid plaques and AF detection with additional parameters, including demographics, stroke severity and location, indicators of plaque vulnerability, presence of atrial cardiopathy, and paradoxical embolic sources. Optimal management for ESUS is to be elucidated. Efforts to identify distinct phenotypes based on the underlying pathogenesis could inform tailored strategies and improve prevention.[5]

1. Ntaios G, Perlepe K, Sirimarco G, et al. Carotid plaques and detection of atrial fibrillation in embolic stroke of undetermined source. Neurology 2019;92:e2644–e2652.
2. Lattanzi S, Cagnetti C, Pulcini A, et al. The P-wave terminal force in embolic strokes of undetermined source. J Neurol Sci 2017;375:175–178.
3. Komatsu T, Iguchi Y, Arai A, et al. Large but nonstenotic carotid artery plaque in patients with a history of embolic stroke of undetermined source. Stroke 2018;49:3054–3056.
4. Piffer S, Bignamini V, Rozzanigo U, et al. Different clinical phenotypes of embolic stroke of undetermined source: a subgroup analysis of patients. J Stroke Cerebrovasc Dis 2018;27:3578–3586.
5. Lattanzi S, Brigo F, Cagnetti C, et al. Patent foramen ovale and cryptogenic stroke or transient ischemic attack: to close or not to close? A systematic review and meta-analysis. Cerebrovasc Dis 2018;45:193–203.

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George Ntaios (Larissa, Greece)
Neurology® 2020;94:851. doi:10.1212/WNL.0000000000009429

I thank Dr. Lattanzi and Dr. Silvestrini for their interest in our work[1] and their constructive suggestions. Several of the proposed analyses were already conducted and are currently under review in peer-reviewed journals. Hopefully, the results of these analyses will be publicly available soon.

1. Ntaios G, Perlepe K, Sirimarco G, et al. Carotid plaques and detection of atrial fibrillation in embolic stroke of undetermined source. Neurology 2019;92:e2644–e2652.

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CORRECTIONS

Muscle and not neuronal biomarkers correlate with severity in spinal and bulbar muscular atrophy

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In the article "Muscle and not neuronal biomarkers correlate with severity in spinal and bulbar muscular atrophy" by Lombardi et al.,[1] the y-axis label for figure 2c should be "Creatinine (umol/L)." The editorial office regrets the error.

Reference

1. Lombardi V, Querin G, Ziff OJ, et al. Muscle and not neuronal biomarkers correlate with severity in spinal and bulbar muscular atrophy. Neurology 2019;92:e1205–e1211.

Finding a common path to the assessment of persons with intellectual development disorders

Neurology® 2020;94:852. doi:10.1212/WNL.0000000000009541

In the editorial "Finding a common path to the assessment of persons with intellectual development disorders" by Coffman and Borgatti,[1] Dr. Borgatti's affiliation should read: "Child Neurology and Psychiatry Unit, IRCCS Mondino Foundation (Pavia, Italy)." The authors regret the error.

Reference

1. Coffman KA, Borgatti R. Finding a common path to the assessment of persons with intellectual development disorders. Neurology 2020;94:507–508.

Visual field deficits following laser ablation of the hippocampus

Neurology® 2020;94:852. doi:10.1212/WNL.0000000000009543

In the article "Visual field deficits following laser ablation of the hippocampus" by Donos et al.,[1] first published online February 26, 2020, the figures should appear in the correct numbered order and should correctly match the numbered figure legends. The image under figure 1 should have appeared with figure 3. The image under figure 2 should have appeared under figure 4. The image for figure 3 should have corresponded with figure 5. The image under figure 4 should have appeared with figure 6. The image under figure 5 should have appeared under figure 1. The image under figure 6 should have appeared under figure 2. The figures and legends are correctly matched in the March 24, 2020, issue. The publisher regrets the error.

Reference

1. Donos C, Rollo P, Tombridge K, Johnson JA, Tandon N. Visual field deficits following laser ablation of the hippocampus. Neurology 2020;94:e1303–e1313.

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Finding a common path to the assessment of persons with intellectual development disorders

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