

# Disputes & Debates: Editors' Choice

Steven Galetta, MD, FAAN, Section Editor

## Editors' note: Demoralization in Parkinson disease

In the article "Demoralization in Parkinson disease," Koo et al. reported that demoralization, with a prominent inability to cope, was common in their sample of 94 participants with Parkinson disease (PD), and that it was associated with motor dysfunction. In response, Bruno et al. report the findings of an exploratory study in patients with advanced PD, which found that while demoralization and depression tended to coexist, demoralization was correlated with PD severity, whereas depression increased caregiver strain, further suggesting that these are different constructs. In reply, author Koo agrees that their findings are complementary, and discusses their favored conceptualization of depression vs demoralization, suggesting that social support and perceived social support may safeguard against demoralization.

Aravind Ganesh, MD, and Steven Galetta, MD  
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## Reader response: Demoralization in Parkinson disease

Veronica Bruno (Calgary, Canada), Deborah Mancini (Toronto, Canada), Mateusz Zurowski (Toronto, Canada), and Janis M. Miyasaki (Edmonton, Canada)  
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We read with interest the article by Koo et al.<sup>1</sup> and agree with the authors about the relevance of demoralization in Parkinson disease (PD). Adding to their results, we performed an exploratory study in a movement disorders palliative care clinic on demoralization and depression in patients with advanced PD ( $\geq 2.5$  on the Hoehn & Yahr scale) and their relationship with caregiver burden. Patients were assessed using the Beck Hopelessness Scale (BHS), the Beck Depression Inventory (BDI), the caregivers Zarit Burden Interview, as well as scales for anxiety, quality of life, and motor symptoms.

In our population ( $n = 43$ ), 100% of the demoralized patients were depressed. Ten patients had depression; of those, 70% were demoralized. Linear regression models adjusting for age and sex showed that BDI scores strongly correlated with BHS ( $\beta = 0.98, p = 0.002$ ) and with the caregiver burden ( $\beta = 0.42, p = 0.008$ ). The BHS score correlated with the Movement Disorders Society–sponsored revision of the Unified Parkinson's Disease Rating Scale III (MDS-UPDRS III) ( $\beta = 0.15, p = 0.04$ ).

Our results support those by Koo et al.: demoralization and depression are different constructs. Demoralization seems to correlate to MDS-UPDRS III, but not depression. Depression, but not demoralization, appears to increase caregiver strain. Therefore, differentiating demoralization from depression may be important because of the possibility of different therapeutic approaches, even for patients with advanced disease.

1. Koo BB, Chow CA, Shah DR, et al. Demoralization in Parkinson disease. *Neurology* 2018;90:e1613–e1617.

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## Author response: Demoralization in Parkinson disease

Brian B. Koo (Orange, CT)

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I thank Bruno et al. for their comment on demoralization in Parkinson disease (PD). Certainly, it makes sense to explore feelings of hopelessness when studying demoralization, as hopelessness is more specific to demoralization than is depressed mood. I am curious if Bruno et al. found this to be the case in their PD cohort. It is interesting that their findings mirror ours,<sup>1</sup> in that demoralization was associated with the Movement Disorders Society–sponsored revision of the Unified Parkinson's Disease Rating Scale III. The finding that depression, but not demoralization, is associated with caregiver burden is interesting and also makes sense. Demoralization and depression are overlapping yet distinct feeling states. Demoralization is characterized by subjective incompetence and a loss of a cognitive map, but willpower remains. In depression without demoralization, the cognitive map is intact but willpower is gone. Social support and perceived social support are also important factors that safeguard against demoralization. I commend Bruno et al. for looking at the important issue of demoralization in PD and for having the foresight to include an assessment of the caregiver and his or her burden.

1. Koo BB, Chow CA, Shah DR, et al. Demoralization in Parkinson disease. *Neurology* 2018;90:e1613–e1617.

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### Editors' note: Teaching NeuroImages: Multimodality imaging of carotid web

In “Teaching NeuroImages: Multimodality imaging of carotid web,” Renard et al. presented representative images of a carotid web identified in a 52-year-old woman presenting with an ipsilateral acute middle cerebral artery infarction on 3 modalities: Doppler ultrasound, CT, and magnetic resonance angiography. In response, Dr. Sharma discusses the relative strengths and limitations of different modalities in identifying carotid webs. Dr. Sharma notes that in an ongoing study of high-resolution MRI in patients with significant symptomatic carotid stenosis, carotid webs were identified in about 22% of cases, but that the role of such webs in cryptogenic stroke remains unknown.

Aravind Ganesh, MD, and Steven Galetta, MD

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## Reader response: Teaching NeuroImages: Multimodality imaging of carotid web

Vijay K. Sharma (Singapore)

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I read with interest the ultrasound and CT angiographic (CTA) findings of carotid web.<sup>1</sup> This entity is recognized more often, probably due to improved resolution of various diagnostic modalities. Duplex ultrasonography and CTA can identify large webs, especially when associated with secondary mild calcification or a superimposed thrombus. Presence of larger amount of calcium interferes with the spatial resolution of CTA.<sup>2</sup> These limitations may be

overcome by high-resolution MRI (HR-MRI) of the carotid wall. HR-MRI enables visualization of the webs that are small, thin, membranous, filamentous, or diaphragm-like.<sup>3,4</sup> A recent large acute stroke trial reported carotid web on the symptomatic side in 2.5% of patients.<sup>5</sup> In an ongoing prospective study of HR-MRI in patients with >50% symptomatic carotid stenosis, we observed carotid webs of various morphologies in about 22%. Various protocols may help with in-depth evaluation of carotid web morphology, composition, as well as associated hemodynamic alterations. Whether carotid webs play an etiopathogenic role in cryptogenic stroke remains unknown. This important question can be answered only by larger prospective studies with uniform imaging protocols.

1. Renard D, Hampton J, Keita M, Freitag C. Teaching NeuroImages: multimodality imaging of carotid web. *Neurology* 2018;90:e1541.
2. Bishop PD, Feiten LE, Ouriel K, et al. Arterial calcification increases in distal arteries in patients with peripheral arterial disease. *Ann Vasc Surg* 2008;22:799–805.
3. Cappendijk VC, Cleutjens KB, Kessels AG, et al. Assessment of human atherosclerotic carotid plaque components with multisequence MR imaging: initial experience. *Radiology* 2005;234:487–492.
4. Boesen ME, Eswaradass PV, Singh D, et al. MR imaging of carotid webs. *Neuroradiology* 2017;59:361–365.
5. Compagne KCJ, van Es ACGM, Berkhemer OA, et al. Prevalence of carotid web in patients with acute intracranial stroke due to intracranial large vessel occlusion. *Radiology* 2018;286:1000–1007.

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## CORRECTIONS

### Clinical Reasoning: Transient speech deficits in a patient with history of medulloblastoma

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In the Clinical Reasoning piece “Transient speech deficits in a patient with history of medulloblastoma” by Schulte et al.,<sup>1</sup> the byline is missing degrees for two authors. The author list should have included “Tony J.C. Wang, MD” and “Angela Lignelli, MD.” The authors regret the error.

## Reference

1. Schulte JD, Hargus G, Canoll P, et al. Clinical Reasoning: Transient speech deficits in a patient with history of medulloblastoma. *Neurology* 2018;91:e1196–e1201.

### Financial relationships between neurologists and industry: The 2015 Open Payments database

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In the Contemporary Issues piece “Financial relationships between neurologists and industry: The 2015 Open Payments database” by Ahlawat and Narayanaswami,<sup>1</sup> there is an error at the top of the second column on page 1065, which should state “The payments to these 6 neurologists totaled \$259,858” rather than “The payments to these 6 neurologists totaled \$2,59,858.” The authors regret the error.

## Reference

1. Ahlawat A, Narayanaswami P. Financial relationships between neurologists and industry: the 2015 Open Payments database. *Neurology* 2018;90:1063–1070.

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## Financial relationships between neurologists and industry: The 2015 Open Payments database

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