

# Teaching NeuroImages: Parkinsonism Secondary to a Metastatic Lesion Involving the Substantia Nigra

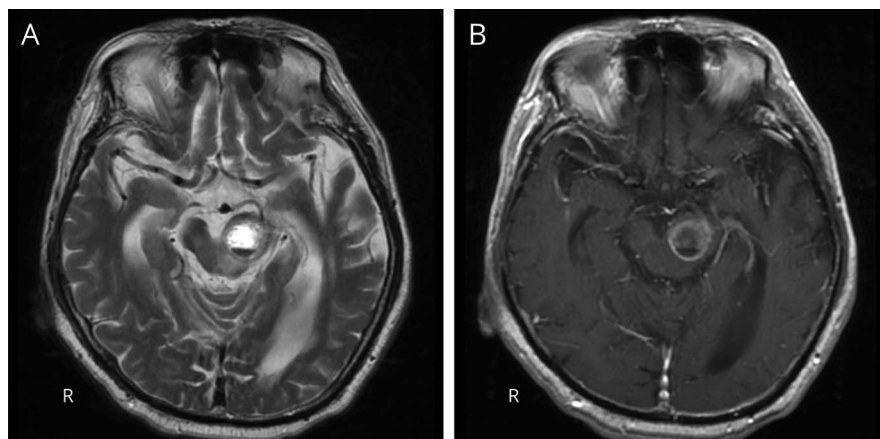
Kosei Hirata, MD, Takanori Yokota, MD, PhD, and Yoshiharu Miura, MD, PhD

Neurology® 2021;96:e1800-e1801. doi:10.1212/WNL.0000000000011162

## Correspondence

Dr. Hirata  
k-hirata.nuro@tmd.ac.jp

## Figure Brain MRI Findings



(A) Axial T2-weighted and (B) T1-weighted images with gadolinium contrast show ring enhanced mesencephalic mass involving left substantia nigra.

A 74-year-old man with a 9-month history of treatment for metastatic small cell lung carcinoma presented with 3 months of gradual-onset small steps and stooped posture. His medical history was unremarkable except for pneumothorax in his 30s. Neurologic examination revealed bradykinesia, rigidity in the right extremities, stooped posture, and hyperreflexia in all extremities. Brain MRI showed a ring-enhanced lesion in the midbrain involving the left substantia nigra (figure), which was not evident on MRI 4 months earlier. Although he underwent whole-brain irradiation with a marked decrease in the lesion size, his parkinsonism did not remit. He was unresponsive to levodopa up to 300 mg/d. His parkinsonism did not worsen, and he died 4 months after diagnosis.

Although brain tumors at various locations are associated with parkinsonism, metastatic tumors contacting the substantia nigra comprise a rare but important cause of secondary parkinsonism.<sup>1,2</sup>

## Study Funding

No targeted funding reported.

## Disclosure

The authors report no disclosures relevant to the manuscript. Go to [Neurology.org/N](https://www.neurology.org/N) for full disclosures.

## MORE ONLINE

→Teaching slides  
[links.lww.com/WNL/B267](https://links.lww.com/WNL/B267)

From the Department of Neurology (K.H., Y.M.), Tokyo Metropolitan Cancer and Infectious Diseases Center, Komagome Hospital; and Department of Neurology and Neurological Science (K.H., T.Y.), Graduate School of Medical and Dental Sciences, Tokyo Medical and Dental University, Japan.

Go to [Neurology.org/N](https://www.neurology.org/N) for full disclosures.

---

## Appendix Authors

Name	Location	Contribution
<b>Kosei Hirata, MD</b>	Tokyo Metropolitan Cancer and Infectious Diseases Center, Komagome Hospital, Japan	Drafted the manuscript for intellectual content, primary clinical care of the patient
<b>Takanori Yokota, MD, PhD</b>	Tokyo Medical and Dental University, Japan	Revised the manuscript for intellectual content
<b>Yoshiharu Miura, MD, PhD</b>	Tokyo Metropolitan Cancer and Infectious Diseases Center, Komagome Hospital, Japan	Revised the manuscript for intellectual content

## References

1. Yasuhara T, Agari T, Kambara H, et al. Parkinsonism related to brain tumors: a case report and review of the literature. *Open Neurosurg J* 2009;2:4–7.
2. Joutsa J, Horn A, Hsu J, Fox MD. Localizing parkinsonism based on focal brain lesions. *Brain* 2018;141:2445–2456.

# Neurology®

## Teaching NeuroImages: Parkinsonism Secondary to a Metastatic Lesion Involving the Substantia Nigra

Kosei Hirata, Takanori Yokota and Yoshiharu Miura

*Neurology* 2021;96:e1800-e1801 Published Online before print November 9, 2020

DOI 10.1212/WNL.0000000000011162

**This information is current as of November 9, 2020**

<b>Updated Information &amp; Services</b>	including high resolution figures, can be found at: <a href="http://n.neurology.org/content/96/13/e1800.full">http://n.neurology.org/content/96/13/e1800.full</a>
<b>References</b>	This article cites 2 articles, 0 of which you can access for free at: <a href="http://n.neurology.org/content/96/13/e1800.full#ref-list-1">http://n.neurology.org/content/96/13/e1800.full#ref-list-1</a>
<b>Subspecialty Collections</b>	This article, along with others on similar topics, appears in the following collection(s): <b>All Clinical Neurology</b> <a href="http://n.neurology.org/cgi/collection/all_clinical_neurology">http://n.neurology.org/cgi/collection/all_clinical_neurology</a> <b>Gait disorders/ataxia</b> <a href="http://n.neurology.org/cgi/collection/gait_disorders_ataxia">http://n.neurology.org/cgi/collection/gait_disorders_ataxia</a> <b>Metastatic tumor</b> <a href="http://n.neurology.org/cgi/collection/metastatic_tumor">http://n.neurology.org/cgi/collection/metastatic_tumor</a> <b>MRI</b> <a href="http://n.neurology.org/cgi/collection/mri">http://n.neurology.org/cgi/collection/mri</a> <b>Parkinson's disease/Parkinsonism</b> <a href="http://n.neurology.org/cgi/collection/parkinsons_disease_parkinsonism">http://n.neurology.org/cgi/collection/parkinsons_disease_parkinsonism</a>
<b>Permissions &amp; Licensing</b>	Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at: <a href="http://www.neurology.org/about/about_the_journal#permissions">http://www.neurology.org/about/about_the_journal#permissions</a>
<b>Reprints</b>	Information about ordering reprints can be found online: <a href="http://n.neurology.org/subscribers/advertise">http://n.neurology.org/subscribers/advertise</a>

*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.

