Teaching Video NeuroImage: One Bedside Test, 2 Clinical Signs

One Vestibular, the Other Ocular Motor

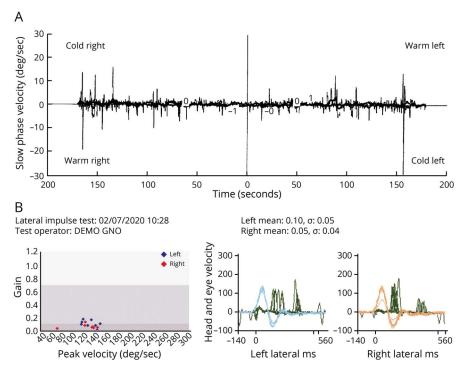
Michael Strupp, MD, Claudia Frenzel, Nicolina Goldschagg, MD, and G. Michael Halmagyi, MD.

Neurology® 2021;97:e541-e542. doi:10.1212/WNL.000000000012080

Correspondence

Dr. Strupp Michael.Strupp@ med.uni-muenchen.de

Figure Caloric Irrigation and Video Head Impulse Test



(A) Caloric irrigation and (B) video head impulse test show a severe vestibulo-ocular reflex deficit.

A 60-year-old patient had progressive imbalance. Examination revealed saccadic smooth pursuit, downbeat nystagmus, ataxia of stance and gait, and reduced vibration sense. Video head impulse and caloric testing both showed vestibulo-ocular reflex (VOR) deficits (figure). The patient has cerebellar ataxia with neuronopathy and vestibular areflexia syndrome. ^{1,2} Slow head turns while looking at an earth-fixed target produce saccadic rather than smooth compensatory eye movements (Videos 1) due to impairment of both the VOR and smooth pursuit (the visually enhanced VOR): 1 simple bedside test, 2 clinical signs, and 1 precise diagnosis.

Study Funding

No targeted funding reported.

Disclosure

M. Strupp is Joint Chief Editor of the *Journal of Neurology*, Editor in Chief of *Frontiers of Neuro-otology*, and Section Editor of *F1000*; has received speaker's honoraria from Abbott, Actelion,

MORE ONLINE



B382

Teaching slides links.lww.com/WNL/

From the Department of Neurology and German Center for Vertigo and Balance Disorders (M.S., C.F., N.G.), Ludwig Maximilians University, Campus Grosshadern, Munich, Germany; and Department of Neurology (G.M.H.), Royal Prince Alfred Hospital, University of Sydney, Australia.

Go to Neurology.org/N for full disclosures. Funding information and disclosures deemed relevant by the authors, if any, are provided at the end of the article.

Auris Medical, Biogen, Eisai, Grünenthal, GSK, Henning Pharma, Interacoustics, Merck, MSD, Otometrics, Pierre-Fabre, TEVA, UCB, and Viatris; is a shareholder of IntraBio; acts as a consultant for Abbott, Actelion, Auris Medical, Heel, IntraBio, and Sensorion; and is the distributor of M-glasses, and the positional vertigo App. C. Frenzel, N. Goldschagg, and G.M. Halmagyi do not have any disclosures. Go to Neurology.org/N for full disclosures.

Appendix Authors		
Name	Location	Contribution
Michael Strupp, MD	Department of Neurology and German Center for Vertigo and Balance Disorders (DSGZ), Ludwig-Maximilians University, Munich, Campus Grosshadern, Munich, Germany	Observation, conception, recruitment and examination of the patient, interpretation of the data, drafting the manuscript
Claudia Frenzel	Department of Neurology Ludwig-Maximilians University, Munich, Campus Grosshadern, Munich, Germany	Neuro-opthalmological examination of the patient, interpretation of the data, drafting the manuscript

Appendix	(continued)		
Name	Location	Contribution	
Nicolina Goldschagg, MD	Department of Neurology and German Center for Vertigo and Balance Disorders (DSGZ), Ludwig- Maximilians University, Munich, Campus Grosshadern, Munich, Germany	Observation, examination of the patient, taking of the video interpretation of the data, drafting the manuscript	
G. Michael Halmagyi, MD	Department of Neurology, Royal Prince Alfred Hospital, University of Sydney, Sydney, Australia	Interpretation of the data, drafting the manuscript	

References

- Szmulewicz DJ, Roberts L, Mclean CA, MacDougall HG, Halmagyi GM, Storey E. Proposed diagnostic criteria for cerebellar ataxia with neuropathy and vestibular areflexia syndrome (CANVAS). Neurol Clin Pract. 2016;6(1):61-68.
- Boesch SM, Nance MA. Intronic pentanucleotide expansion in the replication factor 1 gene (RFC1) is a major cause of adult-onset ataxia. Neurol Genet. 2020; 6(3):e436.



Teaching Video NeuroImage: One Bedside Test, 2 Clinical Signs: One Vestibular, the Other Ocular Motor

Michael Strupp, Claudia Frenzel, Nicolina Goldschagg, et al.

Neurology 2021;97;e541-e542 Published Online before print April 23, 2021

DOI 10.1212/WNL.000000000012080

This information is current as of April 23, 2021

Updated Information & including high resolution figures, can be found at:

Services http://n.neurology.org/content/97/5/e541.full

References This article cites 2 articles, 2 of which you can access for free at:

http://n.neurology.org/content/97/5/e541.full#ref-list-1

Subspecialty Collections This article, along with others on similar topics, appears in the

following collection(s): **All Neurotology**

http://n.neurology.org/cgi/collection/all_neurotology

Gait disorders/ataxia

http://n.neurology.org/cgi/collection/gait_disorders_ataxia

Vertigo

http://n.neurology.org/cgi/collection/vertigo

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 © 2021 American Academy of Neurology. All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.

