Bedside Head Impulse Test: A Useful Tool for Patients With Sensory Ataxia

Stefano Tozza, MD, Andrea Cortese, MD, PhD, Aniello Iovino, MD, Marcello Esposito, MD, PhD, Natalia Dominik, MSc, Rosa Iodice, MD, and Fiore Manganelli, MD

Neurol Genet 2021;7:e541. doi:10.1212/NXG.0000000000000541

Correspondence
Dr. Tozza
ste.tozza@gmail.com

Figure
Brain MRI of CANVAS Patient

Brain MR T1-weighted, midsagittal image shows cerebellar vermian atrophy. CANVAS = cerebellar ataxia, neuropathy and vestibular areflexia syndrome.

Case Summary

An 85-year-old man suffered from a 20-year history of idiopathic sensory neuronopathy (figure). Neurologic examination was characterized by severe sensory ataxia needing bilateral support...
during walking, subtle dysarthria, and reduced sensation for all modalities. Bedside head impulse test (HIT) revealed vestibular areflexia (video 1), arising suspicion of cerebellar ataxia, neuropathy, and vestibular areflexia syndrome (CANVAS), then confirmed by the presence of biallelic expansion in RFC1 gene.1 Clinical sensory involvement can be the only manifestation in some CANVAS patients,2 and HIT, although overlooked in neurologic examination, should be performed in all patients with sensory ataxia to raise suspicion of CANVAS.

**Study Funding**
A. Cortese thanks Medical Research Council (MR/T001712/1), Fondazione CARIPLO (2019-1836), Italian Ministry of Health Ricerca Corrente 2018-2019 and 2020 and the Inherited Neuropathy Consortium (INC) for grant support.

**Disclosure**
The authors declare no financial or other conflicts of interest. Go to Neurology.org/NG for full disclosures.

**Publication History**
Received by *Neurology: Genetics* October 2, 2020. Accepted in final form October 29, 2020.

**Appendix Authors**

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stefano Tozza, MD</td>
<td>Department of Neuroscience, Reproductive and Odontostomatlogy Science, University of Naples Federico II, Italy</td>
<td>Design and conceptualized study, acquisition and analyzed the data, and drafted the manuscript for intellectual content</td>
</tr>
<tr>
<td>Andrea Cortese, MD</td>
<td>MRC Center for Neuromuscular Diseases, Department of Neuromuscular Diseases, National Hospital for Neurology and Neurosurgery, UCL Queen Square Institute of Neurology, United Kingdom; Department of Brain and Behavioral Sciences, University of Pavia, Italy</td>
<td>Analyzed the data and revised the manuscript for intellectual content</td>
</tr>
<tr>
<td>Marcello Esposito, MD, PhD</td>
<td>Department of Neuroscience, Reproductive and Odontostomatlogy Science, University of Naples Federico II, Italy</td>
<td>Revised the manuscript for intellectual content</td>
</tr>
<tr>
<td>Natalia Dominik</td>
<td>MRC Center for Neuromuscular Diseases, Department of Neuromuscular Diseases, National Hospital for Neurology and Neurosurgery, UCL Queen Square Institute of Neurology, United Kingdom</td>
<td>Analyzed the data and revised the manuscript for intellectual content</td>
</tr>
<tr>
<td>Rosa Iodice, MD</td>
<td>Department of Neuroscience, Reproductive and Odontostomatlogy Science, University of Naples Federico II, Italy</td>
<td>Revised the manuscript for intellectual content</td>
</tr>
<tr>
<td>Fiore Manganelli, MD</td>
<td>Department of Neuroscience, Reproductive and Odontostomatlogy Science, University of Naples Federico II, Italy</td>
<td>Design and conceptualized study and revised the manuscript for intellectual content</td>
</tr>
</tbody>
</table>

**References**
Bedside Head Impulse Test: A Useful Tool for Patients With Sensory Ataxia
Stefano Tozza, Andrea Cortese, Aniello Iovino, et al.
Neurol Genet 2021;7;
DOI 10.1212/NXG.0000000000000541

This information is current as of December 21, 2020

Updated Information & Services
including high resolution figures, can be found at:
http://ng.neurology.org/content/7/1/e541.full.html

References
This article cites 2 articles, 0 of which you can access for free at:
http://ng.neurology.org/content/7/1/e541.full.html##ref-list-1

Subspecialty Collections
This article, along with others on similar topics, appears in the following collection(s):
All Genetics
http://ng.neurology.org/cgi/collection/all_genetics
All Neurotology
http://ng.neurology.org/cgi/collection/all_neurotology
Clinical neurology examination
http://ng.neurology.org/cgi/collection/clinical_neurology_examination
Peripheral neuropathy
http://ng.neurology.org/cgi/collection/peripheral_neuropathy

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

Reprints
Information about ordering reprints can be found online:
http://ng.neurology.org/misc/addir.xhtml#reprintsus