Area Postrema Syndrome as the Initial Presentation of Alexander Disease

Florence Renaldo, François Chalard, Stephanie Valence, Lydie Burglen, Diana Rodriguez

Published Ahead of Print on July 7, 2021 as 10.1212/WNL.0000000000012462

Neurology®

The most widely read and highly cited peer-reviewed neurology journal
The Official Journal of the American Academy of Neurology

AMERICAN ACADEMY OF NEUROLOGY®

Neurology Publish Ahead of Print
DOI: 10.1212/WNL.0000000000012462

Area Postrema Syndrome as the Initial Presentation of Alexander Disease

Author(s):
Florence Renaldo, MD[1]; François Chalard, MD[2]; Stephanie Valence, MD, PhD[1]; Lydie Burglen, MD, PhD[3]; Diana Rodriguez, MD, PhD[4]

Corresponding Author:
Florence Renaldo
florence.renaldo@aphp.fr

Affiliation Information for All Authors: 1. Service de Neuropédiatrie & Centre de Référence Neurogénétique, APHP.SU, Hôpital Trousseau, Paris, France; 2. Department of Pediatric Imaging, APHP.SU, Hôpital Trousseau, Paris, France; 3. Département de génétique médicale, APHP.SU, Hôpital Armand Trousseau; Developmental Brain Disorders Laboratory Imagine Institute, INSERM UMR 1163; Paris, France; 4. Service de Neuropédiatrie & Centre de Référence Neurogénétique, APHP.SU, Hôpital Trousseau; Sorbonne Université, Inserm U1141- FHU I2-D2; Paris, France;

Contributions:
Florence Renaldo: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data; Study concept or design; Analysis or interpretation of data
François Chalard: Drafting/revision of the manuscript for content, including medical writing for content; Major role in the acquisition of data; Analysis or interpretation of data; Additional contributions: F. Chalard analyzed and interpreted the radiologic data.
Stephanie Valence: Drafting/revision of the manuscript for content, including medical writing for content; Analysis or interpretation of data
Lydie Burglen: Drafting/revision of the manuscript for content, including medical writing for content; Analysis or interpretation of data; Additional contributions: L. Burglen interpreted the genetic data.
Diana Rodriguez: Drafting/revision of the manuscript for content, including medical writing for content; Analysis or interpretation of data

Number of characters in title: 54

Abstract Word count:

Word count of main text: 100

References: 2

Figures: 1

Tables: 0

Neuroimage Legend Count: 49

Search Terms: [120] MRI, [227] All Pediatric

Acknowledgements: The authors thank the patient for granting permission to publish this information.

Study Funding: The authors report no targeted funding

Disclosures: All the authors report no disclosures relevant to the manuscript: F Renaldo reports no disclosures relevant to the manuscript.F Chalard reports no disclosures relevant to the manuscript. S Valence reports no disclosures relevant to the manuscript.L Burglen reports no disclosures relevant to the manuscript. D Rodriguez reports no disclosures relevant to the manuscript.

A 16-year-old boy presented with six years evolution of anorexia, failure to thrive, nocturnal vomiting, and dysphagia. He was exhaustively explored. Neurologic examination was normal except hoarse voice. MRI revealed a hyperintensity of the area postrema (figure).

Faced with this chronic and isolated area postrema syndrome we looked for Alexander disease rather than neuromyelitis optica spectrum disorder. GFAP gene sequencing identified a reported, *de novo*, heterozygous variant c.1290C>A;p.Arg430Arg[1].

Several patients with juvenile onset or type II Alexander disease have been reported with episodic vomiting, anorexia, and MRI lesions which can retrospectively be recognized as an impairment of the area postrema.[2]

Appendix 1: Authors

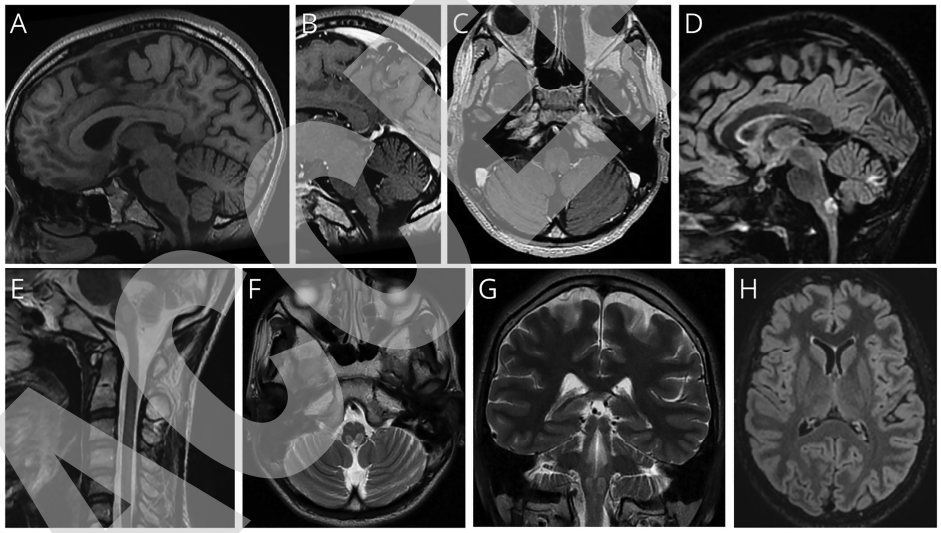
Name	Location	Contribution
Florence Renaldo, MD	Service de Neuropédiatrie & Centre de Référence Neurogénétique, APHP.SU, Hôpital Trousseau, Paris, France	designed the study, collected and analyzed the data, drafted the manuscript
François Chalard, MD	Department of Pediatric Imaging, APHP.SU, Hôpital Trousseau, Paris, France	analyzed and interpreted the radiologic data
Stephanie Valence, MD, PhD	Service de Neuropédiatrie & Centre de Référence Neurogénétique, APHP.SU, Hôpital Trousseau, Paris, France	analyzed the data, critically reviewed and revised the manuscript
Lydie Burglen, MD, PhD	Département de génétique médicale & Centre de Référence Neurogénétique, APHP.SU, Hôpital Trousseau ; Developmental Brain Disorders Laboratory Imagine Institute, INSERM UMR 1163; Paris, France	interpreted the genetic data.
Diana Rodriguez, MD, PhD	Sorbonne Université, Service de Neuropédiatrie & Centre de Référence Neurogénétique, APHP.SU, Hôpital Trousseau; Inserm U1141- FHU I2-D2 ; Paris, France	analyzed the data, critically reviewed and revised the manuscript

References:

1. Helman G, Takanohashi A, Hagemann TL, et al. Type II Alexander disease caused by splicing errors and aberrant overexpression of an uncharacterized GFAP isoform. Hum Mutat 2020; 41:1131-1137.
2. Niinikoski H, Haataja L, Brander A, et al. Alexander disease as a cause of nocturnal vomiting in a 7-year-old girl. Pediatr Radiol. 2009;39:872-875.

Legend to figure:

MRI shows lesion in the area postrema with T1-weighted hypointensity (A), contrast enhancement (B,C) and FLAIR (D) and T2-weighted (E-G) hyperintensity. Apart from a vermian lesion with FLAIR (D) hyperintensity, MRI finds no significant abnormalities of the supratentorial white matter nor basal ganglia (G,H) nor spinal cord (not shown).



Area Postrema Syndrome as the Initial Presentation of Alexander Disease

Florence Renaldo, François Chalard, Stephanie Valence, et al.

Neurology published online July 7, 2021
DOI 10.1212/WNL.0000000000012462