Teaching Video NeuroImage: Bilateral Eyelid Opening Apraxia in a Patient With Top of the Basilar Syndrome

Author(s):
Angelo Tiziano Cimmino, MD1; Francesca Vitali, MD1; Raffaele Iorio, MD, PhD1,2

Corresponding Author:
Angelo Tiziano Cimmino, angelotizianocimmino@gmail.com

Affiliation Information for All Authors: 1. Department of Neuroscience, Università Cattolica del Sacro Cuore, Rome, Italy; 2. UOC Neurologia, Fondazione Policlinico Universitario Agostino Gemelli IRCSS, Rome, Italy

Equal Author Contribution:

Contributions:
Angelo Tiziano Cimmino: 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
Francesca Vitali: 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
Raffaele Iorio: 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

Neurology® Published Ahead of Print articles have been peer reviewed and accepted for publication. This manuscript will be published in its final form after copyediting, page composition, and review of proofs. Errors that could affect the content may be corrected during these processes.
A 76-year-old woman was admitted to our emergency room for acute development of vertigo followed by loss of consciousness. Brain MRI revealed a bilateral paramedian thalamo-mesencephalic infarction due to basilar artery occlusion (Figure). The patient underwent systemic thrombolysis and mechanical thrombectomy, with complete reperfusion of the basilar artery. After the procedure, the patient was alert and oriented, and her exam demonstrated apraxia of eyelid opening (ALO) and vertical-gaze palsy (Video 1). ALO is considered a form of eyelid dystonia. Previous electromyographic studies on affected patients demonstrated either involuntary levator-palpebrae inhibition or pretarsal orbicularis-oculi muscle motor persistence. Its neuroanatomic bases are still unknown, but
there is evidence that this condition is linked to disorders of basal ganglia, rostral midbrain and frontal lobes\textsuperscript{1}. Myint et al. reported a case of ALO in isolated bilateral thalamic infarction\textsuperscript{2}, suggesting that the paramedian thalamic nuclei may have a role in the voluntary eyelid movements network.

**Figure.** Patient’s neuroimaging. Brain magnetic resonance imaging showing a bilateral paramedian thalamic (A) and mesencephalic (B) infarction in fluid-attenuated inversion recovery (FLAIR) sequences. Digital subtraction angiography showing an occlusion of the top of the basilar artery (arrow, C).
Video. Patient’s neurological examination.

[00:02]: the patient can’t open her eyes when required by the operator. Note the bilateral contraction of the frontalis muscle on attempted eye opening;

[00:05]: the patient is able to perform other voluntary movements (i.e. mouth opening and closure, tongue protrusion and lateral movements) on request;

[00:32]: the ability to keep the eyes open after forced opening exclude the presence of bilateral ptosis;

[00:42]: the absence of spasms of the orbicularis oculi muscle and triggers prompting eye closure differentiate apraxia of eyelid opening from blepharospasm;

[00:52]: the operator asks to follow his finger. Note the presence of mild ptosis and rectus medialis muscle deficit in the left eye, consistent with lesion localized in the left paramedian midbrain;

[01:08]: note the presence of vertical gaze palsy, consistent with midbrain lesion.
References


Teaching Video NeuroImage: Bilateral Eyelid Opening Apraxia in a Patient With Top of the Basilar Syndrome
Angelo Tiziano Cimmino, Francesca Vitali and Raffaele Iorio
Neurology published online December 29, 2022
DOI 10.1212/WNL.0000000000206799

This information is current as of December 29, 2022

Updated Information & Services
including high resolution figures, can be found at:
http://n.neurology.org/content/early/2022/12/29/WNL.0000000000206799.citation.full

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 © 2022 American Academy of Neurology. All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.