

Teaching Video NeuroImages: Oculo-risorius phenomenon



Roman Schniepp, MD
Berend Feddersen, MD,
PhD

Address correspondence and
reprint requests to Dr. Berend
Feddersen, Department of
Neurology, Klinikum
Grosshadern, University of
Munich, Marchioninstr. 15,
81377 München, Germany
berend.feddersen@med.uni-muenchen.de

We present a patient who was admitted to our hospital with complaints of intermittent diplopia, with incidental involuntary contraction of the muscles for elevation of both corners of the mouth during maximal lateral gaze (see video on the *Neurology*[®] Web site at www.neurology.org). This is a variation of the oculo-auricular phenomenon (OAP), which represents a central connection between the oculomotor structures in the brainstem (superior colliculus, pontine paramedian reticular formation) and the bilateral facial nuclei (retroauricular muscles).¹ In lower mammals, abduction of the eyes leads to flattening of the ear in order to provide a sufficient lateral field of view. This provides a quick orientation of the visual and auditory system to targets. In humans, the synchronization of eye and ear movements is an evolutionary relict, but in addition to selected brainstem

reflexes like the masseter and the blink reflex, it can provide a helpful tool in the topodiagnosis of brainstem lesions.²

We assume that in our case the activation of the risorius and zygomatic muscles is due to a persistent OAP. This central phenomenon should be distinguished from facial synkinesis, which is a peripheral phenomenon due to a cross-activation of 2 different peripheral branches of the facial nerve, such as eye closure with volitional movement of the mouth.

REFERENCES

1. Wilson SAK. A note on an associated movement of the eyes and ears in man. *Rev Neurol Psychiatry* 1908;6:331–336.
2. Urban PP, Marczyński U, Hopf HC. The oculo-auricular phenomenon: findings in normals and patients with brainstem lesions. *Brain* 1993;16:727–738.

Supplemental data at
www.neurology.org

From the Department of Neurology, Klinikum Grosshadern, University of Munich, Munich, Germany.
Disclosure: The authors report no disclosures.

Neurology[®]

Teaching Video *NeuroImages*: Oculo-risorius phenomenon

Roman Schniepp and Berend Feddersen

Neurology 2011;76:e42

DOI 10.1212/WNL.0b013e31820f2d55

This information is current as of March 7, 2011

Updated Information & Services	including high resolution figures, can be found at: http://n.neurology.org/content/76/10/e42.full
Supplementary Material	Supplementary material can be found at: http://n.neurology.org/content/suppl/2011/03/06/76.10.e42.DC1
References	This article cites 2 articles, 0 of which you can access for free at: http://n.neurology.org/content/76/10/e42.full#ref-list-1
Subspecialty Collections	This article, along with others on similar topics, appears in the following collection(s): Clinical neurology examination http://n.neurology.org/cgi/collection/clinical_neurology_examination Ocular motility http://n.neurology.org/cgi/collection/ocular_motility
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 © 2011 by AAN Enterprises, Inc.. All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.

