

# Teaching NeuroImages: Superior segmental optic nerve hypoplasia confirmed by optical coherence tomography

Geetha Athappilly, MD  
Victoria S. Pelak, MD

Address correspondence and  
reprint requests to Dr. Victoria S.  
Pelak, 12631 E. 17th Avenue,  
P.O. Box 6511, Mail Stop B185,  
Aurora, CO 80045  
Victoria.Pelak@UCHSC.edu

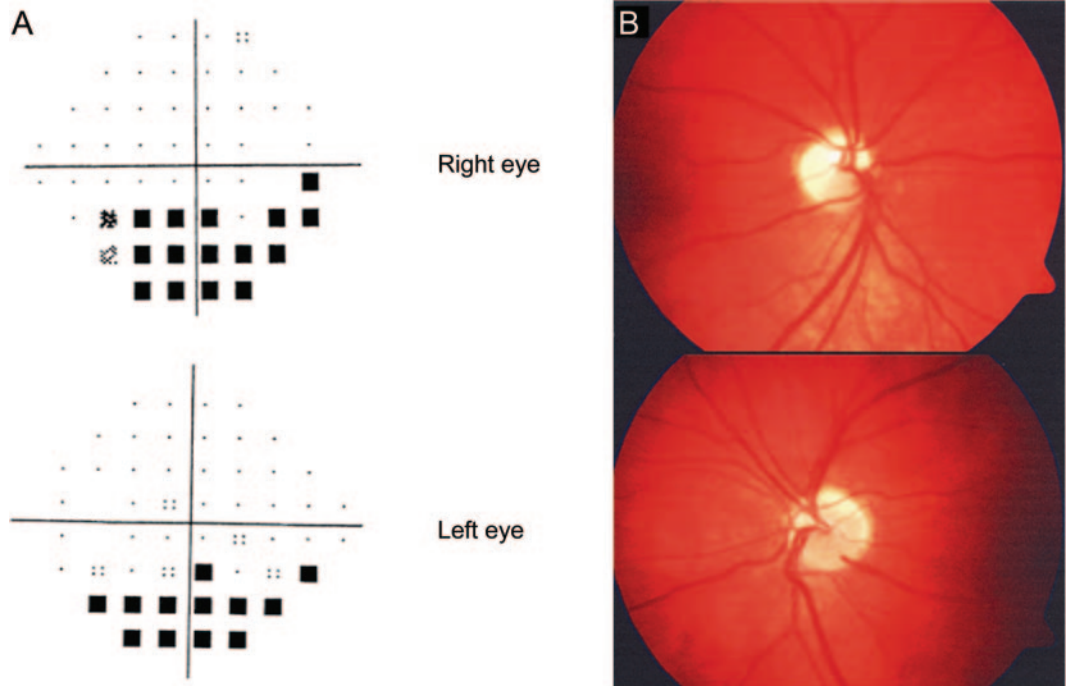
A 36-year-old woman without complaints was referred for abnormal visual fields (figure 1A). She had 20/20 vision in both eyes and a right afferent pupillary defect. Fundus examination suggested superior segmental optic nerve hypoplasia (SSONH), a congenital optic nerve disorder (figure 1B). Optical coherence tomography (OCT) of the optic nerve, which measures nerve fiber layer thickness using interferometric techniques,<sup>1</sup> showed decreased thickness of the superior segment of both nerves (figure 2). In this case, OCT provided a noninvasive and

reliable method for confirmation of SSONH suspected by inferior arcuate visual field defects and optic nerve appearance.<sup>2</sup>

## REFERENCES

1. Kahook M, Noecker RJ, Wollstein G, Schuman JS. Optic nerve head and nerve fiber layer imaging. In: Albert DM, Jakobiec FA, eds. Principles and Practice of Ophthalmology. Philadelphia, PA: WB Saunders; 2007:1–72.
2. Unoki K, Ohba N, Hoyt WF. Optical coherence tomography of superior segmental optic hypoplasia. Br J Ophthalmol 2002;86:910–914.

**Figure 1** Humphrey visual field of the patient's right and left eye

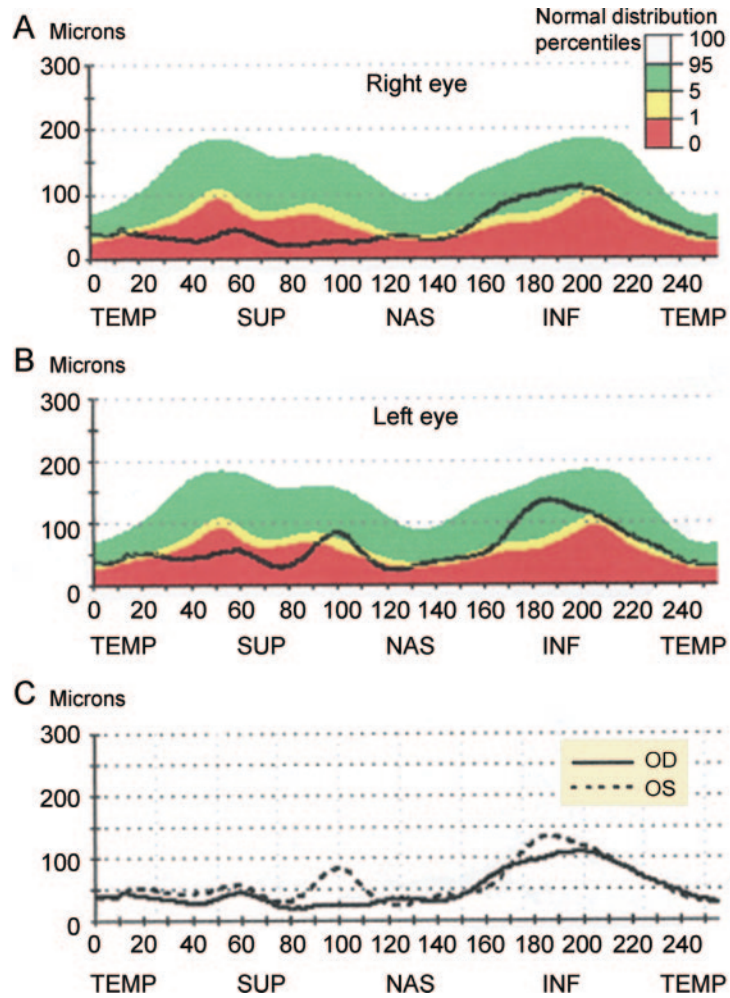


(A) Visual fields for the right eye (top) and left eye (bottom) revealed inferior arcuate defects consistent with superior segmental optic nerve hypoplasia. (B) Optic nerve photographs of the right eye (top) and left eye (bottom) showed evidence of superior segmental optic nerve hypoplasia.

From the Departments of Ophthalmology (G.A., V.S.P.) and Neurology (V.S.P.), University of Colorado Denver School of Medicine; and The Denver Veterans Affairs Medical Center (V.S.P.), Denver, CO.

*Disclosure:* The authors report no disclosures.

**Figure 2** Optic disc of the patient's right and left eye



Optical coherence tomography of the patient's retinal nerve fiber layer of the right eye (A) and left eye (B) revealed superior thinning compared to normal distribution. Right and left eye comparison (C) demonstrated more superior nerve fiber layer thinning in the right eye compared to the left eye.

# Neurology<sup>®</sup>

## Teaching *NeuroImages*: Superior segmental optic nerve hypoplasia confirmed by optical coherence tomography

Geetha Athappilly and Victoria S. Pelak

*Neurology* 2009;72:e91-e92

DOI 10.1212/WNL.0b013e3181a411f8

**This information is current as of May 4, 2009**

<b>Updated Information &amp; Services</b>	including high resolution figures, can be found at: <a href="http://n.neurology.org/content/72/18/e91.full">http://n.neurology.org/content/72/18/e91.full</a>
<b>References</b>	This article cites 1 articles, 1 of which you can access for free at: <a href="http://n.neurology.org/content/72/18/e91.full#ref-list-1">http://n.neurology.org/content/72/18/e91.full#ref-list-1</a>
<b>Subspecialty Collections</b>	This article, along with others on similar topics, appears in the following collection(s): <b>Optic nerve</b> <a href="http://n.neurology.org/cgi/collection/optic_nerve">http://n.neurology.org/cgi/collection/optic_nerve</a> <b>Visual fields</b> <a href="http://n.neurology.org/cgi/collection/visual_fields">http://n.neurology.org/cgi/collection/visual_fields</a>
<b>Permissions &amp; Licensing</b>	Information about reproducing this article in parts (figures, tables) or in its entirety can be found online at: <a href="http://www.neurology.org/about/about_the_journal#permissions">http://www.neurology.org/about/about_the_journal#permissions</a>
<b>Reprints</b>	Information about ordering reprints can be found online: <a href="http://n.neurology.org/subscribers/advertise">http://n.neurology.org/subscribers/advertise</a>

*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 . All rights reserved. Print ISSN: 0028-3878. Online ISSN: 1526-632X.

