Sean Orton, DO; Rose Anna Roantree, DO; Dulaya Santikul, DO; Thomas Liu, MD, MS, DO



0196-0644/\$-see front matter
Copyright © 2021 by the American College of Emergency Physicians.
https://doi.org/10.1016/j.annemergmed.2021.08.014

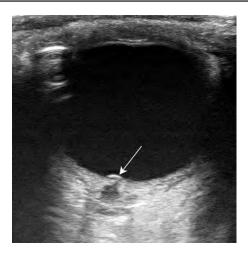


Figure 1. Ultrasound demonstrating bulging of the optic disk (arrow).



Figure 2. Optic nerve measurement with a diameter of 6.3 mm (arrow); the ill-defined borders suggest inflammation.



Figure 3. Enhancement of the left infraorbital optic nerve (arrow).

[Ann Emerg Med. 2022;79:e9-e10.]

A healthy 39-year-old man presented to the emergency department with 2 days of nontraumatic severe left eye pain and progressive visual loss to the point of blindness. Upon physical examination, the patient reported only flashes of light in the left eye, with sluggish pupillary response and painful extraocular movements. The result of slit lamp examination was unremarkable, and ocular pressures were normal. The result of right eye examination was unremarkable. An emergency physician conducted point-of-care ocular ultrasound, demonstrating evidence of papilledema and optic nerve inflammation (Figures 1 and 2).

For the diagnosis and teaching points, see page e10. To view the entire collection of Images in Emergency Medicine, visit www.annemergmed.com

IMAGES IN EMERGENCY MEDICINE

(continued from p. e9)

DIAGNOSIS:

Optic neuritis. Magnetic resonance imaging demonstrated optic neuritis (Figure 3) along with innumerable hyperintense lesions, consistent with demyelinating disease. Ultrasound can assist in the diagnosis of a wide variety of ocular pathologies. Bulging of the optic disk and an increased optic nerve diameter in patients with optic neuritis will likely be unilateral, whereas bilateral changes indicate an increased intracranial pressure.

Author affiliations: From the Department of Emergency Medicine, Garnet Health Medical Center, Middletown, NY.

REFERENCES

- 1. Ohle R, McIsaac S, Woo M, et al. Sonography of the optic nerve sheath diameter for detection of raised intracranial pressure compared to computed tomography: a systematic review and meta-analysis. *J Ultrasound Med.* 2015;34:1285-1294.
- 2. Daniel M, Restori M, Acheson J, et al. Ocular ultrasound to detect raised intracranial pressure. Pediatr Emerg Care. 2017;33:e4.
- 3. Simenc G, Ambrozic J, Prokselj K, et al. Ocular ultrasonography for diagnosing increased intracranial pressure in patients with severe preeclampsia. *Int J Obstet Anesth*. 2018;36:49-55.