

Seth R. Podolsky, MD, MS
Eitan Dickman, MD, RDMS

From the Department of Emergency Medicine, Maimonides Medical Center, Brooklyn, NY.

0196-0644/\$-see front matter

Copyright © 2008 by the American College of Emergency Physicians.

doi:10.1016/j.annemergmed.2008.06.460

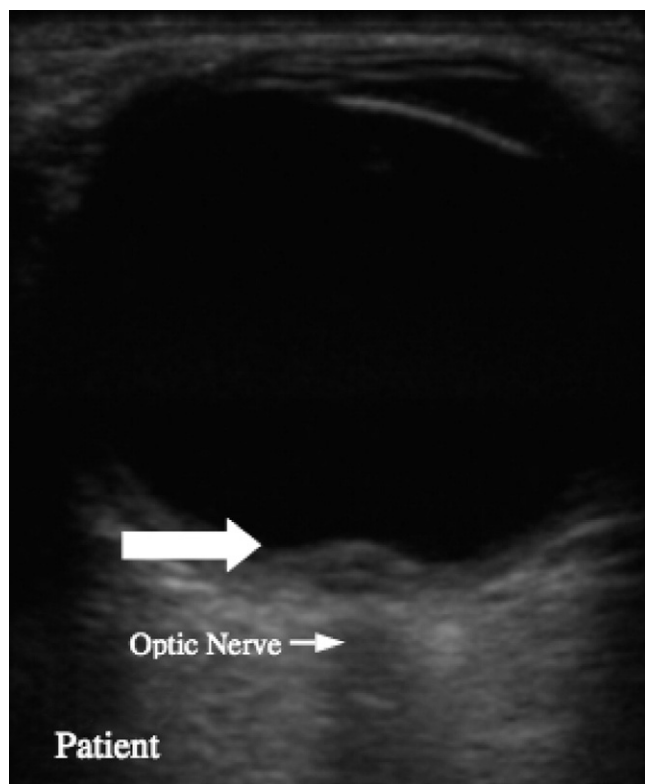


Figure 1. A bulging of the optic disc is noted (see arrow). In addition, the optic nerve sheath is widened. It was measured at 5.2 mm (measurement not shown), with the upper limit of normal for a child being 4.5 mm.¹ (There is an association between widening of the optic nerve sheath [measured 3 mm posterior to the retina] and increased intracranial pressure.)

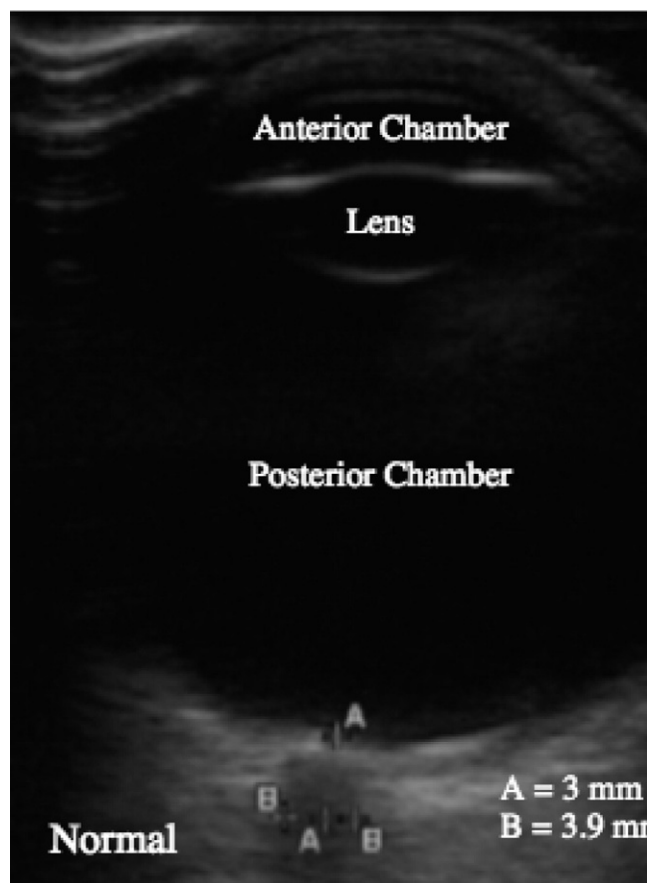


Figure 2. Normal: Measurement of a normal optic nerve sheath, as well as identification of the anterior chamber, lens, and posterior chamber. Used with permission of Seth R. Podolsky, MD, MS, Department of Emergency Medicine, Maimonides Medical Center, Brooklyn, NY.

[Ann Emerg Med. 2009;53:e1.]

This 13-year-old boy with a history of pseudotumor cerebri presented to the emergency department with partial vision loss and headache. The patient had an intermittent headache for 2 months, which was relieved with ibuprofen and worsened with noise. He had no photophobia, fever, or meningeal signs. He had 1 episode of vomiting earlier in the day. Ophthalmologic evaluation showed decreased vision in the inferior field of his right eye. Funduscopic examination revealed bilateral blurring of the disc margins, congestion of the retinal veins, and peripapillary hemorrhages. An ocular ultrasound was performed using a high frequency linear probe and the image was obtained (Figure 1).

For the diagnosis and teaching points, see page e2.

To view the entire collection of Images in Emergency Medicine, visit www.annemergmed.com

IMAGES IN EMERGENCY MEDICINE

(continued from p. e1)

DIAGNOSIS:

Papilledema. Papilledema was suspected based on the clinical history and physical examination, and it was confirmed with the ultrasonographic examination (Figure 1). Papilledema is a swelling of the optic disc caused by increased intracranial pressure. There are many reasons for increased intracranial pressure; in this case, the diagnosis was pseudotumor cerebri or idiopathic intracranial hypertension.

Teaching Points:

- A bulging of the optic disc is readily visible with ocular ultrasonography.
- There is an association between widening of the optic nerve sheath (measured 3 mm posterior to the retina) and increased intracranial pressure.
- Ocular sonography is a valuable tool for emergency physicians to diagnose papilledema. Figure 2 shows normal measurements.

REFERENCE

1. Ballantyne J, Hollman AS, Hamilton R, et al. Transorbital optic nerve sheath ultrasonography in normal children. *Clin Radiol.* 1999;54:740-742.