



**Figure 1.** Axial CT of the orbits, demonstrating an irregularly shaped globe and disruption of the sclera.



**Figure 2.** Canisters (5.5 cm long) shown fitting snugly in the tube.

[Ann Emerg Med. 2019;74:740.]

A 43-year-old man was brought into the emergency department after an “explosion” to his face. He complained of complete vision loss and pain to his left eye. Physical examination showed a nonreactive left pupil. Computed tomography (CT) of his face was performed (Figure 1). Further history revealed that he had been recreationally using the items shown in Figure 2 when one exploded.

*For the diagnosis and teaching points, see page 774.*

*To view the entire collection of Images in Emergency Medicine, visit [www.annemergmed.com](http://www.annemergmed.com).*

**Authorship:** All authors attest to meeting the four [ICMJE.org](http://www.icmje.org) authorship criteria: (1) Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND (2) Drafting the work or revising it critically for important intellectual content; AND (3) Final approval of the version to be published; AND (4) Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

**Funding and support:** By *Annals* policy, all authors are required to disclose any and all commercial, financial, and other relationships in any way related to the subject of this article as per ICMJE conflict of interest guidelines (see [www.icmje.org](http://www.icmje.org)). The authors have stated that no such relationships exist.

## REFERENCES

1. Demakis JG, Rahimtoola SH. Peripartum cardiomyopathy. *Circulation*. 1971;44:964-968.
2. Lavonas EJ, Drennan IR, Gabrielli A, et al. Part 10: special circumstances of resuscitation. *Circulation*. 2015;132(18 Suppl 2):S501-S518.
3. Levine RL, Wayne MA, Miller CC. End-tidal carbon dioxide and outcome of out-of-hospital cardiac arrest. *N Engl J Med*. 1997;337:301-306.
4. Kolar M, Krizmaric M, Klemen P, et al. Partial pressure of end-tidal carbon dioxide successful predicts cardiopulmonary resuscitation in the field: a prospective observational study. *Crit Care*. 2008;12:R115.
5. Briggs BD, Sheldon DB, Beecher HK. Cardiac arrest: study of a thirty-year period of operating room deaths at Massachusetts General Hospital, 1925-1954. *JAMA*. 1956;160:1439-1444.
6. Paradis NA, Martin GB, Rivers EP, et al. Coronary perfusion pressure and the return of spontaneous circulation in human cardiopulmonary resuscitation. *JAMA*. 1990;263:1106-1113.
7. Boczar ME, Howard MA, Rivers EP, et al. A technique revisited: hemodynamic comparison of closed- and open-chest cardiac massage during human cardiopulmonary resuscitation. *Crit Care Med*. 1995;23:498-503.
8. Takino M, Okada Y. The optimum timing of resuscitative thoracotomy for non-traumatic out-of-hospital cardiac arrest. *Resuscitation*. 1993;26:69-74.
9. Alzaga-Fernandez AG, Varon J. Open-chest cardiopulmonary resuscitation: past, present and future. *Resuscitation*. 2005;64:149-156.

## IMAGES IN EMERGENCY MEDICINE

(continued from p. 740)

### DIAGNOSIS:

*Whippit explosion and globe rupture.* The patient sustained a left globe rupture from the explosion of a nitrous oxide canister. Although their intended use is the production of whipped cream (hence the term “whippit”), they are abused for their euphoric, anxiolytic, and analgesic effects. Nitrous oxide canisters are readily available in many stores and online.

One method of dispensing the nitrous oxide gas involves using a “cracker” (the silver item in Figure 2). A cracker has a spike in the inner lid that, when the lid is closed, punctures the canister and releases the gas. A typical canister contains nitrous oxide under a pressure of 725 lb/inch<sup>2</sup>. Because the intoxication from a single canister lasts only 30 to 60 seconds, it is common for a person to use more than 100 canisters in a single day, creating ample opportunity for mishap. However, traumatic injury is exceedingly rare.<sup>1,2</sup> More common are the sequelae of chronic abuse. Nitrous oxide binds to the cobalt moiety on vitamin B12, creating a functional B12 deficiency that presents as ataxia, peripheral neuropathy, and megaloblastic anemia.

**Author affiliations:** From the Department of Emergency Medicine, University of California San Francisco, San Francisco, CA (Chow, Garcia, Repplinger); and the California Poison Control System, San Francisco Division, San Francisco, CA (Garcia, Repplinger).

### REFERENCES

1. Tavare AN, Li D, Hare SS, et al. Pneumomediastinum and pneumorachis from recreational nitrous oxide inhalation: no laughing matter. *Thorax*. 2018;73:195-196.
2. Yakoob RA, Al Dweik N, Wani HU, et al. Esophageal rupture caused by compressed nitrous oxide. *Endoscopy*. 2015;47(suppl 1UCTN):E189-E190.