

**Commentary on:** Ely SF, Hirsch CS. Asphyxial deaths and petechiae. J Forensic Sci 2000;45(6):1274–1277.

Sir:

This paper (1) is an excellent review of the literature on conjunctival and facial petechial hemorrhages and contains a well reasoned delineation of the physiologic mechanism of their development. The disassociation of this phenomenon from hypoxia is long overdue. Asphyxia, a fuzzy and obsolescent term with no clear definition, should be expunged from the medical vocabulary. It is defined as “insufficient respiration causing lack of oxygen and excess carbon dioxide in blood from inhaled gases or *choking*.” Choking is defined as strangulation, stifling, or suffocation.

It should be pointed out that most of us veterans of this specialty, in particular, those of us who have read Luke’s paper (2), who studied the tourniquet test in medical school, and who have carefully observed both clinical and postmortem petechiation (3) have already reached these conclusions. Nevertheless, we all have observed the strong association of neck, facial, and conjunctival petechiation with strangulation, which is a common form of “asphyxial” death, as well as fixed thoracic compression and inverted suspension (4).

Accordingly, the authors’ final conclusion, while “asphyxia” remains a term in current usage, should have been that asphyxial and hypoxic states, *with the exception of strangulation and fixed thoracic compression*, are not associated with head and neck petechiation. In court testimony, therefore, it is fully justified to invoke facial and conjunctival petechial hemorrhages as corroborative evidence in these “asphyxial” conditions.

Their phrase defining facial and conjunctival petechiation, “purely mechanical vascular phenomenon unrelated to asphyxia or hypoxia,” does not hold true for strangulation and fixed thoracic compression, since although not caused by the hypoxia *per se*, it has a strong association with the “asphyxiation” mechanism of these injuries.

The qualifying use of the term “asphyxia” such as “asphyxia due to drowning” or asphyxia due hanging” should be avoided. When a physiologic mechanism needs to be invoked for deaths in which interference of respiration has occurred, “respiratory insufficiency” is the most appropriate term. For death certification “drowning,” “hanging,” “strangulation,” “suffocation,” “fixed thoracic compression,” and “impaction of pharynx by foreign body” all stand as definitive causes of death on their own without further qualification.

## References

1. Asphyxial deaths and petechiae, Ely SF, Hirsch CS. J Forensic Sci 2000;45(6):1274–7.
2. Conjunctival petechiae. Luke JL. N England J Med 1971 May 13: 284(19):1101.
3. Hemostasis and thrombosis in the clinical laboratory. Corriveau DM, Fritsma GA. Philadelphia; Lippincott Company, 1988.
4. Death by reverse suspension. Am J Forensic Med Pathol 1993, Mar;14(1):87–8.

Dimitri L. Contostavlos, M.D.  
1760 Holmes Drive  
West Chester, PA

## Authors’ Response

Sir:

Facial and conjunctival petechiae support the diagnosis of any disease or injury that impairs or obstructs venous return from the face while permitting continued cephalic arterial circulation. Such petechiae are unrelated to hypoxia *per se*. Period!

If we understand the fourth paragraph of Dr. Contostavlos’ letter, he endorses the confusion of correlation with causality. We disagree.

Susan F. Ely, M.D.  
Charles S. Hirsch, M.D.  
Office of Chief Medical Examiner  
520 First Avenue, New York, N.Y.