



Regarding “Fatal air embolism in hospital confirmed by autopsy and postmortem computed tomography”

Vladimir Živković¹ · Danica Cvetković¹ · Slobodan Nikolić¹ 

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We read with interest the article by Edler et al. entitled “Fatal air embolism in hospital confirmed by autopsy and postmortem computed tomography” [1], which describes a case of unusual fatal air embolism in an 83-year-old woman. The authors mentioned several autopsy findings indicating air embolism, one of them being air locks in cerebral vessels. In this paper Fig. 7 shows small bubbles of air, clearly visible in the cerebral vessels [1]. However, air locks in these – pial vessels, cannot be taken as an indubitable sign of an air embolism.

This sign was described as a common artifact in (at least) three major textbooks. In “Knight’s Forensic Pathology” it is stated that in cases of suspected air embolism, the head should be dissected first, “not to detect air bubbles in the cortical veins, as almost every textbook erroneously states, but to look for air in the cerebral arteries”. It is also stated, in a critical manner, that “descriptions and photographs of air segments in the cerebral veins are part of the mythology of forensic pathology, handed on uncritically from one book and one author to another” and concluded that the bubbles in pial vessels are artifacts that can be seen in many routine autopsies where there is no suggestion of an air embolism being present [2]. In “Forensic Pathology” by DiMaio and DiMaio, it is explained that the process of removing the skull cap, cutting through the dura, and putting traction on the brain to see the cerebral circulation might introduce air bubbles into the circulation, and therefore, the presence of a few air bubbles in the cerebral circulation does not necessarily indicate an embolus

[3]. Finally, Spitz and Fisher’s “Medicolegal Investigation of Death” states that “an interrupted blood column, i.e. fragmentation of the blood line in... the arteries of the meninges or elsewhere in the body, is often artifactual and must not be regarded as evidence of air embolism” [4].

In the case presented by Edler et al. air embolism is undoubtedly confirmed by postmortem computed tomography, a positive test for cardiac air embolism at autopsy, and by microscopic examination – intravascular air locks were observed in the lungs. However, air locks in cerebral – pial vessels seen at the autopsy were also unadvisedly presented as a sign of air embolism, which might mislead some less experienced forensic pathologists, especially if it were presented as a sole “proof” of an air embolism. This is an artifact, described in major textbooks, and should be regarded in this way.

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✉ Slobodan Nikolić
bobanvladislav@yahoo.com; slobodan.nikolic@med.bg.ac.rs

¹ Institute of Forensic Medicine, University of Belgrade – School of Medicine, 31a Deligradska str, Belgrade 11000, Serbia