

Author's Response

Sir:

The following is a response to the commentaries by Drs. Coldiron (*J. Forensic Sci* 2003;48:271) and Coleman and Lawrence (*J. Forensic Sci* 2003;48:697):

Our dermatological colleagues should recognize that there are semantic differences between "tumescent liposuction," "tumescent anesthesia," and "tumescent technique" as used by the broad array of clinicians. Concurrent use of general or intramuscular anesthesia has been used by some of our surgical colleagues (1–3). In our article, we used the term "tumescent liposuction" in reference to the fact that a bolus of fluid and medication is inserted into the surgical site. Hanke and Coleman (4) speak of "semitumescent liposuction" when general anesthesia is used. Webster's dictionary describes "tumescent" as a swelling. Thus, to us, the term "tumescent liposuction" is a generic concept. We prefer that our dermatological colleagues use the term "tumescent techniques as described by Klein" (5) so that any ambiguity can be avoided.

Notwithstanding the differences in our individual concepts of the terms, in the article we emphasized that other causes of death following liposuction must be considered. General anesthesia would not likely cause sepsis, necrotizing fasciitis, cellulitis, toxic shock syndrome, or hyperelectrolytemia. It is true that Cases 1 and 2 received concurrent general anesthesia. However, we have recently learned that Case 3 received only a small dose of sedation intramuscularly (Dilaudid and Vistaril) and only 15 mg of Valium intravenously during the surgery. The remainder of the procedure was performed according to the technique described by Klein (4,5).

Cases 1 and 3 revealed severe pulmonary fat embolization. One might argue that the concurrent anesthesia prompted this event, but that event is unlikely; and that notion would need further proof.

Forensic pathologists are charged with explaining the cause of death in these cases. They need to be aware of the spectrum of possibilities and to work up the cases extensively. This was the major thrust of our article. We suggested to our colleagues that they should search for severe pulmonary fat embolization by using the osmium tetroxide stain on postmortem tissue. This stain can also be used on formalin fixed archival materials. It is possible that some deaths alleged to the use of general anesthesia may, in fact, be due to pulmonary fat emboli.

We did not suggest that the dose of lidocaine should be 7 mg per kg. We stated that 7 mg/kg was the dose to combat arrhythmias. Further, we did state that clinicians have used 35 mg/kg without mishap. Klein (6,7) recommends no greater than 55 mg/kg in obese patients, yet higher doses unfortunately have been used by some clinicians. Forensic pathologists need to obtain postmortem analyses of lidocaine in these cases.

We appreciate that our surgical colleagues in dermatology and plastic surgery have established ongoing guidelines (8,9,13) for liposuction procedures. It may be that the recent reductions (10–12) in morbidity and mortality in liposuction surgery can be attributed to the guidelines. In fact, they limit the procedure and reduce the incidence of poor case selection, extensive surgery, multiple procedures at one time, and poor postoperative evaluation.

We trust that the article will enlighten forensic scientists and pathologists so that they can evaluate these cases in depth. Thus, we maintain that our article has merit and is not misleading.

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