

Letter to the Editor—Artifactual Vitreous Methanol Concentration

Sir:

Vitreous humor can be a useful postmortem specimen to test for drugs. (1–3) While the vitreous may seem to be anatomically protected from circulation after death, it has been shown that formaldehyde may permeate vitreous in the process of embalming. (4) Embalming fluids usually contain other chemicals, however, one of which may be methanol. This ingredient rarely poses a problem in postmortem assays, but created an interesting artifact in a case we recently encountered.

The decedent was a 50-year-old white male who died unexpectedly at home. An autopsy was ordered. As the small town in which he lived did not maintain a morgue, the autopsy was to be performed in a local funeral home. Because the decedent had a history of hepatitis C, the funeral director requested that the body be embalmed pending autopsy. Unfortunately, there was a miscommunication with the mortician, and blood samples were not saved for toxicology.

At autopsy, there was a dissection of the anterior aorta, which was ruled the cause of death. Vitreous was the only body fluid available for drug screening. Gas chromatography showed a high concentration of methanol, SI 106 mmol/L (340 mg/dL). This analysis suggested that the decedent had consumed methanol. Scene investigators found no evidence of methanol-containing products

in his home, however, and none of his family or friends reported symptoms suggestive of antemortem intoxication. On follow-up with the funeral director, it was found that the embalming product used in the decedent contained 9% methanol by weight.

The present case demonstrates that methanol, like formaldehyde, can enter the vitreous and reach high concentrations during the course of embalming. It is useful to know this fact when analyzing vitreous from an embalmed body, and to know whether the embalming product contained methanol, in order not to misdiagnose antemortem methanol poisoning.

References

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