

Letters to the Editor

Discussion of Practical Approach to Investigative Ethics and Religious Objections to Autopsy

Dear Sir:

The article by Mittleman et al. [1] exemplifies what is wrong with our government, medicine and to a great degree, our society. Apparently, it is now necessary to form committees to decide if an action is ethical or not. Or is the committee merely a device to get out of personal responsibility; the making of a decision that is unpopular or one the physician really thinks is wrong but will go along with it if backed up by a committee?

I'm curious about the composition of the committee described in the article. Why an Orthodox Rabbi? Why not a Reform or a Conservative? What about a Moslem cleric. And, an attorney in a committee on ethics (I'm sorry, I couldn't resist this low blow)? Apparently one must be a committee or have a Ph.D. in philosophy or ethics nowadays before one can make an ethical decision. Physicians apparently aren't competent to do that.

Just as bad as the concept of a committee to decide what is ethical is the decision as to whether to perform or not perform an autopsy based on a family's religious or philosophical concepts. I may be mistaken, but I thought there was separation of State and Church in this country. If a family requests that I not perform an autopsy because of either religious or philosophical reasons, I will honor that request as long as I am not practicing bad medicine.

The cases used in this article to illustrate the functioning of the committee, in my opinion, demonstrate that the road to hell is paved with good intentions. The first case was the best example. It involves a 6-year-old boy found dead at the bottom of a family's swimming pool. Drowning is a diagnosis of exclusion. This case needed an autopsy. Maybe the boy drowned. Maybe somebody hit him over the head and dumped him in the pool. Maybe the child has massive internal injuries from being beaten to death, but showed no external evidence of trauma. In my experience, 10% of all children dying of blunt traumatic injuries show no evidence of injury externally. If you want to make a diagnosis of drowning, you have to do an autopsy.

Some of the other "non-mandated" autopsies should virtually be "mandated." I've had "obvious" witnessed motor vehicle accidents turn out to be homicides, drug deaths, or even natural deaths. In regard to the mandated cases, one day someone is going to argue why perform an autopsy in a homicide if the cause of death is "obvious." In a recent homicide case with international overtones, in a large east coast city, a victim of an alleged political assassination was not autopsied for religious reasons.

In my opinion, if a Medical Examiner requires an "ethical committee" to tell them what to do, then they shouldn't be practicing medicine. The other problem is what the "heck" is ethical? Select an appropriate committee and anything is ethical—euthanasia, child molestation, genocide, etc.

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Reference

- [1] Mittleman, R. E., Davis, J. H., Kasztl, W., and Graves, W. M., "Practical Approach to Investigative Ethics and Religious Objections to Autopsy," *Journal of Forensic Sciences*, Vol. 37, No. 3, May 1992, pp. 824-829.

Discussion of Practical Approach to Investigative Ethics and Religious Objections to Autopsy

Dear Sir:

Mittleman et al. [1] have offered a comprehensive plan for dealing with the controversial subject of religious objection to autopsy. Their exposure to a large Jewish population in the State of Florida has prompted them to recommend a method that can be used by other death investigators confronted with similar problems. We have previously addressed the ethical dilemmas related to this subject and the need to satisfy the goals of the medical examiner and the needs of the community [2].

Along with the recommendations made by the Dade County group, we present the following proposals for consideration in order to preserve the integrity of medicolegal death investigation and protect the rights of third parties: (1) Death certificates should include a category specifically designated for the objection to autopsy on religious grounds or otherwise; (2) A form releasing the medical examiner from liability for not performing an autopsy should be signed by the next-of-kin and entered into the record. The form should clearly state that the benefits of the autopsy were explained to the next-of-kin, but, because of religious objection, consent for autopsy was denied; (3) In contrast to the Dade County group [3], we believe that laymen, such as rabbis, should be prohibited from entering the autopsy room during the surgical procedure. Public health concerns and other issues of liability and confidentiality must be taken into consideration by the medical examiner. Instead, a physician designated by the family and approved by the county attorney would be permitted to observe the postmortem procedure; and (4) In homicide cases, efforts should be made to conduct a complete autopsy within the scope of Jewish law and without compromising the judicial process. Incomplete autopsies may leave questions unanswered and create new problems at trial.

Concern for insurance companies and other third parties must also be taken into consideration. It should be explained to families that insurance death benefits may be contested and/or denied if an autopsy is not performed. An exhumation/autopsy at the family's expense may be required at a later date to determine the actual cause and manner of death. In our experience, families have been known to change their minds when confronted with these issues and economic realities.

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- [2] Boglioli, L. R. and Taff, M. L., "Religious Objection to Autopsy: An Ethical Dilemma for Medical Examiners," *American Journal of Forensic Medicine and Pathology*, Vol. 11, March 1990, pp. 1-8.
- [3] Davis, J. H., Letters to the Editor, "Religious Objections to Autopsy," *American Journal of Forensic Medicine and Pathology*, Vol. 12, September 1991, p. 273.

Authors' Response

Dear Sir:

The Ethical Advisory Committee was formed at the request of the Florida Medical Examiner's Commission, ". . . to recommend ethical approaches to investigations in order to allay family concerns" regarding autopsies [1]. It is purely advisory and does not direct. The participants were chosen based on their interest in ethics and knowledge of law, medicine, and religion. It is essential that we understand the human response to death in order that we better serve the diversity of peoples who support the Medical Examiner System. As physicians, we should not be embarrassed or ashamed to tap our community's resources. These professionals know more than we do about our jurisdiction's various cultures, races, and religious groups. In fact, it is refreshing that this committee was not formed as a reaction to a major community uproar but, instead, to better understand how to deal with problems before they arise. Unfortunately, this is not the case in other jurisdictions where rote adherence to performance of autopsies has damaged death investigative agencies and medical examiners. An ethical advisory committee is nothing new. In fact, the American Academy of Forensic Sciences has an Ethics Committee. The participants include a physician-attorney, a Ph.D.-toxicologist, a medical examiner, and a master of science specializing in criminalistics.

Our approach is one of common sense and reason. If, after careful examination of the scene, terminal circumstances, and decedent's background, there is no suspicion of foul play nor reasonable cause to expect future unanswered questions, the need for autopsy may be alleviated if there has been religious objections. These criteria were met in Case 1 of the boy who drowned. With adequate investigation, the odds of finding hidden trauma were remote. The performance of an autopsy in the face of such strong family objections would be a failure to respond to them as human beings.

At times, the medical examiner must make unpopular decisions; but, we labor to make the right ones. These decisions should be based on proper data which may or may not include an autopsy. The mission of medicolegal death investigation is to help and serve the public—not insult it with an "all or nothing" investigative policy.

To exert one's authority regardless of the feelings, wishes, and religious beliefs of others may have been an acceptable bureaucratic response of a few decades ago. Today, however, the trend is allow concerned citizens to participate in the decision making process to achieve a better result [2].

Medical examiners, who acted in a dogmatic rote way, were instrumental in the genesis of the onerous law enacted by the New York State Legislature. This law severely restricts the power of a medical examiner to perform an autopsy over family objection. Needless to say, there is no pressure to enact such legislation in Florida due to our commitment to total service. Our policy has not affected our autopsy rate. Of the total of 17 804 total deaths of all types which occurred last year in Dade County, this medical examiner's office performed 2484 autopsies, 14% of all deaths. Very few medical examiners in the United States can equal that!

The proposals of Drs. Taff and Boglioli regarding "objection boxes" and written releases are probably overcautious, even in today's hostile legal environment. We have found that witnessed phone calls are sufficient in unusual circumstances. Usually, a one-on-one conversation between the medical examiner and family representative solves most issues. The presence of the Rabbi in the morgue also assists the family when an examination is necessary. The Rabbi is not a "layman," but a professional who is skilled at counseling and consoling the decedent's loved ones. The physician's treatment of the patient as a "whole" (that is, family included) reaches beyond the autopsy table. We have never encountered security, medical, or other problems with clergy in our morgue.

The letter by Dr. Di Maio exemplifies what is very wrong with medicine today, and that is a lack of compassion.

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- [1] Mittleman, R. E., Davis, J. H., Kasztl, W., and Graves, W. M., Jr., "Practical Approach to Investigative Ethics and Religious Objections to the Autopsy," *Journal of Forensic Sciences*, Vol. 37, No. 3, May 1992, pp. 824-829.
- [2] Osborne, D. and Gaebler, T., "Community-Owned Government: Empowering Rather than Serving, in *Reinventing Government*," Chapter 2, pp. 49-75, Addison-Wesley Publishing Co., Reading, Mass, 1992.

Determination of the Concentration of Tetramethylenedisulfotetramine in Human Blood by GC/FPD

Dear Sir:

On May 22, 1991, seven people were poisoned after eating lunch in their company cafeteria. The soup had accidentally contained the rodenticide tetramethylenedisulfotetramine (TDT). Five victims were brought to the First Teaching Hospital, affiliated with the China Medical University, 4 h later. We detected the blood concentration of the TDT by using gas chromatography (GC) with a flame photometric detector (FPD) and obtained significant results.

A SHIMADA4.ZU GC-9A gas chromatograph connected with a CR-3A integrator and column (10% SE-30, 3.1 m × 3 mm, chromosorb W AW DMCS) were used in our experiments. The conditions were: column temperature 240°C; nitrogen flow rate 40 mL/min.

To quantitate the blood concentration, pure TDT, provided by the Health and Epidemic Prevention Station of Shenyang, China, was dissolved in acetone solution at 200 µg/mL. This solution of 0.1 mL was diluted continually by acetone in multiplication and a 2 µL aliquot of each concentration was injected onto the GC, respectively. Thus, the concentration curve of chromatographic peak height vs. drug concentration was obtained for quantitative analysis.

Two mL of the blood were extracted with 6 mL benzene by shaking a vibrator for 10 min and centrifuged (3500 rpm, 10 min) to obtain a clear supernatant. This procedure was repeated once. The combined supernatant, about 11 mL, was put into a glass syringe, which was connected to a PT-series cartridge of neutral aluminum oxide (Jingyang Filter Material Plant of Hebei Province, China, content: 1 g), and passed through the cartridge at a flow rate not greater than 5 mL/min. After being dried under the stream of nitrogen at room temperature, the residue was dissolved in 100 µL acetone and 2 µL aliquot was subject to GC analysis.

The test recovery of the described extraction method. 50 µL and 25 µL of the standard solution (containing the 10 µg and 5 µg of the TDT) were added to 2 mL blood from healthy subjects. (This extraction and clean-up procedure was the same as previously described.) Then, each was injected onto the GC five times. After its peak height was compared with the concentration curve, a recovery of 94.6% was obtained ($n = 10$, $SD = 0.017$).

Using this method, the TDT blood concentrations of five patients were 0.64 µg/mL; 0.18 µg/mL; 0.15 µg/mL; 0.10 µg/mL; and 0.10 µg/mL, respectively. Figure 1 shows the

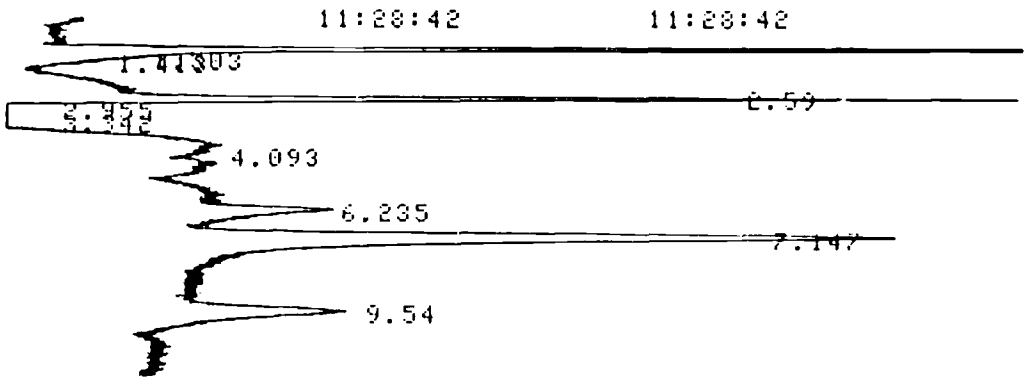


FIG. 1—The gas chromatogram for tetramethylenedisulfotetramine (7.1 min) in the poisoned blood.

gas chromatogram for the TDT (7.1 min) in the blood of one case (0.64 $\mu\text{g/mL}$). The other peaks were not identified as they are supposed to be some endogenous constituents in the blood and some medicine. The detection limit for TDT was 0.05 ng in 2 μL injection volume under these conditions.

It has been reported that benzene is better than acetone as an extraction solvent for TDT [1]. We came to the same conclusion by comparing the two reagents. As acetone is soluble in water, it brought more impurities from the blood samples and prolonged evaporation time.

The PT-series cartridge is the only one commercially available in China for solid-phase extraction. The neutral aluminum oxide used in these experiments possessed evident effect for adsorbing the chromatic impurities and the drug was not lost by this procedure.

In the victims we treated, two mildly poisoned patients (0.10 $\mu\text{g/mL}$ and 0.10 $\mu\text{g/mL}$ concentrations of the TDT) showed only general poisoning symptoms such as lightheadedness, faintness, nausea, and vomiting; two patients (0.18 $\mu\text{g/mL}$ and 0.15 $\mu\text{g/mL}$ blood concentration of the TDT) showed convulsions and the other one showed tonic convulsions and deep coma as typical symptoms. The three patients whose blood concentrations were higher than 0.15 $\mu\text{g/mL}$ had bleeding symptoms such as vomitus cruentus, nosebleed, melena, hematuria, and subcutaneous hemorrhage. However, in another case in which a 35-year-old woman attempted suicide by ingesting a large amount of TDT-containing rodenticide, no bleeding symptoms were observed. Therefore, we do not know whether the bleeding was caused by the TDT. This needs further research.

Although we have not found data on the lethal concentrations of TDT in human blood, it was reported that the blood concentration was 0.99 $\mu\text{g/mL}$ in a fatal poisoning case [1]. In our cases, each individual's concentration was lower than 0.99 $\mu\text{g/mL}$. They were all out of Danger.

Early reports on the toxicity of TDT injected i.p. into mice indicated that it was 5 to 10 times more toxic than strychnine. After local application to a rat's cerebral cortex, its activity was 70 times greater than strychnine [2]. As its LD_{50} is very low, we did not find TDT in the blood of the individuals with GC/FID. GC/FTD of GC/FPD was necessary to detect the very small amount of TDT in blood from the poisoning victims.

Tetramethylenedisulfotetramine is an extraordinarily effective rodenticide, but its use is limited because it is toxic to people [3]. According to the Merck Index, it is only an experimental poison and is rarely introduced in many pesticide manuals. However, many commercial rodenticides presently use TDT. Some rodenticides are prepared by adul-

terating the original agent with starch, thus leaving no color. The analysts of clinical and forensic chemistry will be watching anxiously for other poisoning incidents due to TDT.

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