

Letters to the Editor

Discussion of "High-Speed Extraction of Accelerants from Arson Debris"

Sir:

On a matter of safety we refer to the article "High-Speed Extraction of Accelerants from Arson Debris" by Higgins et al (Vol. 29, No. 3, July 1984, pp. 874-880).

After reading the article, we undertook a number of experiments which confirmed that a microwave oven does indeed have certain advantages over a conventional convection oven for heating fire debris samples. Unfortunately, the use of a microwave oven for this purpose is potentially hazardous.

It is well-known that the presence of metal objects in microwave ovens may result in quite energetic sparks, and we have observed this phenomenon ourselves. Metal objects of many kinds are frequently found in fire debris. If a debris sample were to contain a metal object, such as a nail, as well as a fire accelerant which gave a vapor within explosive limits then, on exposure to microwaves, an explosion could well result.

For the vapor to be within explosive limits there would need to be a substantial amount of the accelerant present and it may be that a screening device could be used to identify such debris samples before heating. If a suitable device, reliable and easy to use, is indeed available, we would be very pleased to hear of it. The ability to detect high concentrations of accelerant vapor before chromatography could also reduce the incidence of chromatography overloading and could be of particular benefit in laboratories where automatic systems such as the Perkin Elmer ATD50 are in use.

J. A. Zoro, Ph.D.
D. Manners, B.Sc.
Central Research Establishment
Home Office Forensic Science Service
Aldermaston, Reading, Berkshire,
RG7 4PN, U.K.

Authors' Response

Dear Sir:

We have had an opportunity to review the letter dated 16 April 1985 from Dr. J. A. Zoro and Mr. D. Manners of the Central Research Establishment in England and, although we certainly appreciate their remarks and are gratified to learn that they did indeed find the use of the microwave oven advantageous for heating fire debris samples, we must comment further on the "potentially hazardous" use so indicated.

First, if the procedure, as outlined in the article, is followed and the analyst applies a vacuum to the sample *before* the microwave is turned on, the concentration of volatile hydrocarbons will be brought to a minimum within a few seconds, thereby eliminating the chance that the concentration of hydrocarbon vapors will reach the lower explosive limit. Additionally, all arson debris samples received at K-Chem Laboratories are first screened with the L.I.S. Combustible Gas Detector to determine the presence or absence as well as the concentration of the hydrocarbon vapors. If a vapor level greater than 20 ppm is indicated, a

2-cm³ headspace sample is removed and injected directly into the gas chromatograph. Samples that register a vapor concentration less than 20 ppm are subjected to the microwave heating/charcoal-adsorption technique referenced above. This screening process also eliminates the possibility that vapor concentrations in excess of the lower explosive limit are being exposed to arcing in the oven.

With reference to the arcing of metal in a microwave oven, let us say first that not all metals cause arcing—it is only the denser of the ferrous metals that exhibit this phenomenon. When the sample is moist, as prescribed by the procedure, the possibility of arcing is further reduced. If, however, arcing does occur (and if it does, it will happen immediately), the oven should be turned off and the metal object removed. There are a number of metal detectors available on the market that could be used to screen samples before heating for the presence of metal objects contained therein, but more importantly it should be remembered that the majority of the ferrous metal objects encountered will not arc during their exposure to the microwaves because of the fact that their structural integrity has been altered as a result of the fire.

The microwave oven technique has been in use at K-Chem Laboratories for the past three years, and, during that time, thousands of samples have been heated in the microwave oven without incident.

Michael K. Higgins
Kathleen M. Higgins
K-Chem Laboratories
46 Clayton St.
Boston, MA 02122

Discussion of “Fatal Malignant Hyperthermia as a Result of Ingestion of Tranlycypromine (Parnate®) Combined with White Wine and Cheese”

Dear Sir:

The case report by Doctors Mirchandani and Reich is of interest to clinicians and forensic scientists; however, I feel that it is also potentially misleading. The authors suggest first that the combination of tranlycypromine, white wine, and cheese—with the implication that the dosage of tranlycypromine was clinically routine—caused the patient’s death. Second, they imply that the toxic reaction involved is common enough to justify extreme caution when using this and other monoamine oxidase inhibitors (MAOI). My reading of their case report makes the first proposition unclear; my understanding of and experience with a wide variety of psychopharmacologic agents causes me to disagree with the second.

First, there is every indication that this patient was not taking routine doses of tranlycypromine. The blood level on hospital admission was on the order of ten times that expected in routine patients (although not nearly so high as that obtained in patients with massive overdose). Just as important, the authors tell us nothing about the type of cheese which was apparently ingested, although their own references describe differences of 500-fold (“from 4 to 2170 $\mu\text{g}/\text{g}$ ”) among cheeses.

My concern is that this tragedy may be *overinterpreted* to the detriment of both patients and clinicians. Although the MAOI are not our “first line” of treatment for most forms of depression, they are quite useful for many patients, and do not deserve the almost phobic avoidance that sprung from case reports a few decades ago. Similarly, psychiatrists and other qualified clinicians who work with these medications in an appropriate and conserva-

tive manner should not be made to feel vulnerable to criticism or liability on the basis of one or two case reports. MAOIs are like most other medications used by psychiatrists and other physicians (for example, digitalis, insulin): available scientific knowledge should be used to weigh the benefits of their use against potential risks to the patient.

William H. Reid, M.D., M.P.H.
Associate Professor of Psychiatry and
of Medical Jurisprudence and Humanities
Director of Education and Training
Nebraska Psychiatric Institute
602 S. 45th St.
Omaha, NE 68106

Authors' Response

Dear Sir:

Since the letter of Dr. Reid has raised clinical issues, a psychiatric clinician who has intimate knowledge of this case has been consulted in preparing this response. Dr. Reid is critical of the implication that the dosage of Parnate[®] (tranylcypromine) caused this patient's death. Both autopsy findings and clinical history leave no doubt that indeed the combination of Parnate, white wine, and cheese did cause the patient's death. A thorough postmortem examination failed to reveal an anatomical cause of death. The patient's husband gave a history that Saturday at 9:30 p.m. the couple purchased a bottle of white wine and went to a "bring your own party" where they remained until 1:00 a.m. The patient consumed an unknown amount of cheese and dip, possibly containing sour cream. The couple talked until about 3:00 a.m. at which point the patient began complaining about not feeling good and became disoriented. At 5:30 a.m. the husband noted that she was sweating profusely, seemed to have a fever. At 6:30 a.m. she was very hot, was twitching and seemed to have convulsions, but was still conscious. Within hours the patient died in an emergency room in spite of vigorous treatment efforts. It should be emphasized that we have here a 26-year-old woman who was in good physical health.

We reaffirm that the dosage of 20 to 30 mg per day, which this patient was receiving, was indeed consistent with the manufacturer's instructions (see PDR).

Dr. Reid seems to imply that our patient could have possibly died of an overdose. The fact is that the patient's blood level in the emergency room was 0.102 which is ten times less than the reported blood level of 1.0 mg/L in a nonfatal overdose.

Dr. Reid's concern that this tragedy may be overinterpreted by clinicians is misplaced. He emphasizes that "Qualified clinicians who work with these medications in an appropriate and conservative manner should not be made to feel vulnerable to criticism" neglecting to keep in mind that patients and not psychiatrists are taking this particular drug. It should be kept in mind that monoamine oxidase (MAO) inhibitors require rather complicated dietary restrictions, namely the patients have to avoid cheese, sour cream, alcoholic beverages, pickled herring, liver, canned figs, raisins, bananas, avocados, chocolate, soy sauce, the pods of broad beans, yeast extracts, yogurt, meat prepared with tenderizers, and excessive use of caffeine in any form. If one considers the usual noncompliance of patients with medical instructions in any type of treatment, one should anticipate side reactions in this patient population.

Furthermore, there are drugs available which are equally effective and are not associated

with such a high potential for adverse reactions. It is therefore our view that indeed extreme caution is indicated when using this and other monoamine oxidase inhibitors.

Haresh Mirchandani, M.D.
Lloyd E. Reich, M.D.
Emanuel Tanay, M.D.
Office of the Medical Examiner
of Wayne County
400 E. Lafayette St.
Detroit, MI 48226

MZ or DZ? Not Even Their Hairdresser Knows for Sure

Sir:

Twin studies can be enormously revealing with respect to hereditary and environmental influences on human physical characteristics. The generally greater resemblance observed within monozygotic (MZ) twin pairs, relative to dizygotic (DZ) twin pairs, across a wide variety of physical features, is consistent with (although not proof of) the contributing role of genetic factors. It was, therefore, of great interest to read Bisbing and Wolner's paper, "Microscopical Discrimination of Twins' Head Hair" (*Journal of Forensic Sciences*, Vol. 29, No. 3, July 1984, pp. 780-786), in which the individual uniqueness of human hair is demonstrated. Samples of hair from six pairs of MZ twins, nine pairs of DZ twins, one set of MZ triplets, and two twin sets of unknown zygosity were available. Using visual and microscopical examination, hair specimens were correctly matched to duplicate samples and NEVER with that of the co-twin, regardless of zygosity. Several randomly selected samples were indistinguishable from known samples that were NOT chosen from the true source, showing that "a human hair can never be associated with one person to the exclusion of all others."

The investigators did not, however, document the methods by which the zygosity of the twin pairs was established. This is a very unfortunate omission. Failure to detect MZ-DZ twin differences in resemblance for physical traits is unusual. Lack of knowledge as to how zygosity was determined raises the possibility that inaccurate assignments (especially in a sample of modest size) may be responsible for these findings. For this reason, it is quite likely that other researchers would exclude these potentially informative cases from pooled analyses.

Objective diagnosis of zygosity is provided by co-twin comparison of factors comprising the eight major red blood cell (RBC) systems. Accuracy of assignment is additionally improved by co-twin comparison of highly heritable physical features, such as fingerprint patterns and ridge count. (The utility of dermatoglyphic studies in forensic science is, in fact, acknowledged by Bisbing and Wolner.) In twin research, it is extremely important to describe the procedure by which zygosity is determined. It is suggested that the authors prepare a brief note providing this information—it will surely strengthen their very intriguing analysis.

Nancy L. Segal, Ph.D.
Post-doctoral Fellow
Minnesota Study of Twins Reared Apart
University of Minnesota
Minneapolis, MN 55455

Authors' Response

Sir:

We used the parent's designation of the twin pair's zygosity in our study. We did not concern ourselves too much with this problem for two reasons. First, we did not find that the zygosity made any difference, that is, we were able to discriminate between all the twin pairs regardless of zygosity. Secondly, our interest was not the genetics of the human hair characters, but a test of the reliability of forensic human hair comparisons. We used twins because we expected their hair to be quite similar regardless of zygosity. Those interested in the genetics should realize that some of the characteristics used for comparison are obviously environmental, for example, weathering, cleanliness, and artifacts. Dr. Segal's comments should be considered whenever twin studies are contemplated.

Richard E. Bisbing
Michael F. Wolner
Michigan State Police Laboratory
6296 Dixie Highway, P.O. Box H
Bridgeport, MI 48722

The Doctor-Patient Relationship in Psychiatry: A Threshold Issue

Sir:

Whether or not a doctor-patient relationship exists is a threshold issue that must be addressed in cases of psychiatric malpractice, professional misconduct, and confidentiality or privilege. The existence of a professional *duty* on the part of a psychiatrist is dependent on the preexistence of a doctor-patient relationship.

Although a physician is under no obligation to engage in practice or to accept professional employment, when the professional services of a physician are rendered to and accepted by another person for the purposes of medical or surgical treatment, the relation of physician and patient is created.[1].

The inception of the doctor-patient relationship may lie in a context wherein the patient's reliance follows from communications to him by the physician that he (the physician) is qualified to undertake the care and treatment of his condition [2]. These communications, usually implicit in nature, include the meaning of the physician's shingle, the location of his office, or "most simply by the use of the word 'Doctor' before his name" [2]. There are two basic legal theories to support the creation of a doctor-patient relationship: a "contract" basis (contract between the two parties, doctor and patient) and a "torts" basis (an "undertaking to perform" on the part of the doctor).

Contract Basis

The professional relationship may arise out of an express or implied agreement between the doctor and his patient. A contractual relationship may be created when a doctor agrees that he will treat the patient, under certain terms of treatment, for a specific fee [3]. This would be the usual situation. The relationship of doctor and patient is therefore consensual in such cases. The assent of the patient, provided that he is competent to give it, is essential to create the relationship [4]. Often, an implied contract may be inferred from the surrounding circumstances, such as the actual commencement of treatment, with the patient's assent assumed, along with an expectation of compensation for his services by the doctor.

Thus a contract, either express or implied, is the most common source of the doctor-patient relationship [5]. "This contract idea is not a rigid one. Usually it is an oral contract and has many implied terms. It may be evidenced by notes or cards setting down what the patient tells the psychiatrist, or by bills rendered and checks paid" [6]. But, neither the existence of a doctor-patient relationship nor the underlying duty it creates is dependent upon payment for the services of the doctor [7]. Thus, although the professional relationship and its underlying duty is certainly created when the agreement includes provision for payment of a specific fee to the psychiatrist by the patient directly, it is just as definitely created when services are performed gratuitously or at the solicitation and on the guaranty of a third person [7,8].

Torts Basis

The duty of care demanded of a doctor once the doctor-patient relationship is created is usually imposed by society through its tort law, rather than as an incident to a contractual agreement per se [9]. The duty of a psychiatrist should be viewed as a broadly based duty, dependent on a professional medical relationship, that may arise in many different contexts and give rise to rights and obligations independent of any *contract* between the parties [9]. The basis of the torts theory is that a psychiatrist, who undertakes to render care to another, thereby creates a professional relationship with a corresponding duty of care to the patient who is receiving the care [10].

The "undertaking" theory provides a satisfactory basis for the creation of a doctor-patient relationship in most medical service contexts, including those not covered by a traditional contractual agreement [9]. Where a psychiatrist demonstrates such "undertaking" by his overt conduct, courts have usually found that there was sufficient undertaking to create a doctor-patient relationship. Indeed, very little may be required to establish the existence of the doctor-patient relationship once the doctor administers aid of any kind. The existence of the doctor-patient relationship is a matter of fact, depending on whether the patient entrusted himself to the doctor's care and whether, in turn, the doctor accepted the case. The most extreme example of this kind arose out of a mere telephone conversation. A patient called in to a hospital emergency room and spoke to a doctor who offered some advice over the telephone. Although the doctor and patient had never met, a doctor-patient relationship was found as a result of the telephone contact [11]. The courts have tended to seize on almost any act beyond a mere promise in order to find a sufficient undertaking that would support a corresponding duty [12].

Limitations on the Creation of a Doctor-Patient Relationship

The law imposes some limitations on the creation of a doctor-patient relationship under certain circumstances. A medical school professor who offered advice at a professional conference to a treating doctor in regard to that doctor's own patient was held not to be liable for a malpractice action brought by the patient against the professor. The court held that no doctor-patient relationship existed between the other doctor's patient and the professor. Moreover, the court noted that imposition of liability in such a context might stifle efforts at disseminating medical information and knowledge [13].

A more frequent situation involves distinctions between a "treating" doctor and an "examining" doctor. The law requires that a doctor be retained for the purpose of care and treatment in order for a doctor-patient relationship to exist. Thus, the psychiatrist who merely carries out an evaluation, for example a court-ordered competency examination, without any expectation of rendering treatment, has not thereby created a doctor-patient relationship and is not liable for a malpractice action [14].

Case Illustration

Dr. A, a well-known psychiatrist, engaged in sexual relations with a number of his patients, involved patients in orgiastic activities with each other, and encouraged a number of his patients to indulge in drug abuse and various perverse actions in their outside lives that led to loss of jobs, disruption of families, and personal embarrassment and humiliation for them. Subsequently, some of his patients sued him for malpractice. In his defense, he claimed that they had never been "patients." He had merely organized an adult club or association dedicated to self-fulfillment and an exploration of various cultural and artistic interests, including sexual experimentation. He saw himself as a "coordinator" of these activities and denied that he had undertaken to "treat" anyone or that they were "patients." The evidence against him appeared to be strong, however, in that he had accepted monthly payment from his "patients" and had filled out medical insurance forms for them, noting their diagnoses, treatment rendered, and so on.¹

Summary

The prior establishment of a doctor-patient relationship is a threshold issue that must be addressed before a malpractice action can be brought against a psychiatrist. The same holds for proceedings brought against the psychiatrist for professional misconduct or when the issue of confidentiality or privileged communication is raised. Unless it is clear that a doctor-patient relationship had been established, the psychiatrist will not be liable and no confidentiality or privilege will exist. The legal basis for the doctor-patient relationship both in contract law and in tort law has been discussed. The limitations or exceptions to these legal guidelines was discussed as well, for example when the psychiatrist is an "evaluator" rather than a treating doctor. Finally, a case illustration was provided to show how the issue of the existence of a doctor-patient relationship played a part in a malpractice action against a psychiatrist.

Robert Lloyd Goldstein, M.D., J.D.
Member of the Faculty of the Department of
Psychiatry of the College of Physicians & Surgeons
of Columbia University School of Law, and Member
of the New York State Federal Bar
390 West End Ave.
New York, NY 10024

¹*Editorial comment:* Regarding outcome of cited case, the latest information (11 July 1985) available to the author from the New York State Office of Professional Medical Conduct (the agency that investigates and prosecutes doctors for professional misconduct, revoking licenses to practice if guilty) is that, after a number of years of hearings, testimony, procedural wrangling, etc., etc., the proceedings are still not concluded, the doctor has still not been found guilty of any charges, and the doctor still continues to practice psychiatry.

References

- [1] 45 NY JUR *Physicians and Surgeons* § 117; see also 61 AM JUR 2d *Physicians, Surgeons and Other Healers* § 96.
- [2] Dawidoff, D., *The Malpractice of Psychiatrists*, Charles C Thomas, Springfield, IL, 1973.
- [3] *Robins v. Firestone*, 308 NY 543, 127 NE2d 330.
- [4] 61 AM JUR 2d *Physicians, Surgeons and Other Healers* § 96.
- [5] King, J., *The Law of Medical Malpractice*, Appleton-Century Crofts, New York, 1977.

amine, a way to make *N*-methylamphetamines from amphetamines is given in the same *Journal* issue as the title paper [5].

James B. Ellern, Ph.D.
Department of Chemistry
University of Southern California
Los Angeles, CA 90089-1062

References

- [1] Dal Cason, T. A., Angelos, S. A., and Raney, J. K., "A Clandestine Approach to the Synthesis of Phenyl-2-Propanone from Phenylpropenes," *Journal of Forensic Sciences*, Vol. 29, No. 4, Oct. 1984, pp. 1187-1208.
- [2] Frank, R. S., "The Clandestine Drug Laboratory Situation in the United States," *Journal of Forensic Sciences*, Vol. 28, No. 1, Jan. 1983, pp. 18-31.
- [3] Ritter, J. J. and Kalish, J., *Journal of the American Chemical Society*, Vol. 70, Dec. 1948, pp. 4048-4050.
- [4] Christol, H., Laurent, A., and Mousseron, M., *Chemical Abstracts*, Vol. 56, 1962, col. no. 14132.
- [5] Clark, C. C., "The Identification of Methoxy-*N*-Methylamphetamines," *Journal of Forensic Sciences*, Vol. 29, No. 4, Oct. 1984, pp. 1065-1071.