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CASE REPORT

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An Unusual Form of Fatal Ethanol Intoxication

ABSTRACT: Forensic pathologists are very familiar with deaths due to ethanol intoxication. The overwhelming majority of these deaths are a result of the oral ingestion of ethanol. We report an unusual case of an individual who expired in his secured residence after self administration of a wine enema. Toxicology showed an ethanol concentration of 0.40 g/dL in the blood and 0.41 g/dL in the vitreous fluid. Scene investigation was of paramount importance in determining the unusual method by which the decedent absorbed the alcoholic beverage.

KEYWORDS: forensic science, toxicology, ethanol, wine enema

During the year 2003, medical examiners in the state of Florida reported 6767 drug related deaths to the Medical Examiners Commission (1). In 279 cases (4%), ethanol was determined to be the causative factor in the demise of these individuals and in 3188 cases (47%), ethanol was present but not determined to be a significant factor in the determination of the cause of death (1). These statistics are not surprising to the forensic pathologist who sees and records the acute and chronic effects of ethanol on a daily basis.

Death by acute ethanol intoxication is a relatively uncommon finding compared to the more common findings of either pharmacological interactions of ethanol with other central nervous system depressant drugs or the pathological effects of chronic ethanol consumption.

Despite the plethora of alcoholic beverages available to the consumer, one common factor is the fact that they are all manufactured for oral consumption. The authors present a unique case of an individual who died as a result of acute ethanol intoxication via rectal absorption.

Case Report

The victim was a 55-year-old white man who was last seen alive on February 21, 2004 by his co-workers. The victim spoke with his stepfather on that date and nothing unusual was noted during the conversation. The victim had no known medical conditions. On February 23, 2004, the stepfather went to the residence of the victim to perform a welfare check since no one had heard from him in a couple of days. The residence was secured and upon entrance, the stepfather found the victim lying unresponsive in a bathtub.

Scene investigation showed a nude white man lying supine in a bathtub (Fig. 1). The bathtub contained approximately 4 to 6 in. of fecal stained water. The victim's upper torso and head were out of the water, propped up against the bathtub while his feet were out of the bathtub, propped up against an opposing tiled wall. A tube of lubricant was located on the right side of the head, leaning against the bathtub and the tiled wall. The hair of the victim was dry. Rigor mortis was moderate in the neck, jaw and extremities while lividity was fixed on the posterior aspect of the body. No trauma was observed. A red enema bag was suspended from a shower curtain ring attached to the shower curtain rod. Attached to the enema bag was a length of tubing that was subsequently attached to an inflated Foley's catheter, the tip of which was located in the vicinity of the deceased perineum. A gray metal clamp and a white plastic clamp were attached to the tubing. A Foley's catheter attached to a urine bag containing urine was inserted into the urethra. On the floor adjacent to the tub were a sex toy and a syringe attached to a Foley's catheter. Three 3-L bottles of wine were on the bathroom floor; two of the bottles were empty and the remaining bottle was approximately 1/4 full. The bathroom's trashcan contained an empty tube of lubricant and numerous articles of pornography were located in the victim's bedroom.

An autopsy performed the following day showed a well-developed 74-in., 240-lb white man with no visible injuries. The shaft of the circumcised penis had eight 2.0 cm white beads embedded under the skin. Notable internal examination findings were a 610-g heart with patent coronary arteries, moderate atherosclerosis of the thoracic and abdominal aorta, pulmonary edema and congestion (right lung = 1200 g, left lung = 1110 g), and a 2080-g red-brown liver. Postmortem toxicology revealed a blood ethanol of 0.40 g/dL and a vitreous ethanol of 0.41 g/dL. No area of myocardial ischemia or infarction was identified microscopically. The cause of death was determined to be acute ethanol toxicity and the manner of death was an accident. The mechanism by which the ethanol was absorbed was determined to be via rectal absorption from the wine enema.

Discussion

From a scientific standpoint, alcohol refers to a group of organic compounds which contain a functional –OH group. For centuries, mankind has appeared to be infatuated with the manufacture, marketing and consumption of this beverage whose primary purpose

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FIG. 1—*Victim lying in bathtub containing fecal stained water with an enema bag suspended from a shower curtain ring.*

is to distort the senses and produce a feeling of euphoria in the individual.

The usual route of ingestion is oral. From the stomach, alcohol is readily absorbed and some texts suggest that up to 33% of total absorption occurs here (2). The remainder of alcohol is absorbed from the small intestines. The rate of absorption is affected by factors such as the amount and nutritional composition of previously ingested foods. The presence of food in the stomach may cause up to a 21% reduction in the peak alcohol concentration and up to a 50% increase in the mean rate of disappearance of alcohol from the blood (3,4). Foods that are high in fats tend to retard alcoholic absorption. After absorption from the stomach and small intestines, alcohol is transported to the liver via the portal vein where it is metabolized to acetaldehyde and acetic acid and then excreted in the urine (5). Over 90% of ingested alcohol is metabolized in this manner with the remainder being excreted via the lungs by diffusion into alveolar air (2).

The forensic medical literature is inundated with cases of fatalities related to ethanol consumption. These may be due to acute pharmacological intoxication, pharmacological synergy with other drugs, the psychomotor impairment it creates, acute withdrawal after prolonged consumption of large quantities of alcohol and the medical effects of chronic alcoholism (6).

The overwhelming majority of these cases are due to the oral consumption of alcohol. We present what we believe to be the first reported case in the English medical literature of an individual fatality due to rectal absorption of alcohol. We could only find one other case in the German medical literature of a fatality due to rectal instillation of alcohol (7). In this particular case, the victim administered brandy rectally due to the fact that most of his oropharynx was blocked by a neoplasm at the base of his tongue. Although a search of the English medical literature does not reveal any reports of wine enemas, the search engine "Google™" revealed approximately 9140 results. Apart from the medical indications for administering enemas (treatment of constipation, preparation of the large intestine for surgery, administration of certain medications), some individuals appear to obtain sexual gratification from their use (8). An individual who uses enemas for sexual stimulation is known as a klezmomaniac (8). To the authors' surprise, a number of web sites detail the specific equipment needed, body positions, lubrication and various recipes for solutions that can be used including beer or wine enemas. An enema kit can be easily obtained in a local pharmacy or on the Internet. It consists of an enema bag, an enema tip and a clamp. After either self or assisted insertion of the enema tip, the individual controls the flow of fluid into the rectum via the clamp. Upon completion, the individual retains the fluid in the rectum. Retention of fluid in the rectum may be assisted by using an inflatable enema tip, which functions similarly to a Foley's™ catheter. In our case, even though the tip of the Foley's™ catheter was not actually found within the rectum during the scene investigation, interpretation of other findings such as the fecal stained water in the bathtub and the enema bag lead us to strongly believe that the victim used the wine as an enema solution. To the credit of the web sites at least one of them warns the reader that the use of alcohol in an enema can result in one becoming very intoxicated and possibly dying as a result (8).

Scene investigation was of paramount importance in this case. Individuals who administer enemas are advised to place themselves in a place that will facilitate easy cleaning; a bathtub is an ideal location. Also needed is a place to hang the enema bag such as a shower curtain rod, clamps to control the flow of the enema and lubricants. All of these were present in our case. Articles of pornography may or may not be present. In cases where the victim was assisted in the administration of the enema, cleanup of the scene by the assistant may deter the investigator from elucidating the true nature of the events. However, careful searching of the premises should reveal lubricants and other equipment used during the procedure.

The authors could not identify any specific reason why a person would want to simultaneously insert a Foley's™ catheter into the urinary bladder. We can only suggest that the victim either derived additional sexual pleasure from the use of the Foley's™ catheter or he anticipated the diuretic effects of the wine enema.

Bypassing the major route of alcohol metabolism via rectal absorption would result in an individual achieving higher blood

ethanol levels in a shorter time period compared to an individual who ingested the ethanol. In fact, rectal absorption of drugs is the basis for the administration of drugs such as diazepam, in individuals who need emergency management of seizures when intravenous therapy is not an option. We found one reported case in the English medical literature of a fatality from the rectal administration of cocaine and one can only wonder if in man's seemingly never ending quest to experience a state of euphoria, whether more cases of deaths from rectal administration of cocaine and other illicit drugs will be reported in the future (9).

In summary, we report what we believe to be the first case in the English medical literature of an individual fatality from the use of a wine enema. Location of the victim as well as the presence of various articles indicative of enema use is helpful in determining the mechanism of death.

References

1. http://www.fdle.state.fl.us/publications/examiner_drug_report_2003.pdf
2. Freimuth HC. Forensic aspects of alcohol. In: Spitz WU, editor. Spitz and Fisher's medicolegal investigation and death. 3rd ed. Springfield: Charles C Thomas, 1993;767–75.
3. Watkins RL, Alder EV. The effect of food on alcohol absorption and elimination patterns. J Forensic Sci 1993;38:285–91. [PubMed]
4. Jones AW, Jönsson KÅ. Food-induced lowering of blood-ethanol profiles and increased rate of elimination immediately after a meal. J Forensic Sci 1994;39:1084–93. [PubMed]
5. Baselt RC. Disposition of toxic drugs and chemicals in man. 6th ed. California: Chemical Toxicology Institute, 2002.
6. Wetli CV, Mittleman RE, Rao VJ, editors. Drugs and alcohol. In: An atlas of forensic pathology. Chicago: American Society of Clinical Pathologists. 1999;217–61.
7. Nadjem H, Ropohl D, Werp J. Todliche Alkoholvergiftung nach rektaler Alkoholinstillation. Beitr Gerichtl Med 1990;48:543–9. [PubMed]
8. http://www.enematips.com.html
9. Doss PL, Gowitt GT. Investigation of a death caused by rectal insertion of cocaine. Am J Forensic Med Pathol 1988;9:336–8. [PubMed]

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