



Case report

Complex suicide by ethanol intoxication and inhalation of fire fumes in an old lady: Interdisciplinary elucidation including post-mortem analysis of congener alcohols

L. Jungmann, M. Große Perdekamp, M. Bohnert, V. Auwärter, S. Pollak*

Institute of Legal Medicine, Freiburg University Medical Centre, Albertstraße 9, D-79104 Freiburg, Germany

ARTICLE INFO

Article history:

Received 13 December 2010
 Received in revised form 11 March 2011
 Accepted 21 March 2011
 Available online 15 April 2011

Keywords:

Complex suicide
 Alcohol intoxication
 Inhalation of fire fumes
 Congener alcohols

ABSTRACT

An 88-year-old woman committed suicide by drinking a toxic amount of highly concentrated alcohol and setting two rooms of her flat on fire. As there was not enough oxygen, the fire went out, however. At autopsy, no thermal lesions were found on the body, but soot depositions in the airways and a COHb value of 14% pointed to the inhalation of fire fumes. The ethanol concentration in femoral blood was 6.62 per mille. The gastric mucosa was fixed by the ingested alcohol and showed hardly any autolytic changes despite a post-mortem interval of five days. Congener analysis of the gastric contents and the femoral blood indicated the uptake of a fruit distillate or its foreshot.

© 2011 Elsevier Ireland Ltd. All rights reserved.

1. Introduction

In Germany, the number of completed suicides was higher in the last few years than the number of deaths caused by traffic accidents [18]. Thus, suicides account for an essential part of unnatural deaths. From the criminalistic point of view, suicide has to be differentiated from other forms of unnatural death (accident, homicide) and also from unexpected death due to a natural cause [36].

“Complex suicides” constitute a special category often giving cause for concern. The term applies to cases in which two or more suicide methods are used simultaneously or one after the other within one and the same act. They can be divided into primary (planned) or secondary (unplanned, improvised) combination forms [2,35]. In the first variant, the fatal outcome is to be guaranteed or accelerated by using two or more methods. Sometimes an additional method is only applied to make sure that death occurs without any further action even if the first method fails.

In contrast to this, an unplanned complex suicide is defined as one in which the first method fails, turns out to be unexpectedly painful or does not cause death quickly enough, so that the individual spontaneously switches to another method. For those “unplanned/secondary complex suicides”

some authors [21,29] also used the term “protracted suicide” to underline the developmental character of this form of suicide.

As a rare type, Törö and Pollak [53] described the so-called “complicated suicide”, which is characterized by a failure of the chosen suicide method so that the victim would normally survive. However, due to exceptional circumstances at the scene an unintentional secondary trauma (e.g. fall from a height after breaking of the hanging noose) occurs and causes the victim's death.

According to the literature, complex suicides account for 1.5–5.6% of all completed suicides [12,21,35,40,53]. Frequently seen combinations are e.g. the ingestion of sedatives/hypnotics in combination with hanging, drowning or pulling a plastic bag over one's head and the use of a gun combined with hanging or drowning [2,35,37].

Racette and Sauvageau [40] actually doubted, whether suicides with an additional intake of medical or illicit drugs should be classified as “complex suicides”, as substances with a sedative or hypnotic effect might have been taken just to prevent pain and not with the intention to cause a fatal intoxication.

Unusual combinations of suicide methods may include self-incineration [3,4,26,50,54], deliberately caused car collisions [24,32], the simultaneous use of two guns [17,33,34,42], sharp force injuries [14,46,47] or self-strangulation [21,30,48].

The authors report on a primary complex suicide in which the rarely combined methods of intentional alcohol intoxication and inhalation of fire fumes interacted.

* Corresponding author.

E-mail address: legalmed@uniklinik-freiburg.de (S. Pollak).



Fig. 1. Smoky sitting room, where the suicide's body was found on a sofa. A glass bottle was discovered beside her, from which a fusel-like odour emanated (detail in the left lower corner showing the bottle before its removal from the sofa). A partly burnt match was lying on the table (detail in the right lower corner).

2. Case report

2.1. Case history

An 88-year-old woman was found dead in the smoky sitting room of her single-family house by a social worker who came to see the occupant. As the woman had increasingly suffered from delusions, she should have been admitted to a psychiatric hospital on the same day. The woman was fully clothed and lay on a sofa. A fusel-like odour emanated from an empty, stoppered glass bottle beside her (Fig. 1).

According to the fire experts' investigations, the fire had been started at two different sites independently. Both times, the edge of a plastic tablecloth had been set on fire. In the sitting room, the effects of fire were essentially confined to soot deposits, whereas in the kitchen a great part of the furnishings (table, chairs, corner seating unit and PVC floor) had been partly destroyed by the flames. An incompletely burnt match was found on the sitting room table (Fig. 1).

Both fires had already gone out when the rescue team arrived. Windows and doors were shut and the resulting lack of oxygen had prevented the fire from developing into a blaze. There were no clues about a third-party involvement and no indications that the fire had been caused by a technical defect. The front door was properly locked when the social worker entered the house. No suicide note was found. The deceased had been a non-smoker.

2.2. Autopsy findings

On external inspection, the body was found to be slightly overweight (body height 154 cm, body mass 69 kg). After 5 days under refrigeration, post-mortem lividity was mostly pink with bluish-violet discolouration only on the palms and the nail beds of the fingers. Eyebrows and head hair did not show any signs of

singeing. In the nostrils and around the mouth, some blackish-grey deposits of soot were observed.

Both the pharynx and the larynx were slightly covered with soot, and in the deep airways inhaled soot particles were discernible. The intravital inhalation of fire fumes was also confirmed by a *carboxyhemoglobin* (COHb) concentration of 14%. Swallowed soot could not be demonstrated.

The gastric contents were mostly liquid. In spite of a post-mortem interval of 5 days, the gastric mucosa was surprisingly well preserved and the mucosal layer appeared macroscopically as if it had been fixed (Fig. 2). The histological examination revealed an intact tissue structure without any autolytic changes. Even the epithelial cells and the glandular tubes still showed a regular appearance (Fig. 3).

The blood alcohol concentration (BAC) amounted to 6.62 per mille in the femoral blood and 8.11 per mille in the cardiac blood (mean values of fourfold measuring by head-space gas chromatography with flame ionization detection (HS-GC-FID) and an enzyme-based (ADH) method). As the urinary bladder was empty, no alcohol determination could be performed in the urine. Death was diagnosed to have been caused by alcohol intoxication.

As pre-existing pathological findings, the autopsy revealed a hypertrophy and moderate dilatation of both the left and the right ventricle as well as signs of a chronic insufficiency of the right ventricle. Furthermore a considerable coronary arteriosclerosis, a slight myocardial fibrosis, a minor scar in the rear wall of the left ventricle, and a chronic pulmonary emphysema were found.

2.3. Analyses for ethanol and congener alcohols

In the gastric contents, the ethanol concentration was 75 g/L, which was about 10 times higher than that in the femoral blood. Analysis of heart blood, femoral blood and the gastric contents for congener alcohols was performed by means of head-space gas

Download English Version:

<https://daneshyari.com/en/article/96805>

Download Persian Version:

<https://daneshyari.com/article/96805>

[Daneshyari.com](https://daneshyari.com)