

CASE REPORT

A case of self-harm by alcohol intoxication resulted in unintended in-hospital death

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Key Clinical Message

In-hospital hanging during a confusional state from alcohol intoxication is rare. To treat cases of acute alcohol intoxication, careful observation will be needed to avoid accidental psychological reactions.

Keywords

Acute, alcohol, intoxication, self-harm, withdrawal.

Introduction

In acute alcohol intoxication, alcohol is taken abundantly in a short period, and the condition of the imbiber exceeds the normal state of being drunk. As a result, ataxia, disturbance of consciousness, coma, respiratory depression, and hypotension occur. In serious cases, it may lead to death [1].

In this report, we present the case of a patient who died from in-hospital hanging during a confusional state due to alcohol intoxication.

Case History

A 20-year-old man was transferred to our hospital by ambulance because of a disturbance of consciousness and vomiting. He had started drinking 1 h before the Emergency Medical Service was notified of his altered consciousness. His serum ethanol concentration on arrival

was 225 mg/dL, and the patient was admitted for treatment of intoxication.

During the preadmission radiographic examination, he repeatedly engaged in dangerous movements, for example trying to stand up on the stretcher, followed by periods of sleeping, shouting meaninglessly, sleeping again, and rising up. By permission obtained from the people accompanying the patient, restraint belts were applied to the patient, with his body in a lateral position to avoid airway obstruction in case the patient vomited. Considering his uncontrollable behavior, a single room was selected without ECG monitoring.

Three hours after the admission, he was found with cardiopulmonary arrest with one of the restraint belts twined several times around his neck (Fig. 1). Several parallel lines were marked without scratch wounds, suggesting self-harm. The other end of the belt was tied to the steel bar of the bed. Another belt had been taken off and was on the floor. Thirty-five minutes before, he was



Figure 1. This picture shows the patient's neck after the restraint belt was disentangled. Several parallel lines were marked without scratch wounds, suggesting self-harm.



Figure 2. The method of using restraint belts is shown. Intentional hanging, not accidental hanging, was suspected.

shouting, and his body and all extremities were tied down by restraint belts. The method of restraining the patient is shown in Fig. 2.

Resuscitation succeeded, and the initial CT showed a normal blood supply to the brain (Fig. 3). However, cerebral swelling progressed, and the patient died from resuscitation-related brain injury 1 month after the admission (Fig. 4).

Discussion

In Japan, strict legal control has recently been taken for drunken drivers because of increasing mortality following traffic (including bicycle) accident caused by drunken drivers. However, fatal accidents caused by drunken drivers occur frequently in rural areas even under these circumstances. Japan has been counted as a country with less prevalent alcohol consumption than other countries; however, under its social situations and health-care sys-

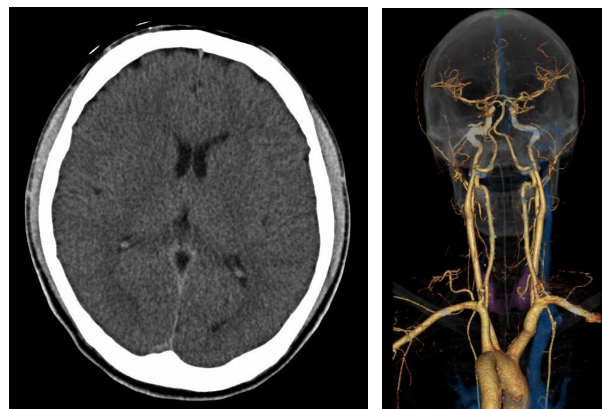


Figure 3. Initial brain CT scan after resuscitation demonstrates an unclear border between the gray matter and the white matter; however, blood supply to the brain was normal.



Figure 4. Cerebral swelling progressed, and the patient died from resuscitation-related brain injury 1 month after the admission. The CT scan shows the typical findings in resuscitation-related brain injury.

tem, many patients with alcohol intoxication are brought to the emergency department. Medicine in Japan is based on a national mandated health-care system, where all people can access easily to medical care including emergency medicine. The 2011 WHO report stated that the harmful use of alcohol kills 2.5 million people, including 320,000 young people between 15 and 29 years of age every year. The harmful use of alcohol was responsible for almost 4% of all deaths in the world, according to the estimates for 2004 [1].

In acute alcohol intoxication, alcohol is taken abundantly in a short period, and it results in a state that exceeds the normal state of being drunk. As a result,

ataxia, disturbance of consciousness, coma, respiratory depression, and hypotension may occur. In serious cases, it may lead to death. In mild cases, recovery occurs naturally if the body temperature is maintained. In cases of coma, endotracheal intubation would be needed, followed by artificial ventilation, if necessary. Generally, treatment is necessary, including avoidance of dehydration, hypothermia, hypotension, hypoglycemia, respiratory depression, metabolic acidosis, excitement, and anxiety [2, 3].

Suicide related to alcohol consumption has also been reported occasionally; however, in-hospital self-harm by hanging with restraint belts as a withdrawal from acute alcohol intoxication has not been reported previously [4–7].

The physical and mental responses typical of withdrawal syndrome are not usually seen with alcohol intoxication; therefore, physicians who treat patients with acute alcohol intoxication must pay enough attention to avoid unexpected adverse events. Usually, alcohol withdrawal syndrome follows the withdrawal from chronic alcohol abuse, not acute alcohol intoxication, and the mental response during recovery from acute alcohol intoxication is not fully understood [8]. Goldberg reported that medically complicated suicide attempters – male trauma patients with personality disorders and elderly patients with delirium, patients in delirium tremens, and medical patients with concurrent severe psychiatric disorders – require continuous observation. Substance abuse is also included in these conditions [9]. This case was not considered to be a medically complicated suicide attempter, however, closer observation would be required to avoid self-harm event.

The following list includes several factors that make it difficult to treat acute alcohol intoxication in the usual emergency unit, especially under the Japanese health-care system. Patients tend to be younger, and they are difficult to control when excited or violent. Reasonable consideration from these patients cannot be expected. Various mental responses may appear that are usually determined by more factors than simply the amount of alcohol consumption, and it differs in each case; therefore, it is difficult to standardize the treatment. Symptoms that appear during withdrawal from alcohol differ in each case. When considering in-hospital treatment, we must be concerned about the inconvenience of other patients and continuously observe the intoxicated patients. Considering these

problems, our policy for treating acute alcohol intoxication is as follows: (1) Accompanying person who drank alcohol with the patient must attend the patient during hospitalization. (2) Medical intervention must not be performed by single staff alone. (3) The police must be contacted immediately in case of violence. (4) The patient must be under constant surveillance.

Social consensus opposing excess alcohol consumption is needed. With these social circumstances, we can offer more appropriate treatment to patients with acute alcohol intoxication, even those with underlying disease. We strongly recommend that each hospital develop a strategy for treating patients with acute alcohol intoxication that is suitable for that hospital's situation.

Conflict of Interest

None declared.

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