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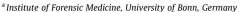


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### **Short Communication**

# Strangulation - Suicide at the wheel

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## ARTICLE INFO

Article history:
Received 5 August 2015
Received in revised form 30 October 2015
Accepted 1 November 2015
Available online 2 November 2015

Keywords: Car Strangulation Hanging Ligature strangulation Suicide at the wheel

#### ABSTRACT

In cases of suicide at the wheel mostly velocity is used to cause death by a single occupant vehicle crash against a fixed roadside object or collision with other vehicles. A further well known mode of death is e.g. carbon monoxide poisoning. In the recent years several cases of vehicle assisted ligature strangulation resulting even in decapitation have been reported. However, cars are also used in rare cases just as places for a suicide by hanging or ligature strangulation. Not only forensic pathologists but also police officers have to be aware of this rare type of suicide to avoid unnecessary investigations.

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#### 1. Introduction

Suicides at the wheel are a common and well known problem in forensic medicine. Already some decades ago several authors have suggested, that some road traffic accidents (RTA) are in reality suicide attempts [1–6]. However, it may be very difficult to identify cases of drivers' suicides among motor vehicle crashes since the suicidal intent is not as self-evident in such cases as e.g. in cases of hanging. Meanwhile, a number of risk factors for driver-assisted suicides have been identified (Table 1) [3].

However, other manners of suicide also use cars, such as vehicle-assisted strangulation, decapitation or carbon monoxide poisoning [2,3,7–18].

Whereas in some cases the car is used to commit suicide via velocity, using fuel or gases, in other cases a vehicle represents just the location of the suicide as it could have been committed at any other locus (Table 2). Some authors have recommended classifications of automobile related suicides (Table 3).

Cases of strangulation, hanging in the car using a rope or even suicidal strangulation by a vehicle seatbelt have also been reported [9,12,13,15].

In the recent years several cases of motor vehicle-assisted ligature strangulation causing complete decapitation have been published [7,10,11,14,16–18]. In the following, three cases of suicidal strangulation in a car or using a car for suicide shall be described.

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In two cases, at the first instance, a homicide was assumed, and especially in case 1 extensive police investigations became necessary.

#### 2. Case reports

#### 2.1. Case 1

A 27-year-old male was found dead sitting on the front driver's seat of his car (Fig. 1) with both arms beside his trunk. The doors of the car were closed and locked. Around his neck and the headrest was lying a plastic coated rope which was knotted at the back of the neck behind the headrest. In the knot, a metal stick had obviously been used to twist the rope tightly (Fig. 2). The 79 cm long and 4 mm thick rope had been knotted behind the headrest. In the knot, a 24.5 cm long metal stick had been twisted four times thus producing a second knot. The man was clothed normally. The man was known to have connections to the local drug scene and had been drug dependent some years ago. He had obviously been living in his car. He had lost much of his body weight during the previous months and had already mentioned to commit suicide.

#### 2.1.1. Main autopsy findings

Body of a 27 year old man.
Body height 177 cm, body weight 72.4 kg.
Corresponding to the coated electrical rope, a deep 4 mm wide strangulation mark was noted at the front of his neck.



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Table 1

Risk factors associated with driver's suicides.

- males
- age between 25 and 34 years
- single occupant crash
- non-wearing of seat belts
- · head-on collision
- single vehicle crash (towards a tree or pole)
- collision against a heavy goods vehicle
- absence of skid marks or other evidence for a loss of control over the vehicle
- alcohol intoxication/abuse
- · significant recent psychological stress
- mental disorders (such as depression) and previous suicide attempt(s)
- impulsivity and low distress tolerance personality trait

(According to Henderson, Joseph, 2012).

**Table 2** Suicide at the wheel

Suicide at the wheel.	
Vehicle used for suicide	Vehicle just location of suicide
<ul> <li>vehicle assisted decapitation</li> <li>carbon monoxide poisoning</li> <li>suicidal traffic crash</li> <li>suicidal burning (car fire)</li> </ul>	<ul><li>intoxication</li><li>burning</li><li>strangulation</li><li>shooting</li></ul>

#### Table 3

Classification of automobile related suicides.

Suicide with a motor vehicle as integral part of the process [9]

Cases fall into seven categories were the deceased individuals had used:

- Vehicle exhaust to cause fatal carbon monoxide toxicity
- The speed and mass of their own vehicle to inflict lethal injuries, i.e. driving a vehicle into a stationary object at speed, or driving over a cliff
- Speed and mass of another vehicle to sustain lethal injuries, i.e. stopping in front of a large vehicle moving at speed, stopping a car on train tracks
- The weight of vehicle to assist drowning
- Vehicle inflammability to assist self immolation
- Vehicle fixtures (e.g. seatbelts) or ropes for hanging and ligature strangulation
- The vehicle used to set up a crash situation as a backup to suicide by other means.

(According to Byard and James [9]).



Fig. 1. Position of the deceased on the driver's seat with the rope around the neck.



Fig. 2. Rope behind the headrest and a metal stick within the knot.

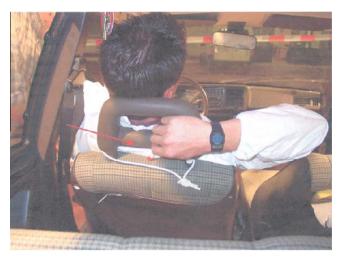


Fig. 3. Reconstruction: self strangulation found to be possible.

Small superficial haemorrhages of the right sternocleidomastoid muscle at its front aspect.

Small haemorrhage of the thyroid capsule.

Haemorrhages of the conjunctivae.

No other signs of violence, especially no indication of defence injuries.

Cause of death: suicidal ligature strangulation.

BAC: 0.01%. Toxicology negative.

A reconstruction revealed that a ligature strangulation had been carried out by his own hand with the stick used to twist the rope and that this was clearly possible (Fig. 3).

Based on all findings (locked car, absence of defence injuries, self strangulation possible) suicide was assumed by the police.

#### 2.2. Case 2

A 67-year-old man was found dead on the passenger front seat of his car (Figs. 4 and 5). The car doors were closed and the vehicle had already been seen the day before on a parking place at a motorway. The man was normally clothed. Around the neck was lying a rope, the highest point of the knot at the level of the right ear and the back of his neck. The rope was fixed to the grip of

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