



Injuries After Oldtimer Accidents: Eighteen Years Experience in the Emergency Department of a Swiss University Hospital

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In recent decades, morbidity in road traffic accidents has declined in Western Europe, mainly due to the enforcement of road safety policies and innovations in car engineering. In classic cars—so called “oldtimers” in Switzerland—these innovations in car engineering and often even seat belts are lacking, leading to a greater risk of morbidity after accidents. Thus, we reviewed our own series of victims of accidents with oldtimers who were admitted to our Level 1 Trauma Centre in Switzerland over the last 18 years. Within the 18-year study period and a total of 500,000 consultations, six documented oldtimer accidents were included in this case series. In three of the six oldtimer accidents and in all high-speed accidents, the car was overturned. In one case, the reason for this was unknown, in another a tire had suddenly burst and in a third this was triggered by evading an obstacle. Four reports contained information about a missing airbag and/or seat belt. Injuries included blunt abdominal injuries (laceration, mesenteric vessel injury), chest trauma (pneumothorax, rib fracture, scapula fracture), brain injury, and contusions. None of the patients died. In conclusion, oldtimer accidents are rare. However, pre-clinicians and clinicians treating patients after oldtimer car accidents should be aware of the specific risks—such as steering wheel injuries and consequences of trauma, i.e., extensive injuries to the head, chest and abdomen.

In 2002, the World Health Organization stated that road traffic injuries are the leading cause of injury-related deaths worldwide and a principle source of preventable unintentional injury.¹

In the Netherlands in 2009, the annual incidence of road traffic accidents was 0.8% of the population.² Up to every fourth emergency department consultation is caused by a road traffic accident and half of these are car accidents.³ In recent decades, the morbidity in road traffic accidents has declined in Germany, mainly due to the enforcement of road safety policies, e.g., seat belt use, as well as innovations in car engineering.⁴ In high-income countries, there is a greater risk of morbidity after accidents with old-

timers (also known as old timers, old-timers, classic cars)—cars that are 25 years and older—as these lack innovations in car engineering and often even seat belts (Fig. 1). Evaluation of German accident data found that oldtimers were comparable to passenger cars with respect to the accident risk per one million passenger-kilometres—but that the risk of severe injury or death was about 33% greater with oldtimers.⁵ However, to our knowledge, no study has examined emergency consultations of patients after oldtimer accidents.

We reviewed our own series of victims of accidents with oldtimers who were admitted to our Level 1 Trauma Centre in Bern over the last 18 years. A key

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Fig. 1. (A) Chevrolet Impala 1971, (B) safety belt instruction, (C) injury prone dashboard, and (D) basic safety features, three front passenger seats.

word search for “Oldtimer” with different semantic combinations was used to identify documented oldtimer accidents stored in the digital medical reports of our computerised patient databases from January 1, 2000 to January 8, 2018 (Qualicare Office, Medical Database Software, Bern, Switzerland [2000–2012] and E-Care, ED 2.1.3.0, Qualidoc AG, Turnhout, Belgium). The medical reports of the search results were anonymised, exported, and analysed in full text.

The search algorithm identified seven consultations. One consultation had to be excluded as no car accident had occurred (i.e., psychotic patient talked about oldtimers). Thus, this case series included six documented oldtimer accidents within the more than 500,000 consultations over the 18-year study period (Table 1).

The median age of the patients was 55 (range = 26–78) years and five of the six patients (83.3%) were males. Two accidents happened in 2012, the others in 2002, 2004, 2006, 2013, and 2018. In three of the six oldtimer accidents and in all high-speed accidents (over 100 km/h), the car was overturned. In one case, the reason for this was unknown, in another a tire had suddenly burst and in a third the accident was triggered by evading an obstacle. All three high-speed accidents took place in September. The three other crashes (two in June and one in September) were documented as lower speed accidents, at speeds of about 40 km/h (cases 1, 5, and 6). All of these were collisions with another vehicle. In one case, the collision vehicle was a tractor, in another a car, and in a third

Table 1. Characteristics of the identified oldtimer accidents

Case ID	Sex	Age	Year	Season	Speed ^a	Type	Safety issue	Diagnosis	Treatment
1	Male	78	2002	Late spring	Low	Car-car	None	(1) Cervical spine distortion (2) Contusion knee (left)	Conservative, ambulant
2	Male	26	2004	Summer	High	Car flip (obstacle evasion)	None	Multiple contusions, i.e., lumbar spine, arm (left)	Conservative, ambulant
3	Male	48	2012	Summer	High	Car flip (reason unknown)	No seat belt	(1) Scapula fracture (left) (2) Mild traumatic brain injury (3) Multiple CLW	Conservative, ambulant
4	Male	50	2012	Summer	High	Car flip (after tire blew)	No seat belt	(1) Stable cervical spine fracture (VI) with possible compression of nerve root C6 (left) (2) Rip fracture VII + VIII (right) (3) Small pneumothorax (right) (4) Multiple CLW	Conservative, ambulant
5	Male	67	2013	Summer	Low	Car-car	No airbag	(1) Dislocated rib series fracture II–VII (right) (2) Lung contusion with pneumothorax, 11 mm (right) (3) Scapula fracture (right)	Conservative, hospitalisation
6	Female	60	2018	Late spring	Low	Car-tractor	No airbag, no seat belt	(1) Arterial bleeding: mesenteric vessels (2) Spleen laceration (grade II) (3) Rip series fracture (both sides) (4) Nasal bone fracture (5) Multiple contusions	Emergency surgery, hospitalisation

CLW: contused lacerated wounds; ID: identity.

^aSpeed: high (anamnesic above 100 km/h); low (anamnesic below 50 km/h).

a car/tree. Four reports contained information about a missing airbag and/or seat belt (cases 3, 4, and 6). Surprisingly, patients from all high-speed accidents with overturned cars (cases 2–4) could be discharged home after observation, with diagnoses of contusions (knee, hand, and cervical/lumbar spine), fractures (scapula, rib, cervical spine), and mild head trauma with conservative outpatient treatment.

Two other patients (cases 5 and 6) were admitted to hospital. One male patient (case 5) had a serial rib fracture with pneumothorax, lung contusion as well as a scapula fracture after collision with a car and then a tree. The patient was hospitalised for pain control. The most severe accident occurred in June 2018 after frontal collision of an oldtimer with a tractor (case 6). The female patient was wearing a seat belt. The Oldtimer had no airbag. The patient suffered blunt abdominal and chest trauma through the steering wheel. The patient was transferred for an emergency operation in haemorrhagic shock caused by an arterial bleeding of the mesenteric vessels and spleen laceration. Additionally, serial rib fractures on both sides were diagnosed. None of the patients died in hospital.

Despite the limitation of the small number of identified cases and the unknown number of those unreported and undocumented, which could not be included in this analysis, some conclusions can be drawn. Firstly, oldtimer accidents at the ED are rare and represent only a small proportion of emergency consultations in a large Swiss trauma centre. Secondly, the results of our case series suggest that oldtimer accidents leading to emergency consultation might have a high rate of overturned cars. Furthermore, security devices such as airbags and seat belts were often missing, and this increases the risk of trauma such as collision with the steering wheel. This is particular important, as a recently published study showed that mortality rates in polytrauma patients with blunt chest trauma are associated with the severity of concomitant head injuries⁶—which can be found in up to 10% of patients after a car accident.⁷

Pre-clinicians and clinicians treating patients after oldtimer car accidents should be aware of the specific risks—such as steering wheel injuries and the resulting trauma, i.e., extensive injuries to the head, chest, and abdomen.

Conflicts of Interest Statement

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