Vehicular-related Traumatic Asphyxial Deaths — Caveat Scrutator

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Summary. A study of vehicular-related traumatic asphyxial deaths was performed on the case files of the Office of the Medical Examiner of Metropolitan Dade County in Miami (FL, USA) during the years from 1980 to 1984. A total of seven cases are presented in some detail. A discussion ensues, including a review of the literature, concerning this diagnosis and the caution a forensic pathologist must take in certifying such a death with so few anatomic findings.

Key words: Accidents, traffic – Traumatology, asphyxia – Asphyxial death


Schlüsselwörter: Unfälle, Straßenverkehr – Traumatologie, Asphyxie – Asphyxie, traumatisch

With the advent of motor vehicles, fatalities resulting from their usage have risen in modern society. Motor vehicle-related fatalities are a frequent occurrence in any busy medical examiner or coroner’s office. Usually, these cases have obvious causes of death with multiple blunt traumatic injuries. However, occasionally a person can die from being “pinned,” “crushed” in a vehicle, or just being in an awkward position to breathe. Such asphyxial deaths are known to the clinician [1–15] and in railway-related fatalities, but there are few reports in the forensic literature of motor vehicle accidents concerning these cases. This
study was performed to present the findings in these types of cases. Caution is recommended to all forensic pathologists who investigate traffic cases, since traumatic asphyxial deaths can have few anatomic findings and one can easily “miss” a case, thereby incorrectly certifying the cause and manner of death.

**Material and Methods**

Metropolitan Dade County is a community of 5,180 km² (2,000 square miles) and a 1984 estimated population of 1,800,000. It is a traditional resort and retirement area encompassing Miami, Florida. The Office of the Medical Examiner is empowered by statutory law to investigate those deaths of a violent, unnatural, or unexpected means that occur within the county. Some 3,500 cases are investigated annually and of these 2,800 cases are autopsied. During the years from 1980 to 1984, an estimated 1930 vehicle-related fatalities occurred within the county and were investigated by the Office of the Medical Examiner. For this study, all cases in which the cause of death was asphyxial in nature were collected for review. These seven cases are presented.

**Case Reports**

**Case 1 (M.E. no. 80–1741)**

Mr. T., a 32-year-old white man, was the driver of a “pick-up truck” traveling southbound on I-95 (Interstate) roadway’s exit ramp. He failed to manipulate a curve, and the vehicle left the roadway. It overturned and the decedent was “crushed.” It is estimated that the decedent had been “crushed” for 9 min before Fire Rescue units arrived. Cardiopulmonary resuscitative efforts were without avail.

At autopsy, small linear contusions were noted over the anterior aspect of the forehead. Contusions were also noted on the neck and the back. However, no rib, skull, or long bone fractures were observed.

Petechiae were observed in the conjunctivae and the subgaleal space. No subconjunctival hemorrhages were to be seen. Grossly, the brain and lungs were normal along with the rest of the internal viscera. Toxicologically, the blood ethanol level was 0.08%, and the Urine Emit drug screen revealed a “trace” amount of salicylates.

**Case 2 (M.E. no. 80–2885)**

Mr. F., a 19-year-old white man, was a driver of a “compact” automobile traveling northbound on State Roadway 826. The vehicle left the roadway and went onto the grassy area next to the “shoulder” of the road. It then went back on the roadway, went across three lanes of this “divided” highway, and struck the median wall. The decedent was “pinned” in an overturned vehicle. It is estimated that the victim was “pinned” for 9 min before police arrived. He was dead at the scene.

At autopsy, this moderately obese male (i.e., height 70 in., weight 250 pounds) had a few scattered abrasions exteriorly. There were a few palpebral conjunctival hemorrhages, and petechiae were observed on the epiglottis. A few scattered peri-esophageal and prevertebral hemorrhages were noted. The scalp was avulsed, and a fracture of the C6,7 cervical vertebrae was noted. No rib and long bone fractures were observed. Internally, there were pulmonary congestion and edema. There was slight subarachnoid hemorrhage of the left lateral parietal lobe of the brain along with slight uncal herniation. The abdominal organs were congested. Histologically, the lung was congested and edematous with inspissation of epithelial cells.