



Pathology Biology Section – 2007

G62 Death From Truck Tire Servicing: A Report of Three Cases and Review of the Literature

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After attending this presentation, attendees will recognize different blunt force and blast type injuries associated with truck tire servicing accidents.

This presentation will impact the forensic community and/or humanity by helping in the recognition of the different blunt force and blast type injury patterns; and helping the attendee to be better aware of OSHA regulations and manufacturers' recommendations for proper tire servicing.

Three cases of death from injuries related to truck tire repair and/or handling were identified between 1995 and 2006 at the King County Medical Examiner's Office in Seattle, WA. The decedents, all male, ranged in age from 30 years to 40 years old and had no significant medical conditions. Injuries ranged from blunt force trauma to the head, torso and extremities to blast injuries of the upper airways and lungs.

In the first case, the decedent made an unwitnessed service call to change a tire on a tractor-trailer truck parked in a lot. Evidence suggested the individual had changed the tire and was in inflating the new tire when the sidewall blew out. The decedent was struck in the face and fell backward. Autopsy showed contusions to the lungs, esophagus, posterior pharynx, and superior larynx.

In the second case, a warehouse worker was rolling semi-truck wheels and tires onto metal racks. A supervisor witnessed a tire explode projecting the wheel upward into the decedent's head, chest and arms, projecting him backwards. Autopsy showed comminuted skull fractures, cerebral lacerations, multiple rib fractures, and pulmonary contusions.

In the third case, the decedent made an unwitnessed roadside service call to change a dump truck tire on an access road. He was found supine on the ground with the tire and wheel resting across his legs. Examination of the injuries and scene reconstruction demonstrated tire explosion during inflation and upward projection of the wheel. Autopsy revealed a depressed frontal skull fracture and parietal and frontal scalp lacerations with associated cortical contusions and subarachnoid hemorrhage.

Review of the literature revealed well documented patterns of injury and death associated with explosions during tire servicing and handling. The vast majority of fatalities from all tire servicing accidents involve service work on truck tires. Blunt force injuries to the head accounted for the majority of these fatalities, while other common injuries include broken facial and upper extremity bones. Other documented injuries included "blast" or concussive injuries to air-filled organs such as bowel, lung, and tympanic membranes. This study reviewed several manufacturers' standard safety procedures as well as OSHA regulations and found a general concordance on the proper equipment needed when changing a truck tire and on the proper procedure. These include using protective gear and using safety equipment. Proper tire changing procedure was outlined as a multi-step process with clear check points to be met before proceeding onward. The prevention of these types of injuries can best be accomplished by adherence to the tire manufacturers' warnings and recommendations as well as to OSHA's tire service regulations. There is precedent for the levying of fines against businesses not in compliance with OSHA workplace safety standards.

When investigating these frequently unwitnessed deaths, particular attention needs to be paid to scene investigation, noting if proper procedures and equipment were being employed. This is important not only to rule out foul play, but for ease of reconstruction of events leading to death when correlated to injuries found at autopsy.

Blunt and Blast Force Injuries, Truck Tire Servicing Accidents, OSHA