



D11 Bilateral Perforation of the Tympanic Membranes in a Tornado Victim: An Under-Reported Injury?

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The goal of this presentation is to present the audience with autopsy findings in a tornado victim, to increase the level of awareness of tornadoes and their potentials to cause injuries.

Perforation of the tympanic membrane is a predictable outcome of drastic shifts in atmospheric pressure, creating a differential between atmospheric pressure and air pressure of the middle ear chamber. Tympanic perforation due to barotrauma is most commonly encountered in deep sea diving or exposure to bomb blasts. Lightning victims, exposed to rarified air and altered atmospheric pressure, have sustained injuries to the tympanic membrane. The enormous changes of atmospheric pressure in gale-force wind conditions such as tornadoes and hurricanes have not been reported to associate with rupture of the tympanic membrane.

Case Presentation: A reported a case of barotrauma with perforation of bilateral eardrums in a 76 year-old female, victim of a recent tornado in Maryland. The victim suffered multiple injuries after being swept up and thrown 150 yards in a F4/F5 (most severe on the Fujita- Pearson scale) tornado, with winds in excess of 275 mph. The victim was in her kitchen when the tornado struck her house. Her body was found under a pile of debris that were the remnants of her house, by a ravine, 150 yards from the cinder block foundation, the only part of the house remaining. In addition to having extensive blunt force injuries, the body was covered with mud. Mud was especially dense around the mouth, nose, and ears, an additional indication of the force produced by the pressure differential between the atmosphere and the body cavities.

Conclusion: Tornadoes harbor powerful destructive forces. Their mechanics and physics are still being explored and slowly understood. This case is reported in the hope of adding to understanding the effects of these forces on the human bodies.

Tympanic Membranes, Barotrauma, Fujita-Pearson Scale