



Pathology & Biology Section – 2005

G21 An Accident Waiting to Happen: The Chicago Porch Collapse of 2003

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After attending this presentation, attendees will understand the various injuries, both traumatic and asphyxial, associated with a structural porch collapse.

Disasters with multiple fatalities are common, and this presentation will impact the forensic community and/or humanity by assisting medical examiners and forensic pathologists to understand injuries that are sustained in a porch collapse, the mechanism of the injuries, and how best to certify the cause of deaths based on autopsy and death scene investigation findings.

The authors present a mass casualty during a party in the upscale Lincoln Park neighborhood of Chicago. On the warm summer evening of June 29, 2003, a party was underway within the upper two floors of a 3-story building that spilled out onto the two attached wooden porches. At approximately 12:30 a.m., the 3rd floor porch began to shake. Some partygoers exited the porch into the adjacent apartment. Others remained on the porch and began to jump up and down. The porch floor separated from the building and the side vertical supports and "pancaked" down onto the second floor porch. The second floor porch floor likewise separated and collapsed onto the first floor porch, which then collapsed to the ground and into a basement stairwell. Approximately 50 people were on the 2nd and 3rd floor porches at the time of the collapse; no one was on the first floor porch or in the basement stairwell.

Emergency medical services responded quickly and extricated victims from the debris. Fifty-seven people were injured at the time of the collapse, and of these, 12 were pronounced dead at the scene. One person died after surviving approximately 19 hours in the hospital. The body positions of the victims on the two decks when they collapsed are not known.

Five of the victims were female and eight were male. They ranged in age from 19 to 30 years. At autopsy, all subjects had extensive cutaneous injuries consisting of abrasions, lacerations and contusions. All subjects also had identifiable petechiae on or over more than one body surfaces, including face (12/13), conjunctiva (10/13), oral mucosa (2/13), laryngeal/epiglottic mucosa (3/13), visceral pleura (3/13) and epicardium (1/13). High cervical spine fracture/dislocation were found in 5/13. Bony fractures were identified in four subjects. Visceral injury was identified in one. The cause of death in 5/13 cases was compressional asphyxia due to porch collapse, with a significant contributing factor of cervical spine fracture/dislocation. The cause of death in 6/13 was compressional asphyxia due to porch collapse. One of 13 had extensive skull fractures with brain injury and the cause of death was multiple injuries due to porch collapse. The one delayed fatality died from anoxic encephalopathy due to compressional asphyxia due to porch collapse. The wooden porch remnants were torn down and quickly replaced with a steel porch. Structural engineering analysis of the porch was performed, with the results to be summarized during the oral presentation.

Traumatic asphyxia, originally described by Ollivier and later refined by Perthes, is currently defined as asphyxia caused by external pressure to the thorax, inhibiting respiration. The main anatomic finding is cutaneous, mucosal and serosal petechiae of the head, chest and upper extremities. The term compressional asphyxia is a more descriptive term, better understood by the lay public as a relatively gradual compression as opposed to a sudden crushing mechanism.

Following the accident, the city of Chicago revised its inspection criteria for building porches, and in a 2-month sweep, inspected 4,000 porches. Approximately 1,200 building owners were cited for construction faults. There are an estimated 300,000 porches within the city of Chicago. At the one-year anniversary of the collapse friends and family held a candlelight vigil for the victims at the collapse site. Nineteen days after the one-year anniversary of this deadly porch collapse, another smaller, similar wooden porch in the same neighborhood collapsed, causing seven people to fall 8 – 10 feet. Fortunately, no one was injured or killed.

Traumatic Asphyxia, Porch Collapse, Compressional Asphyxia