



Pathology Biology Section – 2010

G47 A Homicide Due to an Atypical Asphyxiation Tool: A Rolling Pin

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The goal of this presentation is to present an unusual case of homicide asphyxia due to an atypical compression of the neck by a rolling pin.

This presentation will impact the forensic community by discussing the rarity of the deaths due to rolling pins utilized as an asphyxiation tool, the particular features of macroscopic lesions caused by the tool, and for the importance of a careful autopsy examination with an immunohistochemical study in order to clarify the exact mechanism of the death.

Death by asphyxia can present in various different ways. It is usually determined by typical actions imputable to an asphyxial agent of compression on the neck, usually classified as throttling, strangulation, hanging, and mugging. All these tools can cause an external compression of the neck. Various atypical forms have been described, caused by rods or sticks used to compress the neck anteroposteriorly, by wooden rods with cords or screws attached to their extremities used in garroting, by violent pulling of the neck backwards in a pincer movement between the forearm and arm in mugging, or by compression of the victim's neck by the aggressor's knee or foot. In this case, the tool used to kill was a rolling pin.

On December 1, 2008, at 3:00 p.m., a man called the police and said that he found his wife dead. The police and the forensic pathologist went to the crime scene and found the body of a 74-year-old Caucasian woman inside of the kitchen of her own house. The woman lived in the house with her husband and her only son. The corpse was lying supine on the floor. She was fully and tidily dressed, the head rested on a pillow, the arms were adducted to the trunk, the forearms were on the abdomen, and the legs were extended and slightly spread.

Close to the shoulder of the woman, on the floor, under a metallic feet-stool, was a brown wood rolling pin with a length of 79.5 cm, maximum circumference of 11 cm, diameter of 3.5 cm, and weight of 530 g. The thanatological data recorded by the forensic pathologist called to the scene stated that, at the time of discovery (4.00 p.m.), the corpse did not show rigor mortis, and the hypostasis blanched with finger pressure but was congruous with body position. The rectal temperature was 35 °C and ambient temperature was 24 °C. The prosecutor arranged for an autopsy because the circumstances of the death suggested that it was an homicide, and made inquiries about the son and the husband.

A complete autopsy was performed twenty-four hours after death. The external examination showed a remarkable cyanosis of the face, lips and nails; skin petechial hemorrhages in frontal and periorbital region, and mucosal petechiae on the oral vestibule and conjunctivae. On the neck were two parallel, horizontal, oval shape, mild blue bruise areas, the first on the anterior face of the neck (measuring 2,3 cm x 1.8 cm) and the second on the left mandibular region (measuring 2,8 cm x 2.4 cm). Dissection of the neck revealed thin hemorrhages in the subcutaneous tissues and in both sternohyoid and sternothyroid muscles and right thyrohyoid muscle. The esophagus, larynx, and trachea were unremarkable. Subpericardial and subpleural petechiae were observed. The other organs did not show specific alterations except for an intense vascular congestion. Skin sections for histological examination were removed at the neck in long strips perpendicular to bruises. Sample of muscle tissue were also taken at the neck (sternohyoid, sternothyroid and thyrohyoid muscle). The histological examination showed mild hemorrhages in the cutaneous and subcutaneous tissues, and in the muscles. The stratum corneum of the epidermidis was detached and the dermis was split from the epidermis. An immunohistochemical study was performed to assess the vitality of the skin injury with antibodies to CD 15, IL15, and tryptase and the microscopical observations showed a strong positivity of tryptase, IL15 and weaker reaction to CD 15. Moreover, histological investigation of other organs showed mild cerebral and pulmonary edema, focal emphysema, and perivascular and intra-alveolar hemorrhages. The toxicological analysis was negative. According to the examination of neck bruises, autopsy findings and histological data, the mechanisms of death was consistent with asphyxia. Death was attributed to an external neck compression, and the tool that caused the death was perfectly compatible with the rolling pin found on the floor near the body. Fingerprints belonging to the son were identified on the rolling pin. Detailed examination of the crime scene and autopsy, along with the investigation of the psychological background of the son produced clear evidence that killer was the son and few days he confessed to the murder.

Rolling Pin, Athypical Asphyxia, Vitality Lesions