



Pathology Biology Section – 2006

G29 Abrasion or Gunshot Wound? The Primary Role of Forensic Pathologist

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After attending this presentation, attendees will learn about two cases of gunshot injuries that were undiagnosed by the physicians in the ER, posing a great risk of compromising both the victims' health and the Police investigations.

This presentation will impact the forensic community and/or humanity by illustrating the primary role of the forensic pathologist even in the ER, to prevent misdiagnosis of atypical lesions, especially when caused by unconventional firearms.

Although the effects of firearms on the human body are well known, in some circumstances the objective picture of the lesions may be so modest and lead to an incorrect diagnosis, unless there is a forensic expert present. The present work describes two cases in which the correct diagnosis of a shotgun entrance wound was formulated only thanks to the help of a forensic pathologist, who was called in to give an opinion of the unusual lesions observed in the patients. On 13 December 2004, at 09.00 a.m., a 35-year-old male subject, of robust build and about 180 cm tall, was brought by ambulance to the Emergency Room at Bari Hospital (S. Italy). He stated that two robbers had attacked him near his home, and one had grasped him around the neck to immobilize him. The patient was admitted to Intensive Care due to the presence of subcutaneous emphysema of the neck and superior mediastinum, causing severe breathing difficulties. He showed digitiform ecchymoses on the face, neck and upper portion of the chest. The Intensive Care specialist on duty called in the forensic pathologist for a consultation to confirm the traumatic picture and the compatibility of the lesions with the dynamics of the events referred by the patient. The forensic pathologist confirmed the presence of ecchymotic-excoriated areas in the referred sites and pointed out scratches and bruising caused by the robber's hands. An oval-shaped area appearing to be an abrasion was seen, with distinct, slightly retracted margins, 0.6 cm in diameter, with a small eschar in the lower right semicircle. The lesion was localized in the chin region, 2 cm to the left of the anterior median line. After photographing the lesion, the forensic pathologist decided to explore it in depth, introducing a needle cannula for use as a probe, which revealed the presence of an entrance into the body. X-rays of the chest and neck were performed, which demonstrated a foreign body found to be a bullet fragment, retained in the soft tissues of the anterior region of the neck just in front of the spine. After two weeks the patient underwent surgical treatment to remove the fragment, a deformed lead bullet core that was delivered into the hands of the Police. On the basis of the investigations, it was possible to conclude that the victim had been struck in the chin by a slow-moving bullet, which was partly fragmented by impact with the bone. The bullet had been fired from a small calibre firearm, likely a modified toy gun, which still had not been found at the time of this contribution.

On 5 March 2004, a 17-year-old boy accompanied his parents to a small hospital in the province of Bari. He complained of pain in the mandible, stating that he had fallen down the stairs in his home. Orthopantomography demonstrated a fracture of the mandible and avulsion of the lower incisors. Transfer to a clinic with facilities for maxillo-facial surgery was advised and the patient was taken to Bari Polyclinic for necessary care. On arrival, the forensic pathologist was called in to give an expert opinion. HA circular wound, approximately 0.7 cm in diameter, was observed in the chin region with inverted margins and a slight, ecchymotic, excoriated border. The wound was surrounded by powder tattooing and some soot, and these findings, together with the characteristics of the perforation, suggested a gunshot entrance wound. The available X-rays were reviewed and a foreign body was noted, which had not been referred to in the radiological diagnosis. The bullet, localized in the submandibular region, and surgically removed, was a 7.65 mm caliber (FMJ), deformed at the apex and with no markings (class characteristics). These elements led the investigators to conclude that, far from falling down the stairs, the victim had been hit in the face by a bullet from a modified toy gun, shot at intermediate range.

Failure to diagnose a gunshot wound is an exceptional event. Clinical medicine relies more and more on sophisticated diagnostic techniques, and procedures for quality control. However, the previous histories show that when non-conventional firearms are used, and the patient history is not suggestive of their use, clinicians may be unfamiliar with the type of wound they produce, because these events are rarely seen. In these circumstances, consultation with the forensic expert is needed to make a correct diagnosis of the wounds. This is very important to further judicial investigation procedures related to the case. In accordance with the Italian penal law code (penal procedure code, art. 331), health workers (physicians, nurses, etc) treating a wounded patient in a hospital facility are obliged to communicate the event to the Judicial Authorities without delay, if the lesions were obviously voluntarily inflicted (criminal assault) and recovery will take longer than 20 days (penal code, art. 582-583). This obligation applies even for shorter recovery times if firearms or other potentially lethal weapons were used (penal code, art. 585). Failure to notify the Authorities lays the health workers themselves open to criminal charges (penal code, art. 361 and 362). Photographic documentation of each of the above described cases will be shown during the presentation.

Forensic Pathologist, Gunshot Wound, Modified Toy Gun