A Screwdriver in the Skull

A Case Report of an Unusual Finding

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Foreign bodies are frequently encountered in forensic medicine and are mostly noted on X-rays. They can range from small-sized pellets in shotgun wounds to large objects such as metal rods or wooden planks, often seen in television documentaries with the surviving patient recounting his/her amazing story. In many cases, the foreign body is the cause of death; however, occasionally the presence of a foreign object is considered an incidental finding. In other occasions, such unexpected discovery—especially in a clear-cut case—can be the source of additional information related to the circumstances of death as well as the behavior and state of mind of the assailant.

CASE REPORT

A 62-year-old female was found dead by her husband at their flat. The body was lying in the main corridor leading to the living room and was surrounded by a pool of blood; a hammer lay next to the body. The flat was in a state of disarray, with blood stains on the walls of the main living area and evidence of an attempt at a random search of the rooms. It was later discovered that the couple had recently sold their flat with the intention to emigrate, but had not yet deposited their money in the bank. Unable to find the money during the search of the flat, the murderer chose instead to change into a suit belonging to the husband, leaving his old items together with his identification card, which was later found by the police.

At postmortem examination, the body was completely covered with blood. There was a large, deep, gaping incised wound to the neck at a level above the thyroid cartilage extending from behind the ear insertions, with complete transection of the neck structures and exposure of the cervical vertebrae (Fig. 1). The examination revealed the bodies of C4 and C5 to be broken, which was attributed to the hammer that was found next to the body. There were multiple bruises and lacerations of the scalp consistent with repeated hammer strikes together with underlying depressed fractures of the skull.

At the medial angle of the left eye, a small fresh bruise approximately 1 cm in diameter was present, but the eye appeared uninjured (Fig. 2). On opening the skull, there was minor subdural and subarachnoid hemorrhage, and, unexpectedly, a 6-inch screwdriver was found lodged in the base of the temporal lobe with no surrounding subarachnoid hemorrhage (Fig. 3). The screwdriver appeared to have passed through the orbital fissure into the cranial cavity, damaging the orbital plate. When pushed from the inside, it easily exited from the medial angle next to the bruise, pushing the globe to the lateral side (Fig. 4). On slicing of the brain, there was laceration of the brain tissue with no fresh hemorrhage.

The remainder of the examination showed no other injuries related to the assault. There was no evidence of sexual assault. Both the hammer and screwdriver belonged to the husband, who worked as a cobbler.
DISCUSSION

Since the famous stabbing of King Henry II of France through the orbit by a broken shaft of a lance (1), several other cases of intracranial foreign bodies have appeared in the literature. Knives, ice picks, nails, scissors, drills (2–4), and others have been reported following accidents and intentional acts. Screwdrivers, in particular, have been retrieved from various sites of the body, including the anus, caecum, neck, palate, and orbit (5–9).

In all of the previously mentioned cases, screwdrivers have been either accidentally implemented or used as a murder weapon. In this case, however, the screwdriver was unexpectedly found, and no marks indicative of its use were noted anywhere on the body. The presence of minor bruising around the eye and the absence of subarachnoid and intracerebral hemorrhage around the site of the screwdriver support the fact that it was inserted after death, possibly as a final act of frustration. Even though in this instance the screwdriver did not play any role in the cause of death, its discovery provides insight into the character of the killer.

The minor bruise around the inner canthus did not seem proportionate to the damage done or the method used and is consistent with a "postmortem bruise" (12). A relatively strong force must have been used to hammer the screwdriver through bone, yet leave only a small mark on the

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Fig. 1. The gaping wound in the front of the neck transecting the neck structures and exposing the cervical vertebrae.

Fig. 2. A 1-cm bruise (arrow) to the medial aspect of the left eye, with no apparent injury to the globe.

Fig. 3. A screwdriver (arrow) is found lodged in the base of the left temporal lobe.

Fig. 4. The screwdriver (arrow) is seen to have entered the medial angle of the eye adjacent to the bruise.