



Case #100

NAME Educational Activities Committee

Case provided by:

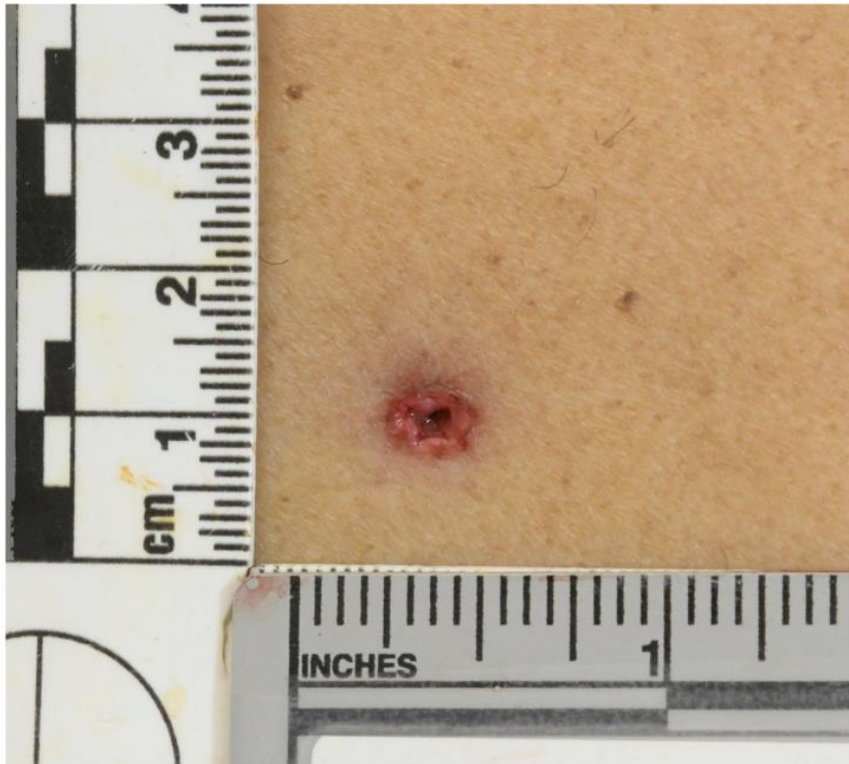
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An adult male was found dead in the living room of his residence with multiple injuries, surrounded by a pool of blood. No weapons were present near the body. At autopsy, numerous superficial and penetrating injuries were detected, involving different body regions. Internally, some of the penetrating injuries involved the sternum, lungs, heart, and aorta. Based on the findings showed in the photos, what could have caused the observed injuries?

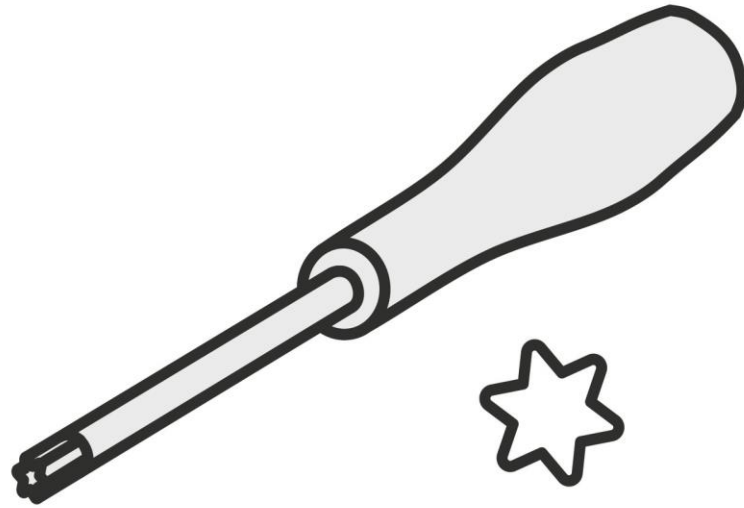
Free text answer. Be as specific as possible – e.g., “serrated blade knife” instead of just “knife”



Answer...

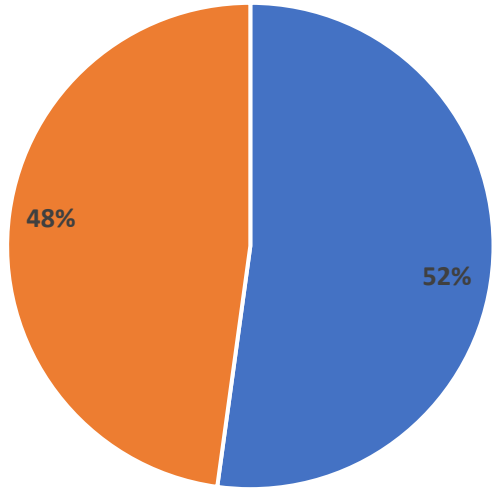
ANSWER: TORX SCREWDRIVER

Torx screwdriver

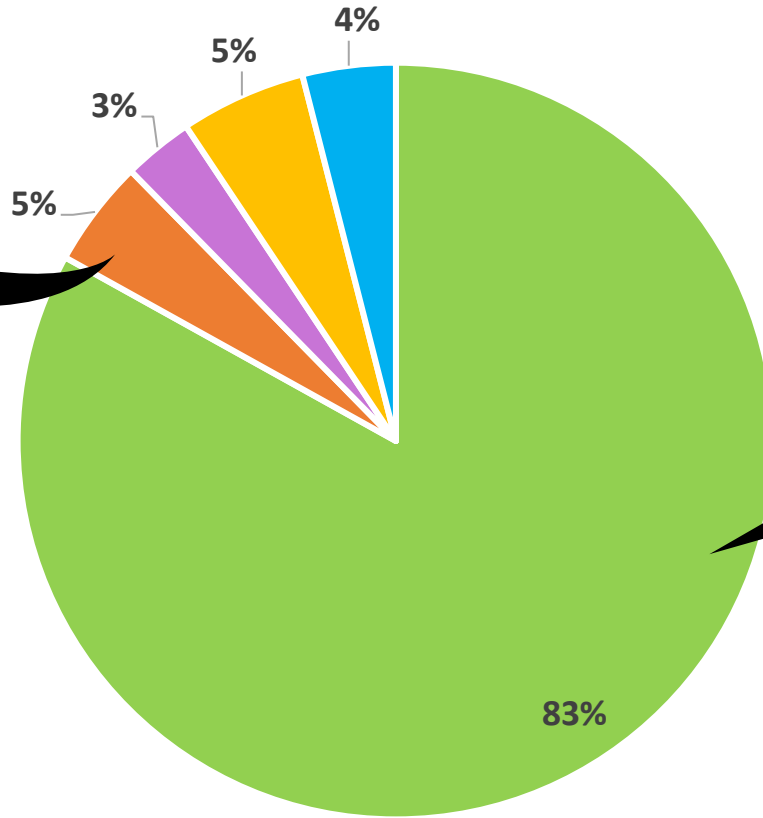


Answer Choices by Category

"Firearm" Subcategories

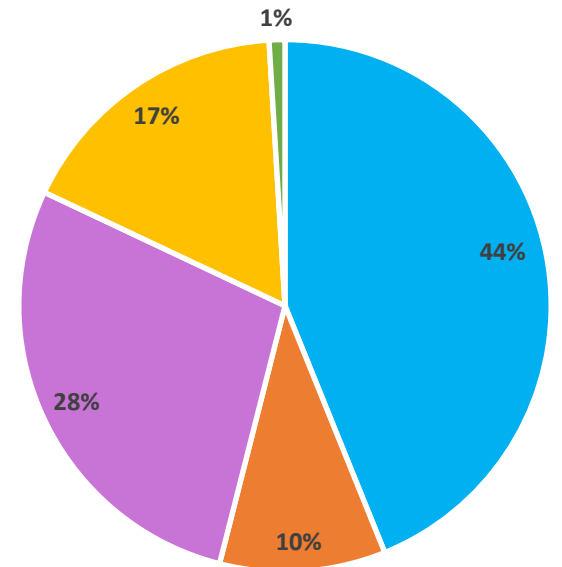


■ Shotgun ■ Other



■ Screwdriver ■ Firearm
■ Ice pick ■ Allen/Hex Wrench
■ Other

"Screwdriver" Subcategories



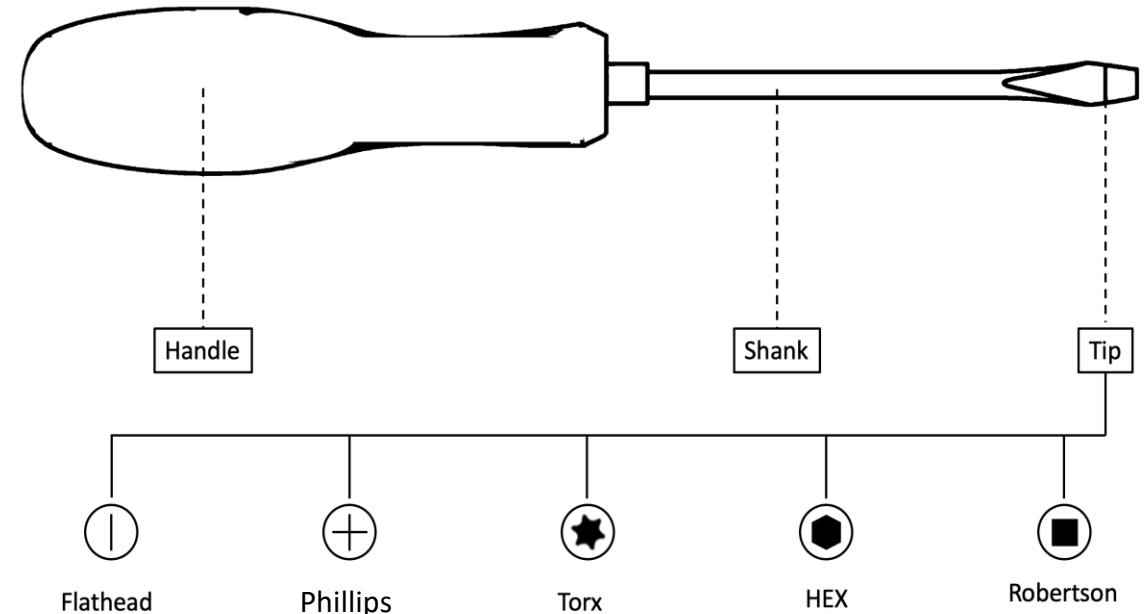
■ Phillips ■ Hex
■ Torx ■ Unspecified
■ Other

Answer: Torx screwdriver

Typical screwdrivers are made of several parts:

- Handle - the proximal grip portion designed for the user to hold it
- Shank - an elongated, cylindrical metal rod that extends from the handle to the tip of the screwdriver.
- Blade, head, or tip - the flattened, wedge-shaped, or cross-shaped tip, which corresponds to a type of screw.

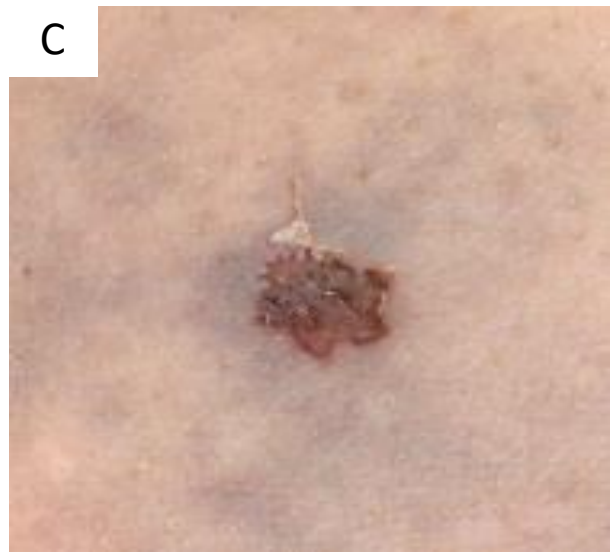
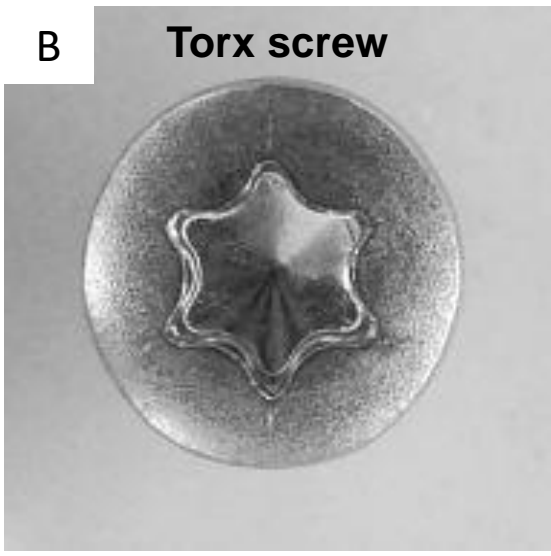
There are many different types of screwdriver, but the most common include “flathead” (slotted), Phillips (cross-head), Torx (“star”), Robertson (square), and Hex (hexagon).



Answer: Torx screwdriver

While wounds caused by Phillips and flathead screwdrivers are well described in the literature and traditional forensic books, injuries resulting from Torx screwdrivers have not been documented. Due to its rigid structure and narrow tip, a Torx screwdriver can penetrate skin, soft tissues, and bone structures with force, causing severe injuries to deep organs. However, because of its relatively flat (blunt) head, wounds produced by Torx screwdrivers are a hybrid between sharp and blunt force. In this case, multiple superficial patterned abrasions resembling a 'six-pointed star' screwdriver tip were identified on the body (A), which clearly resemble the shape of a Torx screw (B). Figure C shows a star-shaped patterned abrasion, suggesting that the flat surface of the Torx tip prevented the tool to consistently penetrating the soft tissues. Multiple penetrating wounds perforated the clothes (D), sternum, rib cage, and internal chest organs.

Screwdriver injuries generally exhibit a specific pattern that must be recognized and photographed to allow for the identification of the potential weapon used. Although the weapon was not retrieved, witnesses observed the offender holding a blood-stained screwdriver after the event, and the injury patterns resembled the shape of a Torx screwdriver tip. If more irregular star-shaped or hexagonal wounds are identified, hexagon ('Hex') screwdrivers injuries may also be included in the differential diagnosis.



... But where did it come from???

We had lots of proposed ideas...

- “Hex star screwdriver, T15 size, DeWalt brand, bought from Home Depot on a Saturday morning with the side of some potted plants and a hot dog.”



- “Phillips AKA cross head head screwdriver from Harbor Freight bought with a coupon- it looks cheap”

- “Screwdriver. If you look at it under a microscope you’ll clearly be able to see it’s a Craftsman Phillips head from Lowe’s aisle 16 row 3A.”



Fun facts - Honorable mentions

- “Possibly one of the screwdrivers that are supplied with Ring doorbells, to change the battery.”
 - Great thought! The Ring screwdriver is a Torx screwdriver 😊
- “Clé étoile” = Star key wrench in French!

REFERENCES

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