Forensic Photography Tips

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A 22-year-old male is brought to the emergency department (ED) with a gunshot wound to the thigh. His vital signs are stable. There is only one wound, and the bullet is palpable under the skin. The wound is surrounded with soot. How should you document the injury prior to removing the bullet and providing wound care?

When law enforcement is investigating a crime, forensic photography is an important part of the investigation. Forensic photographs enable all investigators and prosecutors involved to view the crime scene as it is in that moment of time, but what happens when your patient's body is the crime scene? Victims of violence frequently present for emergency medical care prior to meeting with investigators. Interventions such as debridement and basic wound care may destroy evidence and alter the appearance of wounds; as injuries heal, their appearance changes. Photographs taken in the emergency department provide investigators with the opportunity to see injuries as they originally appeared. Photographs of injuries such as bruises, lacerations, bite wounds, and firearm injuries can be crucial to the successful prosecution of violent crimes. Photographs should be taken before medical intervention if the patient's condition permits.

Equipment

There is a broad spectrum of photographic equipment available, ranging from smartphone cameras to professional-grade single-lens reflex cameras. Digital cameras used for forensic photography should have features including macro (close-up) mode and image stabilization. Ideally, emergency departments should have cameras specifically for medical and forensic photography, thus eliminating privacy concerns present if cell phone cameras are used. If using dedicated cameras, protocols should be in place for HIPAA-compliant storage of images.

The lighting in patient care areas is generally sufficient for basic forensic photography, but the camera's flash and additional lighting should be utilized if lighting is poor. Fluorescent light may distort the appearance of color in photographs; if available, a color scale should appear in at least one photograph. Off-camera flashes or ring lights may improve detail, particularly when in macro mode.

The widespread adoption of electronic medical records (EMRs), many of which have available smartphone apps, means that most emergency physicians can place photographs directly into the medical record. Cameras on personal phones should not be utilized for forensic photography unless the EMR app places the photo into the medical record without storing it to the phone's memory. While most smartphones do not have features desirable for forensic photography such as macro mode, they are still able to capture images adequate for investigation and prosecution if a few basic principles are followed.

Figure 1: Strangulation bruises on the neck. (Click to enlarge.)

Basic Principles

As forensic photographs may be used in court, it is important to show that the photographed injuries were sustained by the patient in question. This may be done by including patient identifiers in the photographs or by "bookending" the series of photographs with patient identifiers. Forensic images, once taken, should not be altered, and no image should be deleted.

The goal of forensic photography is to provide a clear and accurate depiction of the patient's injuries. The background of the photographs should be as uncluttered as possible and provide good contrast with the body part being photographed. The blue or green surgical drapes available in most emergency departments are ideal for this purpose.

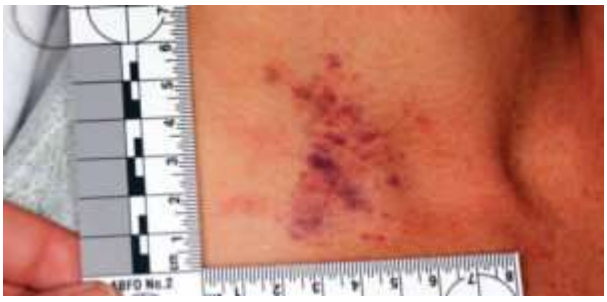

Figure 3: Correct sizing is needed when photographing bruising on the neck. (Click to enlarge.)

Each injury should be photographed from varying distances. An orienting photo shot from a distance should show the injury in relation to anatomic landmarks; it should be clear from this photo where on the patient's body the injury is located. A mid-range photo taken closer to the injury provides further detail of the injury and ideally includes an anatomic landmark. Close-up photos should be taken of each injury to show further details. These should be taken with and without a reference scale. While an American Board of Forensic Odontology

scale is commonly used, any common object of standard size can be used if this scale is not available (i.e., a coin or ruler). The reference scale should be in the same plane as the injury, and the camera should be perpendicular to the injury and the scale.

Legal Issues

While many ED general consent forms do include consent for medical photography, forensic photography requires separate consent from that obtained for medical treatment. The consent form should clearly state the intended use of the photographs and if they are able to be released to a law enforcement agency or district attorney's office.

Depending upon how the images are stored, investigators may be required to obtain a subpoena or an authorization for release of medical records. These protocols should be established with the hospital's medical records department.

KEY POINTS

- Forensic photography is an important tool in the medical-legal care of victims of violence in the ED.
- There are several reasonably priced, easy to use camera options to develop a forensic photography protocol for the ED.
- Personal cell phones should only be used in conjunction with your hospital's EMR that directly uploads into the patient record and does not save the image on the phone.
- Photos should never be deleted or manipulated.
- When photographing an injury, a minimum of four photos should be obtained: Orienting, mid-range, and close-up with and without reference scale.

Case Resolution

As the patient is stable, you have time to properly document the gunshot wound. In your chart, you describe the wound, including its size, shape, and location with respect to anatomic landmarks.

You also document the presence of soot around the wound. Using the EMR app on your smartphone, you obtain photographs of the wound, including orientation, mid-range, and close-up shots; you also obtain a photo of the wound with a measuring scale. You then remove the bullet with plastic forceps and package it for law enforcement, and provide wound care.

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