SDFI Secure Digital Forensic Imaging

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Adult Non-Fatal Strangulation PhotoDocumentation Protocol 2019

The Edition for Pediatric Strangulation Cases Can Be Found Here

Special Thanks to the following individuals for their involvement with this project:

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Reviewed By: Bill Smock, MD, Police Surgeon – Louisville Metro Police Department, Medical Director – The Institute of Clinical Forensic Medicine and Nursing

Non-Fatal Strangulation PhotoDocumentation Protocol

Introduction:

Healthcare providers working in the field of clinical forensic medicine frequently examine individuals who are victims of strangulation. The use of this protocol will help promote the continuing development of the highly specialized skills necessary for an effective evaluation of a person assaulted by strangulation. This Non-Fatal Photodocumentation Protocol will be beneficial in assisting first responders, nurses, physicians, nurse practitioners, physician assistants, emergency room healthcare providers, attorneys and law enforcement in the assessment and documentation of strangulation cases within their communities.

Multipurpose Recommended Equipment:

- Protective portable camera case (meets or exceeds IP67 • MIL C-4150J • Def Stan 81-41/STANAG 4280).
- Digital SLR camera capable of capturing RAW and JPG files (with appropriate accessories, depending on the camera system used).
- Hand-held camera remote.
- Foot-pedal-controlled camera remote.
- Low-profile, quick-release camera stand with ball-head function.
- Photomacrographic scales.
- A computer (64-bit with 6 GB RAM) with 1.0TB or greater of accessible local storage space. The best place to store forensic data is on a local, secure computer network. **Never** store digital evidence in the "Cloud"!
- Computer software and storage capable of reading/managing vast amounts of digital data.
- Computer software capable of securing and encrypting vast amounts of digital images and video at AES 256-bit federal military-level encryption standards.
- High-speed connection to the Internet (not less than 10 Mbps download and 5 Mbps upload).
- Nested, end-to-end secure file portal technologies.
- Optional 24-inch or larger HDTV or screen with an HDMI connector.

Procedure:


SDFI®-TeleMedicine SDFI = Secure Digital Forensic Imaging
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Date:
Name:
Case #:
Photographer:
ID Record #:
D.O.B:(mm/dd/yy) or Age:

1. The very first photo the forensic examiner should capture is that of a bookend card, a patient's ID wristband or a photo of a printed evidence label. It marks the start of the examination/photodocumentation.

   Note: Download a copy of the SDFI bookend card at:
   http://www.sdfi.com/downloads/SDFI_1Up_Bookend_Card_Page_Scaling_None.pdf

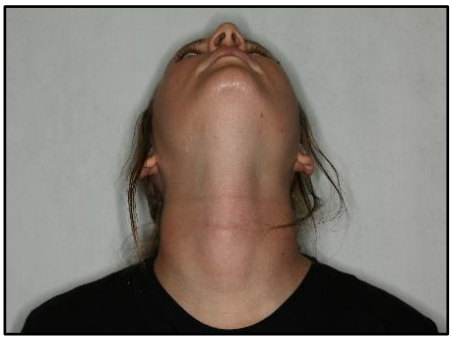
2. Capture a full-body, overlapping photographic storyboard. This series of photos will identify the patient and will be useful in determining the general condition of the patient at the time of examination.

   Download a copy of SDFI's Forensic PhotoDocumentation Protocol at:
   http://www.sdfi.com/downloads/SDFI_Digital_Protocol.pdf

   Once downloaded, refer to pages 2, 3 and 4 of the protocol to capture your "far-away" photos.

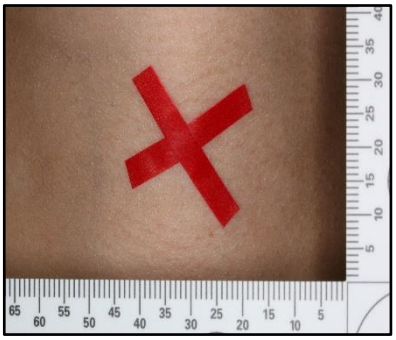
3. Capture a series of mid-distance photos of the front, back, left side and right side of the face/head, upper chest/neck, upper back/nape and shoulders. Capture another photo of the front of the neck with the head tilted back to expose the full neck and the area under the chin. This will allow augmentation of the neck and head.



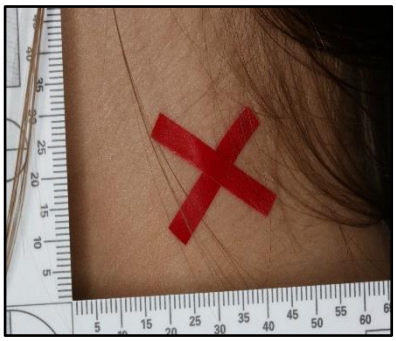


4. Capture a series of close-up photos of any visible injury on the front, left side, right side and back of the neck, first with measurement, then without. Conduct an assessment for other visible injuries and other areas of interest such as the ears, behind the ears, scalp, jaw line, submandibular area and chin.

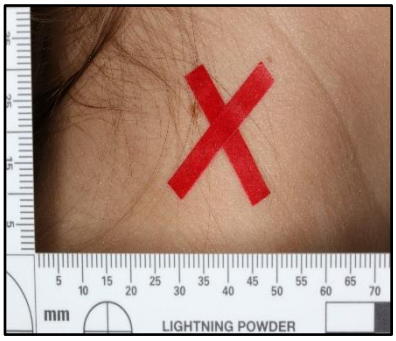
Front of the neck, with and without a scale.



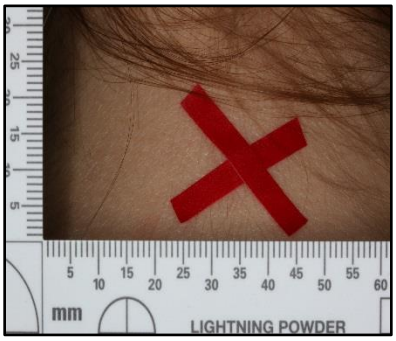

Left side of the neck, with and without a scale.




Right side of the neck, with and without a scale.



Back of the neck, with and without a scale.



Both left and right outer ears. Behind the ears with and without a scale.

Scalp, with and without a scale.

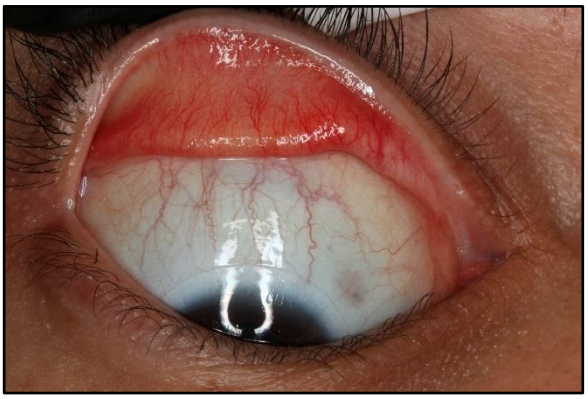
5. Capture a series of close-up photos of the eyes in the nine different eye positions of gaze as shown below. The examiner should look for petechial hemorrhages, or sub-conjunctival hemorrhages. There are no hemorrhages noted in these photographs.

6. Capture a serious of close-up photos of each eye using the eye inversion technique. Apply pressure medially and laterally on the lower lids to expose the entire surface. Use the same different gaze positions as used in Section 5. This step will expose the back of the upper and lower eyelids where the examiner can look for petechiae, hemorrhaging and any other area of interest.

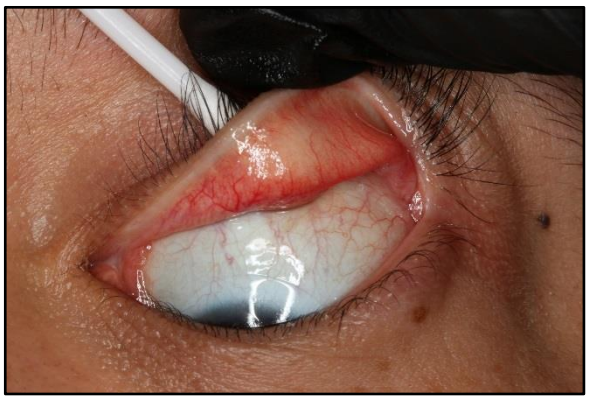
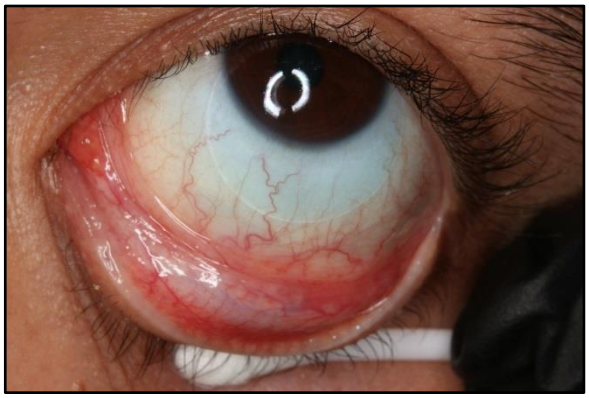
   To achieve this on the upper lid, grasp the lid using the fingers of a gloved hand by the middle eyelashes, pull it downward and forward and then pull it back over a cotton applicator placed at the upper margin of the tarsus while the person you are caring for looks downward.

For the lower lid, place the cotton applicator on the lower margin of the tarsus and depress laterally while the person you are caring looks upward. Capture a series of close-up photos of each eye using the inversion technique. Apply pressure medially and laterally on the lower lids to expose the entire surface. Use the same gaze positions as used in Section 5.

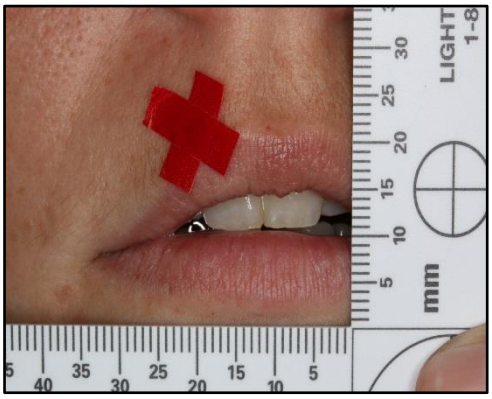
Right upper and lower eyelids

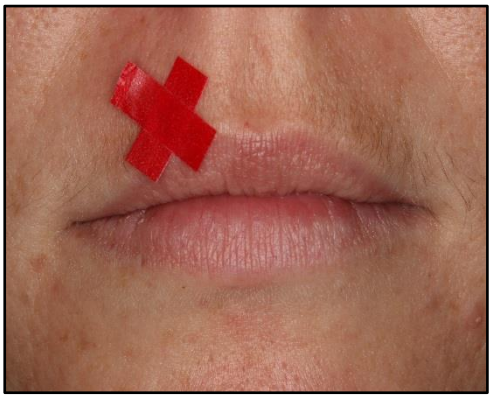



Left upper and lower eyelids

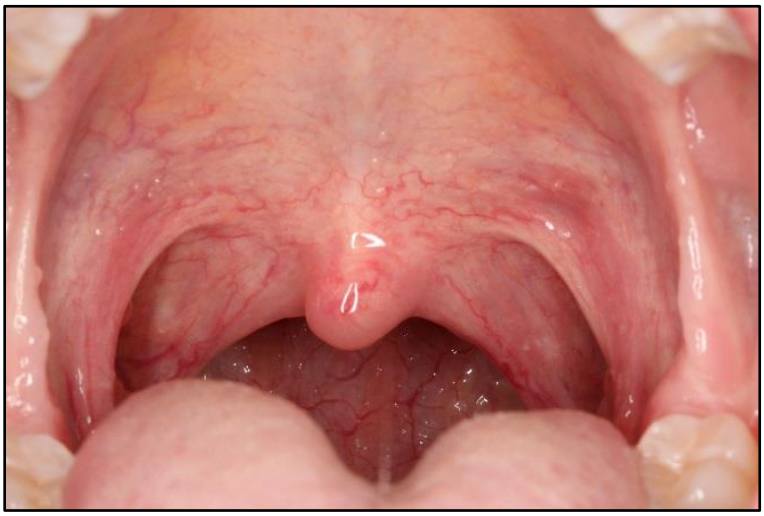



7. Capture a close-up photo of the upper and lower lips. If you see or suspect bruising, hemorrhaging or detect any other area of interest on either the upper, lower or both lips, capture photos with a measurement scale for documentation.

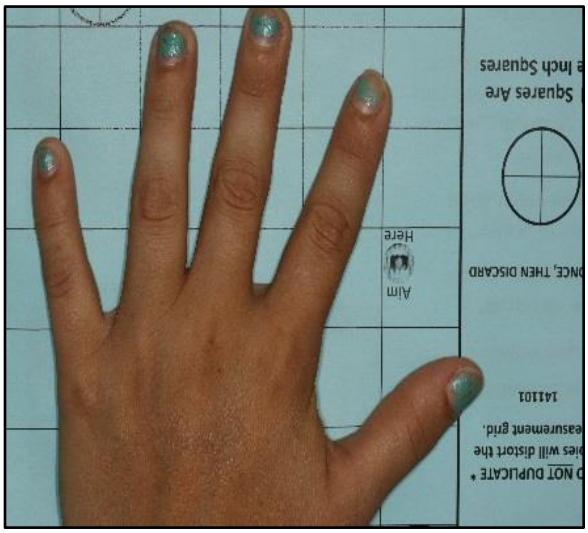
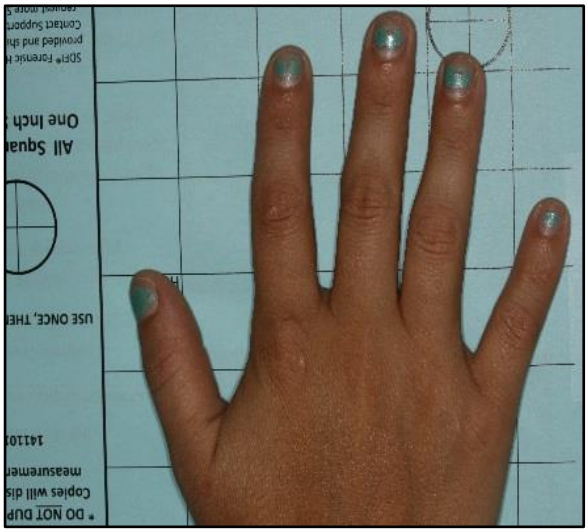




8. Capture a series of close-up photos of the oral cavity. The examiner will assess the soft palate, uvula and oropharynx. If you see bruising, hemorrhaging or detect any other area of interest, capture additional close-up photos of the finding.



9. Capture a series of close-up photos of the back and front of both hands separately, using SDFI's Hand Map. If you see, suspect or detect bruising or an area of interest, capture additional photos with a measurement scale first, then without a scale.

10. Capture close-up photos of the fingertips and fingernails from both hands. If you suspect bruising or detect an area of interest, capture additional photos with a measurement scale first, then without a scale.


11. The use of a mannequin can be effective in understanding the dynamics of an assault. This tool can show the physical positions of how the patient and the perpetrator were during the assault. Some programs will photograph the patient demonstrating with their own hands the way the perpetrator carried out the strangulation, using a Styrofoam head for documentation. Understand that the person you are caring for may have varied reactions to demonstrating this. Always follow what that person wants to do in this part of the examination.

    If a mannequin or Styrofoam head is available, capture a mid-distance photo of the patient, showing where the placement of the perpetrator's hands were.



12. Cases where the person being cared for is unable to demonstrate the strangulation using a mannequin or model, the examiner may use the **Non-Fatal Manual Strangulation Chart** (see page 11). The chart is on a separate sheet and it shows eight different depictions of manual strangulation also known as the eight pack. The examiner can show the patient the chart and have them choose among the numbered pictures which position is similar to what happened to them.

13. Capture a bookend card, a patient's ID wristband or a photo of a printed evidence label, which serves to mark the conclusion of this part of the examination.

Special Thanks to the following individuals for their involvement with this project:

Consultant: Diana Faugno - MSN, RN, CPN, SANE-A, SANE-P, FAAFS, DF-IAFN, DF-AFN

Reviewed By: Bill Smock, MD, Police Surgeon – Louisville Metro Police Department, Medical Director – The Institute of Clinical Forensic Medicine and Nursing

Det. Alex Smith – Lancaster Sheriff's Department

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Non-Fatal Manual Strangulation Chart

Trauma Informed Patient Care: Often times your patient may have difficulty showing the position of the perpetrator's hands on their neck. This 8 pack will help the patient describe the event by pointing to one of the eight positions similar to what happened to them. The positions are numbered 1-8 for ease of documentation by the provider.

Left Hand – Front	Right Hand – Front	Two Hands – Front	Two Hands – Back
			
1	**2**	**3**	**4**
Left Arm	Right Arm	Left Elbow	Right Elbow
			
5	**6**	**7**	**8**

Examiner's Notes: _____

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RECOMMENDATIONS for the MEDICAL/RADIOGRAPHIC EVALUATION of ACUTE ADULT, NON-FATAL STRANGULATION

Prepared by **Bill Smock, MD** and **Sally Sturgeon, DNP, SANE-A**
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Endorsed by the **National Medical Advisory Committee**: Bill Smock, MD, Chair; Cathy Baldwin, MD; William Green, MD; Dean Hawley, MD; Ralph Riviello, MD; Heather Rozzi, MD; Steve Stapczynski, MD; Ellen Tailiaferro, MD; Michael Weaver, MD

GOALS:
1. Evaluate carotid and vertebral arteries for injuries
2. Evaluate bony/cartilaginous and soft tissue neck structures
3. Evaluate brain for anoxic injury

Strangulation patient presents to the Emergency Department

History of and/or physical exam with ANY of the following:

- **Loss of Consciousness** (anoxic brain injury)
- **Visual changes**: "spots", "flashing light", "tunnel vision"
- **Facial, intra-oral or conjunctival petechial hemorrhage**
- **Ligature mark or** neck **contusions**
- **Soft tissue neck injury/swelling of the neck/carotid tenderness**
- **Incontinence** (bladder and/or bowel from anoxic injury)
- **Neurological signs or symptoms** (LOC, seizures, mental status changes, amnesia, visual changes, cortical blindness, movement disorders, stroke-like symptoms.)
- **Dysphonia/Aphonia** (hematoma, laryngeal fracture, soft tissue swelling, recurrent laryngeal nerve injury)
- **Dyspnea** (hematoma, laryngeal fractures, soft tissue swelling, phrenic nerve injury)
- **Subcutaneous emphysema** (tracheal/laryngeal rupture)

Consider administration of one 325mg aspirin if there is any delay in obtaining a radiographic study

Recommended Radiographic Studies to Rule Out Life-Threatening Injuries*
(including delayed presentations of up to 1 year)

- **CT Angio of carotid/vertebral arteries** (***GOLD STANDARD*** for evaluation of vessels and bony/cartilaginous structures, less sensitive for soft tissue trauma) ***or***
- **CT neck with contrast** (less sensitive than CT Angio for vessels, good for bony/cartilaginous structures) ***or***
- **MRA of neck** (less sensitive than CT Angio for vessels, best for soft tissue trauma) ***or***
- **MRI of neck** (less sensitive than CT Angio for vessels and bony/cartilaginous structures, best study for soft tissue trauma) ***or***
- **MRI/MRA of brain** (most sensitive for anoxic brain injury, stroke symptoms and inter-cerebral petechial hemorrhage)
- **Carotid Doppler Ultrasound** (***NOT RECOMMENDED:*** least sensitive study, unable to adequately evaluate vertebral arteries or proximal internal carotid)

*References on page 2

History of and/or physical exam with:

- **No LOC** (anoxic brain injury)
- **No visual changes**: "spots", "flashing light", "tunnel vision"
- **No petechial hemorrhage**
- **No soft tissue trauma to the neck**
- **No dyspnea, dysphonia or odynophagia**
- **No neurological signs or symptoms** (i.e. LOC, seizures, mental status changes, amnesia, visual changes, cortical blindness, movement disorder, stroke-like symptoms)
- And **reliable home monitoring**

Discharge home with detailed instructions, including a lethality assessment, and to return to ED if: neurological signs/symptoms, dyspnea, dysphonia or odynophagia develops or worsens

(-) Continued ED/Hospital Observation (based on severity of symptoms and reliable home monitoring)

(+)
- Consult Neurology Neurosurgery/Trauma Surgery for admission
- Consider ENT consult for laryngeal trauma with dysphonia
- Perform a lethality assessment per institutional policy

Brochure Design by Yesenia Aceves
StrangulationTrainingInstitute.com
Version 4.8.19

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