**Recommendations for the Medical/Radiographic Evaluation of Acute Adult, Non-Fatal Strangulation**

**Version 4.8.19**

**Brochure Design by** Yesenia Aceves

---

**Strangulation patient presents to the Emergency Department**

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

---

**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)**

---

**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**

**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

**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)**

---

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

**Consult Neurology Neurosurgery/Trauma Surgery for admission**

**Consider ENT consult for laryngeal trauma with dysphonia**

**Perform a lethality assessment per institutional policy**

---

**References on page 2**

---

*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

**Prepared by** Bill Smock, MD and Sally Sturgeon, DNP, SANE-A

**Office of the Police Surgeon, Louisville Metro Police Department**

**StrangulationTrainingInstitute.com**

**Version 4.8.19**
<table>
<thead>
<tr>
<th>Reference</th>
<th>Citation</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.</td>
<td>Sethi PK, Sethi NK, Torgovnick J, Arsura E, Delayed Left Anterior and Middle Cerebral Artery Hemorrhagic Infarctions After Attempted Strangulation, A case report; Am J Forensic Med Pathol 2012;33:105-106</td>
</tr>
</tbody>
</table>

This project is supported all or in part by Grant No. 2016-TA-AX-K067 awarded by the Office on Violence Against Women, U.S. Department of Justice. The opinions, findings, conclusions, and recommendations expressed in this publication/program/exhibition are those of the author(s) and do not necessarily reflect the views of the Department of Justice, Office on Violence Against Women.