



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



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- 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, intraoral or conjunctival petechial hemorrhage**
- **Ligature mark or neck contusions**
- **Soft tissue neck injury/swelling of the neck/cartoid 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)

Recommended Radiographic Studies to Rule Out Life-Threatening Injuries* (including delayed presentations of up to 6 months)

- **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 intercerebral 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 to return to ED if:
neurological signs/symptoms, dyspnea, dysphonia or odynophagia develops or worsens

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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



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(Recommendations based upon case reports, case studies, and cited medical literature)

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