Date: February 12, 2019
To: CAHAN San Diego Participants
From: Health and Human Services Agency

Strangulation: Intimate Partner Violence in San Diego County

This health advisory informs healthcare providers about the risks of intimate partner, non-fatal strangulation. It also contains resource links and recommendations for local healthcare providers.

Key Points

- In the past decade, approximately half of women who were murdered in the City of San Diego were killed by an intimate partner, some by strangulation.
- Intimate partner, non-fatal strangulation is a strong indicator that an abusive relationship could turn fatal. Non-fatal strangulation is associated with a six-fold increased risk of attempted homicide and seven-fold increased risk of completed homicide.
- Recognizing strangulation signs and symptoms during history and examination of at-risk patients can save lives.
- **For suspected cases of strangulation, healthcare providers should immediately contact local law enforcement, concurrent with a medical work up.**
- Local law enforcement has been trained to implement a standardized strangulation protocol.
- Collection of evidence of strangulation, and other serious domestic violence injuries, by trained healthcare personnel can increase felony filings by 30 percent.

Situation

A recent Washington Post news article investigated the homicides of women in 47 major U.S. cities between 2007 and 2017. They found that nearly half of these women were killed at the hands of an intimate partner. According to the San Diego County Domestic Violence Fatality Review Team, during this same timeframe, there were 122 intimate partner homicides of women in San Diego County, of which, 13% included strangulation as a contributing cause. San Diego County has been a pioneer in the detection and prosecution of strangulation cases. Intimate partner homicides have decreased by 50% countywide from 2015 to 2017.

The San Diego County District Attorney's Office (DA) and Palomar Health, Forensic Health Services found that evidence collection in strangulation, and other serious domestic violence injuries, by trained healthcare personnel increased the filing of felony charges by 30 percent. The DA has also worked with local law enforcement agencies to implement a standardized strangulation protocol to further aid in these investigations.

Background

Strangulation is identified as one of the most lethal forms of domestic violence and sexual assault. It is defined as the external compression of the neck, including the airway and blood vessels, causing reduced air and blood flow to or from the brain. Strangulation does not require access to a particular weapon. Manual strangulation with an assaulter's hands appears to be the most common method of strangulation in intimate partner violence (IPV), although other items, such as ropes, belts, or scarves, are sometimes also used.

Strangulation differs from "choking," which involves an internal airway obstruction rather than an external force applied to the neck. Only four pounds of external pressure are required to occlude the jugular veins. Likewise, only 5 to 11 pounds of pressure are required to occlude the carotid arteries. Unconsciousness can occur within seconds and death can occur within only 3 to 5 minutes. In greater than 50% of cases, the victim may have no external signs of injury after strangulation because of the relatively low amount of force. Injuries can, however, present acutely or later, up to months and even years post assault. Victims with no or minimal external signs of trauma may have life-threatening internal injuries such as carotid or vertebral dissections or fractured hyoid bones; this requires a high index of suspicion during medical evaluation.

Those who attempt to strangle an intimate partner are far more likely to later commit extreme acts of violence. A large case-control study in the United States found previous strangulation to be a substantial and unique predictor of attempted and completed homicide of women by a male intimate partner. Non-fatal strangulation as a risk factor for future homicide is associated with a six-fold increased risk of attempted homicide and seven-fold increased risk of completed homicide. Thus, it is imperative that medical professionals develop awareness for indicators of non-lethal strangulation.

According to the recent Washington Post analysis, violent "choking" (as laypersons may term strangulation) is almost entirely confined to fatal domestic attacks on women. While less than one percent of all homicides result from strangulation, six percent of women killed by intimate partners die in this manner. Multiple attempted strangulations are reported among one-third to as many as three-fourths of women in domestic violence emergency shelters. In addition to the psychological effects of such intimidation, unique and wide-ranging neurological and other physical outcomes are associated with strangulation.

Recommendations

- Perform IPV screening on vulnerable patients and those with suspicious symptoms or injuries.
    - Questions should address strangulation using general terms. For example, "Can you tell me if anything came across your neck or pressure was placed on your neck?"
- **Recognize nonfatal strangulation signs and symptoms** (see attached illustration).
- Be aware that **many patients may have no external findings** but could still have symptoms consistent with strangulation.
- **Evaluate for injuries to the carotid and vertebral arteries**, the bony/cartilaginous and soft tissue neck structures, and the brain (for anoxia).
    - **Perform imaging**, such as CT angiography, in order to evaluate vessels and bony/cartilaginous structures for all victims of strangulation.
- **Report** suspected domestic violence cases to law enforcement.
    - California Penal Code Section 11160 requires that if any health practitioner, within the scope of employment, provides medical services for a wound or physical injury inflicted as a result of assaultive or abusive conduct, or by means of a firearm, shall make a **telephone report as soon as possible to local law enforcement** (which agency is dependent on where the incident occurred), and **complete the following form: OES 2-920**
- **Offer resources** to at-risk patients, friends, or family members**.**

Resources

Federal

- Help lines such as the National Domestic Violence hotline at 800-799-7233
- CDC Intimate Partner Violence Resources
- National Consensus Guidelines on Identifying and Responding to Domestic Violence in Healthcare Settings

Local

- 2-1-1 San Diego
    - 24-hour community information line that can link callers to "hotline" services for domestic violence
- San Diego Family Justice Center
  Toll free: (866) 933-HOPE (4673)
  Local: (619) 533-6000
  Hours of Operation: 8:00am-5:00pm
- Palomar Health, Forensic Health Services
  Local: (760) 739-2150
- The Training Institute on Strangulation Prevention

Thank you for your participation.

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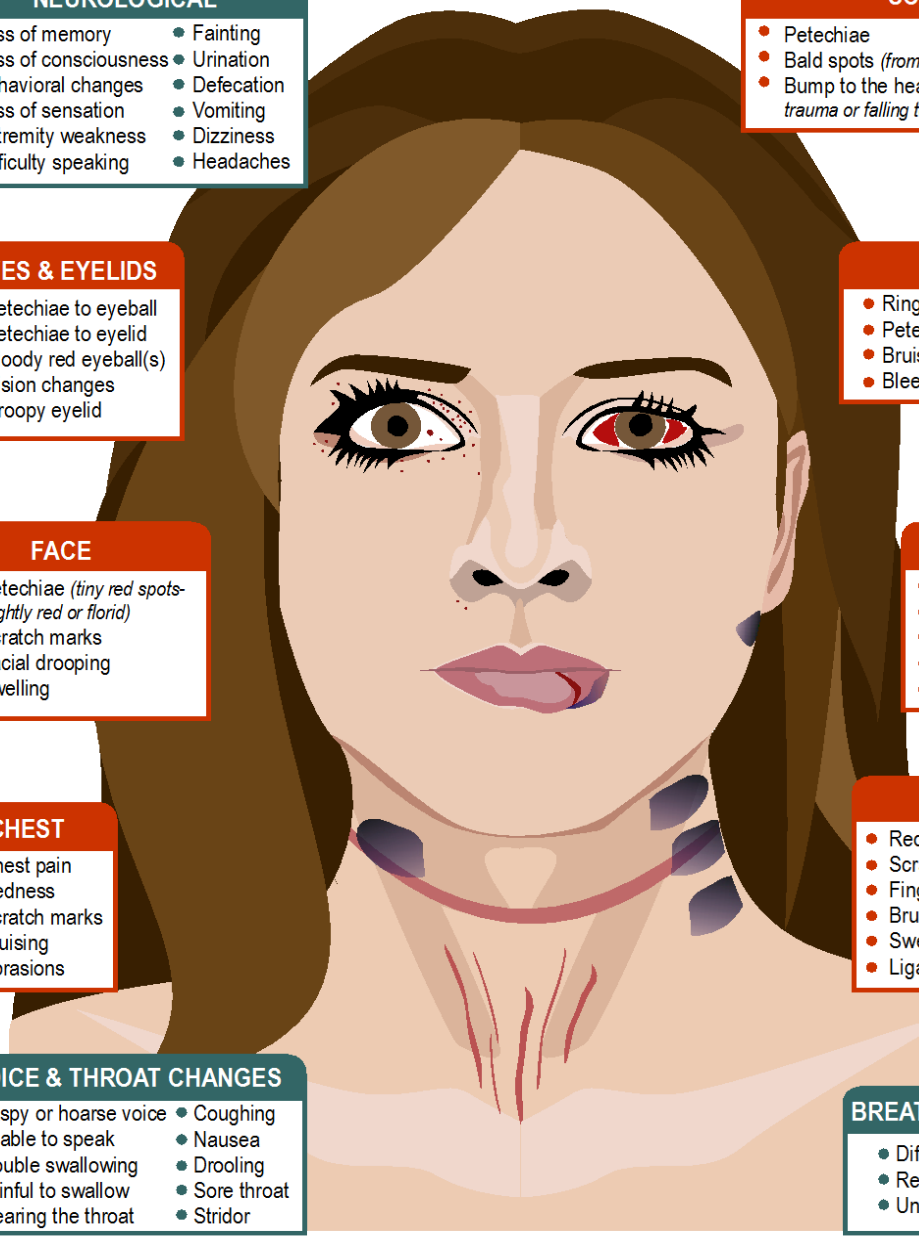
SIGNS AND SYMPTOMS OF STRANGULATION



NEUROLOGICAL

- Loss of memory
- Loss of consciousness
- Behavioral changes
- Loss of sensation
- Extremity weakness
- Difficulty speaking
- Fainting
- Urination
- Defecation
- Vomiting
- Dizziness
- Headaches

SCALP

- Petechiae
- Bald spots *(from hair being pulled)*
- Bump to the head *(from blunt force trauma or falling to the ground)*

EYES & EYELIDS

- Petechiae to eyeball
- Petechiae to eyelid
- Bloody red eyeball(s)
- Vision changes
- Droopy eyelid

EARS

- Ringing in ears
- Petechiae on earlobe(s)
- Bruising behind the ear
- Bleeding in the ear

FACE

- Petechiae *(tiny red spots- slightly red or florid)*
- Scratch marks
- Facial drooping
- Swelling

MOUTH

- Bruising
- Swollen tongue
- Swollen lips
- Cuts/abrasions
- Internal Petechiae

CHEST

- Chest pain
- Redness
- Scratch marks
- Bruising
- Abrasions

NECK

- Redness
- Scratch marks
- Finger nail impressions
- Bruising *(thumb or fingers)*
- Swelling
- Ligature Marks

VOICE & THROAT CHANGES

- Raspy or hoarse voice
- Unable to speak
- Trouble swallowing
- Painful to swallow
- Clearing the throat
- Coughing
- Nausea
- Drooling
- Sore throat
- Stridor

BREATHING CHANGES

- Difficulty breathing
- Respiratory distress
- Unable to breathe

Source: *Strangulation in Intimate Partner Violence, Chapter 16, Intimate Partner Violence. Oxford University Press, Inc. 2009.*

TRAINING INSTITUTE on STRANGULATION PREVENTION

www.strangulationtraininginstitute.com

Graphics by Yesenia Aceves

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 symtoms.)
- **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)

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 symtoms)
- And **reliable home monitoring**

Discharge home with detailed instructions 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 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

(-) → 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

Brochure Design by Yesenia Aceves
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