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"I Thought I Was Going to Die"
Effectively Investigating and Prosecuting Non-Lethal Strangulation (Part II)



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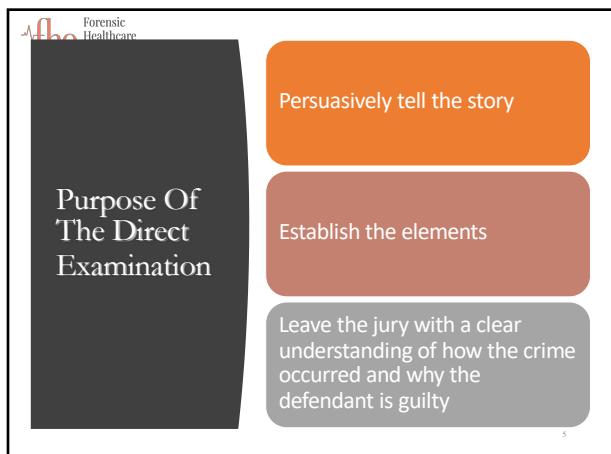


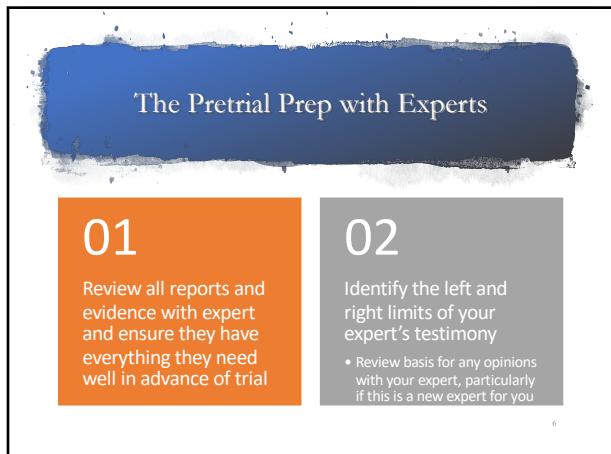
Thank You



Special thanks to MAJ Dave O'Dea for allowing us use of his direct examination as a foundation for this training.







**Juries
Need to
Know
Your
Expert**

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- Employment
- Education and training
- Licenses and certifications
- Professional affiliation
- Training/teaching experience
- Clinical experience
- Previous expert testimony (government/defense)

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Foundation Related to Strangulation

- Received training specific to strangulation?
- Examined patients who have reported being strangled?
- Applied your training to the examination of those patients?
- How many patients have you examined who reported being strangled?
- Previously testified as an expert in strangulation cases?
- How many times?



Expert Content

What is strangulation?

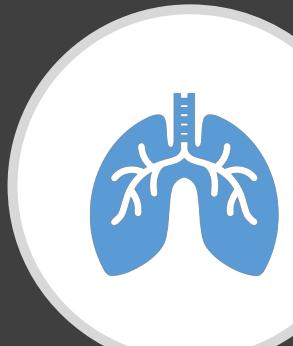
Strangulation is a form of asphyxia characterized by closure of the blood vessels and air passages of the neck as a result of external pressure on the neck.

Medically speaking, it is generally blunt force trauma to the neck and should be treated as such.

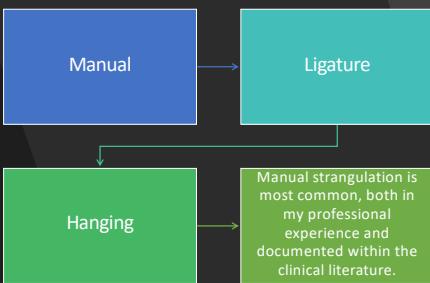


(Follow up questions about definitions):

- Asphyxia: a condition caused by inadequate intake of oxygen.
 - Caused by injury or obstruction of the airway
- Hypoxia: reduction of oxygen supply to the tissue below physiological levels.
- Anoxia: an absence of oxygen supply to the tissues (a more severe form of hypoxia)



What are the different methods of strangulation (and in your experience which is most common?)





Are there any particular features of the neck that make strangulation particularly dangerous?

There are several structures critical for survival located on the neck, and all are poorly protected:

- The spinal cord
- The airway
- The vessels that take blood to and from the brain...





- The brain needs a continuous supply of oxygen. Without it, brain cells quickly malfunction and die.
- Brain cells do not regenerate.
- There are two vital bodily systems that must work perfectly and in unison—the respiratory (breathing) system and the cardiovascular (blood flow) system.
- There are multiple vulnerabilities in both of these systems, which is why strangulation needs to be taken seriously.

What happens during strangulation?



VENOUS OBSTRUCTION



ARTERIAL OBSTRUCTION



AIRWAY OBSTRUCTION



COMPRESSION OF THE CAROTID SINUS



Venous Obstruction

- Blocking the jugular veins causes congestion of the blood vessels and increased venous and intracranial pressure.
- Impacts return of blood from the brain, resulting in a build up of blood in the brain that doesn't contain enough oxygen.
 - Dilating veins rupture causing petechiae (external and internal) and subconjunctival hemorrhage



Arterial Obstruction

- Compression of and resulting injury to the carotid arteries impedes oxygen delivery to the brain.
 - Compressing one side can result in neurological findings (including weakness, numbness and tingling) on the opposite side.
 - Bleeding and tearing of the artery can cause blood clots to form, impacting blood flow—generally a delayed finding
 - Clots can break free and travel to the brain



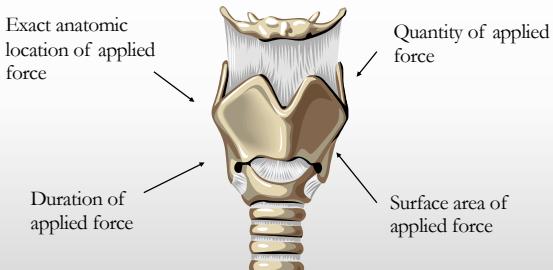
Airway Obstruction

- External force to the anterior neck can result in injuries to the soft tissues of the neck, esophagus, larynx, trachea, cervical spine, and the laryngeal and facial nerves.
 - Can be immediate or signs/symptoms can develop over time

Compression of the Carotid Sinus

- Pressure on the carotid sinus can cause acute bradycardia (a too slow heart rate) or cardiac arrest.
- Generally requires sustained pressure for 3-4 minutes before altered consciousness.

Are there certain factors that determine how “efficient” the strangulation will be?



Adapted from D Hawley MD: Death by Strangulation

What's the spectrum of signs and symptoms that result from strangulation?



Anoxia can cause seizures, loss of consciousness, incontinence, and pulmonary edema, among other issues



Increased intracranial pressure can cause petechiae and subconjunctival hemorrhaging



Blunt trauma to the anterior neck can cause injury (including hematomas and swelling) to the trachea and larynx, resulting in neck swelling, difficulty/pain with swallowing, respiratory issues and subcutaneous emphysema

- Blunt trauma to the carotid arteries can cause dissections, and ultimately stroke
- Repeated hypoxic events can cause neurologic symptoms to increase over time and in frequency, including one-sided weakness, paralysis, facial droop, eye droop, ringing in ears, memory loss, and sensory deficits

Is there a difference between signs and symptoms?

Signs are things we can objectively evaluate for ourselves (e.g. a bruise); symptoms are things we rely on our patients to tell us (e.g. pain with swallowing).

Will there always be injury?



Injury is found in approximately 50% of strangulation patients, based on most widely cited data; smaller studies found rates to be higher.

As a clinician, do you have any concerns regarding the less visible sign of injury resulting from strangulation?

Just because something isn't visible doesn't mean it doesn't have the potential to have serious health consequences (e.g. cancer).

Because we cannot bring people into a lab setting and strangle them to unconsciousness, it's impossible to predict which patients may have life threatening outcomes from the strangulation event.

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What are the potential effects of being strangled repeatedly?

 Studies indicate that victims of repeated strangulation have a significant increase in neurological symptoms over time.

 Strangulation appears to have a cumulative effect, based on limited research.

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Don't law enforcement agencies routinely use chokes, meaning they are safe?

- Majority of LE agencies have moved away from using chokeholds because of the potential for serious, life-threatening injury.
- Military teaches combatives, but under specific conditions and for very specific circumstances. And none of the chokeholds taught include one or two hands wrapped around the neck.





In your experience, what have you observed regarding loss of memory in strangulation patients?



Strangulation patients frequently have loss of memory at the time of the strangulation assault; they may have specific recollection of other events leading up to the point of strangulation, but not be able to recall anything at the point of strangulation or its immediate aftermath.



Consider the specifics in *this* case

Identify

Identify any visible injury

Identify

Identify any signs/symptoms consistent with strangulation
• Include the verifiable or objective signs and where those are documented, such as police reports, EMS run reports, witness statements, medical records, etc.

Discuss

Discuss any additional information the expert identified through witness interviews, including interviews with the victim



Depending on case specifics:



Heard victim's testimony in court?



Interviewed the victim?



Considered other relevant documents?



Is there anything that stands out as consistent with strangulation signs and symptoms?



(If applicable) Considering the photos, anything that stands out regarding strangulation?

Things an expert may see in records/photos or hear from the victim:

Victim identifies:

- Inability to breathe
- Narrowing of vision, spots before their eyes
- Hearing changes, such as roaring in ears or sounding like being in a tunnel
- Loss of consciousness
- Seizure
- Loss of bladder or bowel control
- Loss of memory to the event
- Pain with movement of head/neck

Documented injury to head/neck, including internal structures

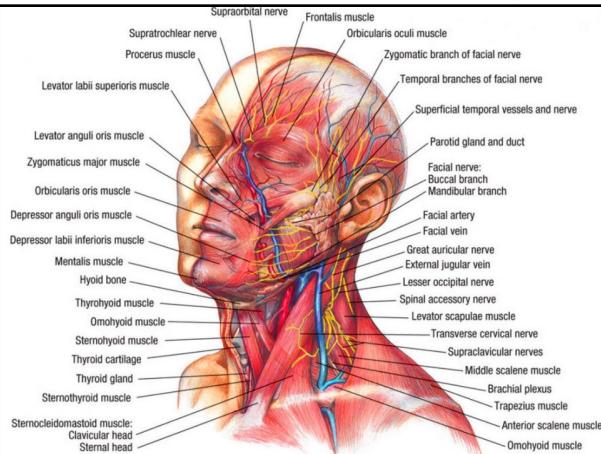
What happens when strangulation goes unabated, or is not stopped?

Death.

Use of Demonstratives

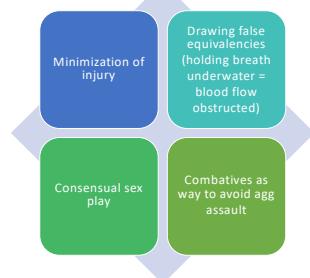
Demonstratives

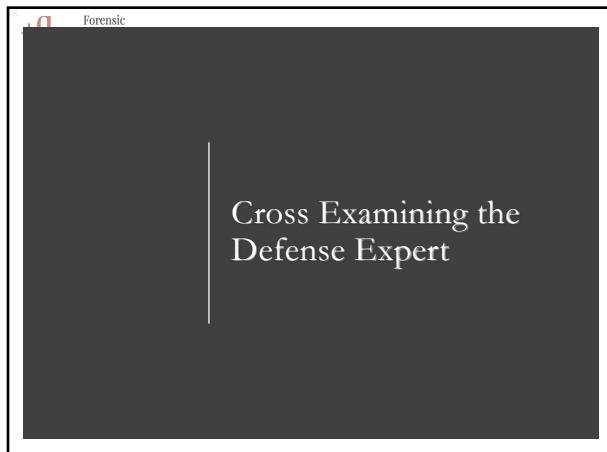
Can be an excellent tool to make complex points simple— strangulation testimony can benefit because of the complexities of the anatomy and physiology and the realities of this mechanism of injury.

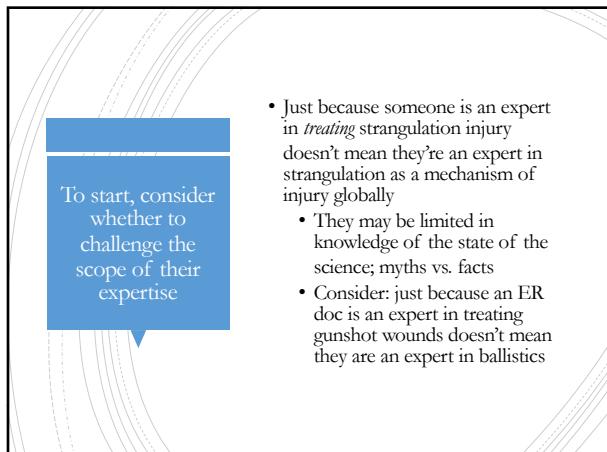




Anticipating Cross of Your Expert







- Just because someone is an expert in *treating* strangulation injury doesn't mean they're an expert in strangulation as a mechanism of injury globally
 - They may be limited in knowledge of the state of the science; myths vs. facts
 - Consider: just because an ER doc is an expert in treating gunshot wounds doesn't mean they are an expert in ballistics



Exercise: Garbage Opinions

- What follows are actual opinions in strangulation cases
- Consider the opinion; I will provide the analysis as the government's expert. Tell us:
 1. What is the cross question(s)?
 2. Would you want to put me up in rebuttal to address this, and if so, what would you ask?



There are different levels of strangulation. There are classifications that can be used. There is mild, moderate, and severe. Just as when you are in triage and you classify patients by their acuity, you can do the same with strangulation to know things to anticipate in their course of treatment.

(1/2)

Moderate is when you start to see the voice changes, the voice alterations. Typically we call it hoarseness of the voice. It sounds raspy. And you also can see fractures of the hyoid which is the bone in the back of the throat. I have had patients that have had hoarseness to the point they could not speak. They would only whisper the whole time they were in the exam room. They couldn't make a full voice. And that's a very common finding with a moderate strangulation.

(2/2)



If you have access to an ALS, it is a recommended practice. It has been quoted by a _____ who is a pioneer in our work as well as _____ who is a pioneer in strangulation assessment as being a practice that is definitely worth considering and looking into. It was quoted in their article about strangulation and best practices. It is not invasive. It is not harmful. It does not hurt. It is something that is very easily accomplished by simply passing the light over the patient's body.

It's very textbook that you will see linear scratches down the neck and down the chest from them grabbing up to the person's hand, arm, or whatever is around their neck to start try to pull that off.



Q. So the photographs of the petechiae or the venous subconjunctival ----
A. Subconjunctival? Yes, I saw that.
Q. And how serious did that appear to be?
A. It didn't appear to be serious. It appeared to be minor.
Q. Could it have been caused by something like sneezing?
A. Yes. There are many causes.
Q. Could it have been caused by somebody crying?
A. Absolutely.

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Q The fact that she didn't want medication or didn't get medication while she was there at the hospital, does that have any significance?

A. To me, that says she was not in enough pain to require medications nor request them

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