How to Improve Your Investigation and Prosecution of Strangulation Cases

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The Prosecutor’s Perspective

On a daily basis, police departments across the country receive a constant stream of 911 domestic violence calls where victims report being threatened, pushed, slapped, kicked, punched, choked, stabbed or even shot. Some agencies report that as much as 40 percent of all their 911 calls are domestic violence related.

In March 1995, Casondra, a 17-year-old girl, made such a 911 emergency call to the San Diego Police Department. She reported year-old former boyfriend. immediately and arrived at the Department. She reported year-old former boyfriend. immediately and arrived at the scene within minutes. When the police arrived, the injuries were fading. The officers could see. The self-defense and the victim additional statements. She emphatically begged for her former boy-friend to just leave her and her 18-month-old son alone! No arrest was made due to the lack of independent corroboration. However, the police dutifully took a report of the incident and submitted it to the Domestic Violence Unit of the San Diego Police Department for further investigation. The detectives followed-up with the victim and offered her referrals and information about domestic violence. The case was subsequently closed. A week later, her former boyfriend stabbed her to death in front of her stunned friends.

Six months later, Tamara, another teenager, died as a result of domestic violence. She was 16 years old, pregnant, and the mother of an 18-month-old girl. She was found dead in a dirt field, having been strangled to death and then set on fire by her 18-year-old former boyfriend.

The deaths of these two teenagers were shocking and a sobering reminder of the reality of teen relationship violence. The abrupt deaths of these two teenagers drove San Diego to action. It also drove San Diego City Attorney Casey Gwinn, the misdemeanor prosecutor in the City of San Diego, to study existing strangulation cases being prosecuted within his office. We learned that on a regular basis victims had reported being choked, and that in many of those cases, there was very little visible injury or evidence to corroborate the “choking” incident. The lack of evidence caused the criminal justice system to treat many “choking” cases as minor incidents,
similar to slaps in the face where only redness may appear.

We set ourselves on a course to find out as much as we could about strangulation and how to improve our response.

Below we will discuss the results of our study of misdemeanor strangulation cases, the medical perspective of strangulation cases, and tips on how to improve the documentation, investigation, and prosecution of attempted strangulation cases.

The Strangulation Study:

The initial study consisted of 100 strangulation cases, which were selected at random from police reports submitted over a five-year period. The first 100 victims were all women who reported being choked by their partners with bare hands, arms, or objects such as electrical cords, belts, rope, bras, or bathing suits. In one case, a victim reported that her boyfriend put a plastic bag over her head and tried to suffocate her.

There was a history of domestic violence in 90 percent of the cases, and children were present in at least 50 percent of the cases.

Focusing on the visible signs of strangulation, we found that police officers reported no visible injuries in 62 percent of the cases. Minor visible injuries, such as redness or scratch marks, were reported in 22 percent of the cases, but often injuries were too minor to photograph. Significant visible injuries, such as red marks, bruises or rope burns, were found in 16 percent of the cases. While these injuries were significant enough to photograph, the majority of those photographs were unusable because they were blurry or washed out from the flash. This suggested a need for police officer training in close-up photography. Victims sought medical attention in only 3 percent of the cases, primarily due to persistent pain, voice changes, or trouble swallowing.

Focusing on the symptoms reported by victims and documented in police reports, we found victims often reported pain to their throats or hoarseness. Other victims reported nausea, loss of consciousness, hyperventilation, defecation, uncontrollable shaking, or loss of memory. In one case, the victim had a miscarriage within 24 hours of being strangled.

Overall, many of the police reports neglected to clearly document how the victim was strangled, for how long, what threats were being made, or what symptoms the victims were experiencing. Sadly, our study showed that unless the victim had significant visible injuries or complained of continuous pain requiring medical attention, the police handled the incident as though she had been slapped in the face, rather than having been strangled.

Further, the victims often failed to mention their symptoms or declined medical attention, even when they were having difficulty breathing. Suspects often minimized the violence for many different reasons. For some, choking was just another form of physical violence, like pushing, and it was very normal to choke victims.
Many of the officers and prosecutors when they failed to see visible injuries believed there was insufficient probable cause for an arrest or insufficient evidence for a conviction. Officers and prosecutors believed and accepted that without visible injuries choking cases could not be prosecuted without a victim’s full cooperation or sufficient independent corroboration. We were wrong. We just needed to be trained on what questions to ask, what symptoms to look for, what information to document, how to take close-up photographs, and how to use medical experts.

The Medical Perspective:

Strangulation is defined as a form of asphyxia (lack of oxygen) characterized by closure of the blood vessels and/or air passages of the neck as a result of external pressure on the neck.¹ The three forms of strangulation are hanging, ligature, and manual. Almost all attempted or actual homicides by strangulation involve either ligature or manual strangulation. Ten percent of violent deaths in the U.S. each year are due to strangulation, six females to every male.

Ligature strangulation is strangulation with a cord-like object (also referred to as garroting), and may include anything from a telephone cord to articles of clothing.² Manual strangulation (throttling) is usually done with the hands, but notable variants include using the forearms (as when police officers use the carotid restraint) to standing or kneeling on the victim’s throat.³ Manual self-strangulation is not possible, because when the individual loses consciousness, pressure can no longer be applied.

A rudimentary knowledge of neck anatomy is critical in order to understand adequately the clinical features of strangled victim. The hyoid bone a small horseshoe-shaped bone in the neck helps to support the tongue. The larynx, made up of cartilage, not bone, consists of two parts: the thyroid cartilage (so-called because it is next to the thyroid gland) and the tracheal rings.

Carotid arteries are the major vessels that transport oxygenated blood from the heart and lungs to the brain. These are the arteries at the side of the neck that persons administering CPR (cardio-pulmonary resuscitation) check for pulses. Jugular veins are the major vessels that transport deoxygenated blood from the brain back to the heart.

The general clinical sequence of a victim who is being strangled is one of severe pain, followed by unconsciousness, followed by brain death. The victim will lose consciousness by any one or all of the following: blocking of the carotid arteries (depriving the brain of oxygen), blocking of the jugular veins (preventing deoxygenated blood from exiting the brain), and closing off the airway, causing the victim to be unable to breathe.

Only eleven pounds of pressure placed on both carotid arteries for ten seconds is necessary to cause unconsciousness.⁴ However, if pressure is released immediately, consciousness will be regained within ten seconds. To completely close off the trachea, three times as much pressure (33 lbs.) is required. Brain death will occur in 4 to 5 minutes, if strangulation persists.

Signs and symptoms
Symptomatic voice changes will occur in up to 50 percent of victims, and may be as mild as simple hoarseness (dysphonia) or as severe as complete loss of voice (aphonia).\textsuperscript{5}

Swallowing changes are due to injury of the larynx cartilage and/or hyoid bone. Swallowing may be difficult but not painful (dysphagia) or painful (odynophagia). Breathing changes may be due to the hyperventilating that normally goes hand in hand with a terrifying event, but more significantly may be secondary to an underlying neck injury. The victim may find it difficult to breathe (dyspnea) or may be unable to breathe (apnea). It is critical to appreciate that although breathing changes may initially appear to be mild, underlying injuries may kill the victim up to 36 or more hours later due to decompensation of the injured structures.

Mental status changes may manifest early as restlessness and combativeness due to temporary brain anoxia and/or severe stress reaction, and subsequent resolve.\textsuperscript{6} Changes can also be long-term, resulting in frank psychosis and amnesia.

Objective signs noted in strangulation victims include involuntary urination and defecation. Miscarriages have been anecdotally reported occurring hours to days later.

Visible injuries to the neck include scratches, abrasions, and scrapes. These may be from the victim’s own fingernails as a defensive maneuver, but commonly are a combination of lesions caused by both the victim and the assailant’s fingernails. Lesion location varies depending on whether the victim or assailant used one or two hands, and whether the assailant strangled the victim from the front or back.

Three types of fingernail markings may occur, singly or in combination: impression, scratch, or claw marks. Impression marks occur when the fingernails cut into the skin; they are shaped like commas or semi-circles. Scratch marks are superficial and long, and may be narrow or as wide as the fingernail itself. Claw marks occur when the skin is undermined; they tend to be more vicious and dramatic appearing.\textsuperscript{7} Because most victims are women, the scratches caused by their longer nails frequently are more severe than the scratches caused by assailant’s. Claw marks may be grouped, parallel markings vertically down the front of the neck, but often are scattered in a random fashion.

Redness (erythema) on the neck may be fleeting, but may demonstrate a detectable pattern.\textsuperscript{8} These marks may or may not darken to become a bruise. Bruises (ecchymoses or purpura) may not appear for hours or even days. Fingertip bruises are circular and oval, and often faint. A single bruise on the neck is most frequently caused by the assailant’s thumb.\textsuperscript{9} However, bruises frequently may run together, clustering at the sides of the neck, as well as along the jaw lines, and may extend onto the chin, and even the collar bones (clavicles).

Chin abrasions are also common in victims of manual strangulation, as the victim lowers the chin in an instinctive effort to protect the neck, and in so doing, scrapes the chin against the assailant’s hands.
The tiny red spots (petechiae) characteristic of many cases of strangulation are due to ruptured capillaries—the smallest blood vessels in the body—and sometimes may be found only under the eyelids (conjunctivae). However, sometimes they may be found around the eyes in the peri-orbital region, anywhere on the face, and on the neck in and above the area of constriction. Petechiae tend to be most pronounced in ligature strangulation. Blood red eyes (subconjunctival hemorrhages) are due to capillary rupture in the white portion (sclera) of the eyes. This phenomenon suggests a particularly vigorous struggle between the victim and assailant.

Ligature marks (e.g., rope burns) may be very subtle, mimicking the natural folds of the neck. They may also be much more dramatic, reflecting the type of ligature used, e.g., the wave-like form of a telephone cord, or the braided pattern of a rope or clothesline. If the victim has been strangled from behind, the impression from the ligature generally will be horizontal at the same level of the neck. This may be of use to differentiate the ligature mark from strangulation from the pattern left from a hanging. In a hanging, the ligature mark tends to be vertical and teardrop shaped, with the knot at the nape of the neck, directly in front or behind the ear or up under the chin. To further differentiate strangulation by ligature from strangulation by hanging, in ligature, the mark on the neck is usually below the level of the thyroid cartilage (“Adam’s apple”) while in hanging, it is usually above. Finally, in strangulation by ligature, the hyoid bone and/or thyroid cartilage are often fractured, in hanging, these are usually intact.

Ligature marks are a clue that the hyoid bone may be broken. As a general rule, on a post mortem exam, if a hyoid bone is fractured the death will be a homicide from strangulation until proven otherwise. However, because the two halves of the hyoid do not fuse until age 30, the hyoid may not break in younger victims who die as the result of strangulation. One third of manual strangulation victims have fractured hyoids.

Swelling (edema) of the neck may be caused by any one or combination of the following: internal bleeding (hemorrhage), injury of any of the underlying neck structures, or fracture of the larynx allowing air to escape into the tissues of the neck (subcutaneous emphysema).

Lung damage may be due to vomit inhaled by the victim during strangulation. This may lead to aspiration pneumonitis—a very serious condition as the gastric acids begin to digest the lung tissue. Milder cases of pneumonia may also occur hours or days later. The lungs may also fill with fluid (pulmonary edema) due to complex pathological processes that may arise from direct pressure placed on the neck.

Last, victims may have no visible injuries whatsoever, with only transient symptoms —yet because of underlying brain damage by lack of oxygen during the strangling, victims have died up to several weeks later. Because of these unforeseen consequences of injuries from a strangulation attempt that may appear minor to the untrained, officers at the scene should radio for medics for a medical evaluation of all victims who report being strangled.

The Training Curriculum:
Realizing that untrained officers and prosecutors may fail to recognize the seriousness of attempted strangulation when victims survive, we have developed a comprehensive training curriculum to assist professionals to identify the signs and symptoms common in strangulation cases.

The curriculum includes practical tips on how to improve the documentation, investigation, and prosecution of a strangulation case. Also important to the success of this training is proper equipment.

To achieve this goal, we enlisted the help of Barbara Porembra from Polaroid to help us obtain better equipment and training in close-up photography for our patrol officers. As a result, 1600 cameras were purchased by police officers and sheriff deputies in 1996 at dramatic savings, officers also received specialized training in the identification of strangulation cases. Thanks to the help of many individuals, such as detectives, prosecutors and physicians, those practical tips are listed below.

_Treat Your Strangulation Cases Seriously._

We started by using the word “strangle” as opposed to the word “choke.” “Strangle” means to obstruct seriously or fatally the normal breathing of a person. “Choke” means having the windpipe blocked entirely or partly by some foreign object like food.

We also requested that our officers investigate all strangulation cases as attempted homicides or aggravated assault cases (felony first). Most states have aggravated assault crimes. In California, in strangulation cases it is appropriate to charge a defendant with felony assault with a deadly weapon (Penal Code section 245(a)), even when the victim only has redness on her neck or throat pain. It is also appropriate to arrest a suspect for attempted felony spousal abuse under Penal Code section 273.5.

_Conduct a Very Thorough Interview and Investigation at the Scene._

As discussed above, there are many ways a perpetrator can strangle a victim. The level of injuries and symptoms will depend on many different factors including the method of strangulation, the age and health of the victim, whether the victim struggled to break free, the size and weight of the perpetrator, the amount of force used, etc. Therefore, it is important to ask the victim to demonstrate how she was strangled and to ask follow-up questions that will elicit specific information about the signs and symptoms of strangulation.

_The Follow-up Questions:_
1. Ask the victim to describe and demonstrate how she was strangled. Take photographs.

2. Document whether victim was strangled with 1 or 2 hands? Forearm? Objects?

3. If an object was used to strangle the victim, locate, photograph, and impound the object.

4. Determine if the suspect was wearing any jewelry, such as rings or watches? Look for pattern evidence.

5. If an object was used, how did it get there? Determine if the suspect brought the object with him to the crime scene. This information may be used to show premeditation.

6. What did the suspect say when he was strangling the victim? Use quotes.

7. Describe the suspect’s demeanor and facial expression.

8. Was the victim shaken simultaneously while being strangled?

9. Was the victim thrown against the wall, floor, or ground? Describe surface.

10. How long did the suspect strangle the victim?

11. How many times and how many different methods were used to strangle the victim?

12. How much pressure or how hard was the grip?

13. Did the victim have difficulty breathing or hyperventilate?

14. Any complaint of pain to the throat?

15. Any trouble swallowing?

16. Any voice changes? Complaint of a hoarse or raspy voice?

17. Any coughing?

18. Did the victim feel dizzy, faint, or lose consciousness?

19. What did the victim think was going to happen? (E.g. Did she think she was going to die?)

20. Did the victim, urinate or defecate as a result of being strangled?

21. Was the victim pregnant at the time?
22. Did the victim feel nauseated or vomit?

23. Any visible injury however minor? If so, take photograph and follow-up photos.

24. Any prior incidents of strangulation?

25. Any pre-existing injuries?

26. Were injuries shown to anyone? Any subsequent photos taken?

27. Did the victim attempt to protect herself or himself? Describe.

28. Any medical treatment recommended or obtained? If so, obtain medical release.

29. Any witnesses?

As indicated above, this article focuses on attempted strangulation cases. For an excellent article on investigating homicide strangulation cases, “A Guide to the Physical Analysis of Ligature Patterns in Homicide Investigations” by Brent E. Turvey, MS, Winter, 1996. He can be reached for comment or consultation by contacting: Knowlege Solutions, 1271 Washington Avenue #274, San Leandro, CA 94577-3646. Phone 510-483-6739.

**Look for Injuries**

The victim may be embarrassed or minimize the incident. We recommend that you look for injuries around the eyes, under the eyelids, nose, ears, mouth, neck, shoulders, and upper chest area. Look for redness, scratches, red marks, swelling, bruising, or tiny red spots (petechiae) that arise from increased venous pressure.23

**Take Plenty of Photographs and Follow-up Photographs**

We recommend at least six photographs at the scene: one full body photograph of the victim, close-up photographs of the face (2) and neck area, including the front, back, and sides of the neck and chest area. Take both polaroids and 35 mm photos. Remember: more is better.

Use a ruler to accurately measure the size of the injuries. Take follow-up photographs 24, 48, and 72 hours later (or as long as visible injuries are present).

Some agencies use UV photography to document strangulation injuries, for example, Lt. James O. Pex, Oregon State Police, Coos Bay Forensic Laboratory, and Dr. Mike West, DDS, Coroner and Chief Medical Examiner Investigator, Forrest County Mississippi. Lt. Pex uses four photographic techniques in domestic violence cases: color photography, alternative light source (narrow band light source) photography, reflective ultraviolet (UV) photography, and infrared (IR) photography.
Take care to identify the primary-aggressor

Frequently, in attempted strangulation cases there are claims of mutual combat or self-inflicted injuries. Because victims fear for their lives, they may protect themselves by trying to get perpetrators to release their holds by either pushing them back, biting them, scratching their faces, or pulling their hair.

Depending on the method of strangulation being used, the suspect may be the only individual with visible injuries.

For example, if the suspect is strangling the victim from behind and using a chokehold, the victim may protect herself by biting the suspect in the arm.

If the suspect is manually strangling the victim from the front (face to face), she may either push him away, scratch him, or pull his hair.

When officers arrive at the scene, they may find the suspect with visible injuries and the victim with no visible injuries. If both parties claim self-defense, officers need to avoid the temptation just to arrest the person who is perceived to have won the fight—or the person with no injuries. Special care must be taken to identify the primary aggressor. Also consider the following factors:

1. Height/weight of the parties.
2. Who is fearful of whom?
3. Detail of statement and corroboration.
4. History of domestic violence, assaults, or criminal history.
5. Use of alcohol or drugs.
6. Whether either party is subject to a restraining order or on domestic violence probation.
7. Pattern evidence.
8. Injuries consistent with reported statement.
9. Examine hands for any hair, blood, fiber, or evidence of epithelia cells after strangulation (fingernail scrapings).
10. Signs of symptoms of strangulation.
Encourage the Victim to Seek Medical Attention

As discussed above, there may be internal injuries to the victim that may later cause complete obstruction several hours after an injury. We recommend that patrol officers request paramedics to be dispatched to the scene to conduct an initial screening of the case. The medical examination will usually prove very helpful. It may enhance the case, as in one of our cases where the police report indicated “red abrasions to the neck” and the medical records indicated “she had multiple linear contusions to both sides of her neck with overlying redness, mild edema and tenderness.” Or, you may even save a life. It is better to intervene at the misdemeanor level than to wait until the violence escalates to a serious felony or a homicide. It is better to be safe than sorry.

Note Your Experience in Your Report

As in other criminal cases, we encourage patrol officers to note in their police reports their experience and training in domestic violence cases and strangulation training in particular.

For example:

“Based on my experience and training, I know strangulation can cause serious injury. Unconsciousness can occur within seconds. Death can occur within minutes. The symptoms and injuries in this case are consistent with someone being strangled. I strongly encouraged the victim to seek medical attention. The elements of (list crime) are present for felony prosecution.”

Obtain copies of your 911 Tapes

Because at least 50 percent of strangulation victims experience voice changes, it is important to obtain a copy of the 911 tape. If the victim called 911 to report the incident, you may have evidence of her voice changes.

Tape Record Your Follow-up Investigations

As a result of the strangulation training and application of the follow-up questions, our San Diego Police detectives note that in approximately 8 out of 10 cases victims reported changes in their voices. Based on this anecdotal evidence, it is important to tape record or video tape your follow-up investigations in order to document voice changes for later evaluation by your medical experts.

Use Forensic Investigators and Nurses at Time of Investigation

As a pilot project, involving attempted strangulation cases, the San Diego City Attorney’s Office has enlisted the help of a forensic nurse. She will be conducting follow-up examinations, taking follow-up photographs, and assisting prosecutors by interpreting medical records and pointing out the significance of signs and symptoms in our strangulation cases.
**Use Expert Witness at Trial**

Even when the victim has not obtained medical treatment, it is important to use medical experts at trial in order to educate the jury and the judge about the seriousness of strangulation. Jurors and Judges need to know that strangulation can cause unconsciousness within seconds\textsuperscript{25} and death within minutes.\textsuperscript{26} They also need to know that symptoms are important evidence of strangulation and that victims can die from strangulation without a single mark.\textsuperscript{27}

Expert testimony is admissible on a “subject that is sufficiently beyond common experience that the opinion of an expert would assist the trier of fact.” California Evidence Code section 801.

Expert witnesses can be used for various reasons, including teaching the jurors about medical, technical, or scientific principles or expressing an opinion after evaluating the significance of the facts of the case.

Ultimately the judge will decide whether a witness is qualified as an expert to express an opinion on strangulation. Below are some areas you may ask in order to lay the foundation for your expert’s qualifications:

1. Education
2. Training
3. Licenses and certificates
4. Work experience
5. Teaching experience
6. Published writings
7. Professional organizations
8. Previously qualified as an expert witness.

Below are some questions you may ask your expert about attempted strangulation:

1. Have you had the opportunity to examine patients who have reported being strangled?
2. Are you familiar with the signs and symptoms of strangulation? Describe them.
3. Are you familiar with the methods of strangulation? Describe them.
4. Would a chart help you explain those symptoms and methods?
5. How does a victim lose consciousness from strangulation?
6. How does death occur from manual strangulation?
7. How long would it take to manually strangle someone to death?

8. Is it possible to strangle someone to death without leaving any marks?

9. Are you familiar with the injuries and symptoms of the case and how?

10. Have you had the opportunity to review the police report, 911 tape, paramedic run sheet, medical records?

11. In your opinion, are the signs and symptoms, consistent with strangulation?

Below are some questions used by San Diego County Deputy District Attorney Dan Goldstein in a homicide case:

1. Are you a medical examiner?

2. How long have you been a medical examiner?

3. What specific training goes into becoming a medical examiner?

4. What are your duties?

5. What is an autopsy?

6. How many autopsies have you conducted in your career?

7. Have you testified in court?

8. What is a witnessing pathologist?

9. Were you the witnessing pathologist on *** during an autopsy of the victim?

10. Who was the pathologist?

11. Did you review the pathologist’s report?

12. Please describe the external trauma of the victim that you saw.

13. Ask the witness to describe photos and injuries.

14. Ask the witness to describe any injuries to the eyes, face, and mouth.

15. Ask the witness to describe internal injuries.

16. What was the cause of death?
17. What are the reasons you believe the victim died from strangulation?

Conclusion:

Strangulation has only been identified in recent years as one of the most lethal forms of domestic violence. When perpetrators use strangulation to silence their victims, this is a form of power and control. This form of power and control has a devastating psychological effect on victims and a potentially fatal outcome.

Historically, “choking” was minimized and rarely prosecuted as a serious offense because victims will minimize the level of violence; and, uninformed officers and prosecutors may fail to recognize it. With proper training and education, we can all improve our documentation, investigation, and prosecution of strangulation cases with immediate results.

Today, many strangulation cases are being elevated to felony level prosecution due to the risk of death during the violence. Cases we once thought were unpunishable are now being routinely submitted for either felony or misdemeanor prosecution.

More importantly, if their cases will spur us to improve our investigation and prosecution of strangulation cases, Casondra Steward and Tamara Smith will not have died in vain.

About the authors:

Dr. George McClane is a 1985 graduate of the College of Human Medicine in Michigan State University. He completed a residency in Emergency Medicine at Boston Medical Center, Boston University School of Medicine and in 1990 served as Chief Resident in his final year. Dr. McClane has lectured extensively on the medical aspects of domestic violence, in both national and international conferences as well as at the University of California, San Diego, School of Medicine. Currently, he is an emergency physician at Sharp Grossmont Hospital in San Diego. In addition to full-time clinical work, he serves as an associate professor of community medicine for Stanford Medical School, serving as an instructor in emergency medicine for the Sharp Family Practice Residency Program. Dr. McClane lives in Point Loma with his wife and daughters.

Gael B. Strack graduated from Western State College of Law in December 1985. In June 1986, she started her legal career as a defense attorney in San Diego with Community Defenders Inc. She also worked as a deputy county counsel in juvenile dependency. In 1987 she became a Deputy City Attorney, and in December 1996 she became Assistant City Attorney (Special Projects) for the San Diego City Attorney’s Criminal Division. She oversees many of new initiatives in the area of Family Violence. Prior to this appointment, Gael was the Head Deputy City Attorney for the Child Abuse and Domestic Violence Unit. Ms. Strack has lectured locally, nationally, and internationally on the issues of domestic violence, child abuse, elder abuse, and violence against women. She is the Past Chair of the Education Committee of the San Diego Domestic Violence Council, which is focusing on teen dating violence, Chair of the Elder Abuse Prevention Project, Co-chair of the San Diego Domestic Violence Fatality Review Team, Chair Elect of the San Diego Domestic Violence Council, and a coordinating committee member of the Violence Against Women Act Task Force. Gael has worked on a number of domestic violence outreach programs throughout her career as a prosecutor. For further information, contact Gael Strack at gbs@cityatty.sannet.gov


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25. *Deaths Allegedly Caused by the Use of “Choke Holds.”* E. Karl Koiwai, M.D.

26. *State v. Carter*, 451 S.E.2d 157 (1994), [where expert testified manual strangulation would have taken four minutes for death to occur]; *State v. Bingham*, 719 P.2d 109 (1986) [three to five minutes]; and *People v. Rushing*, case no. SCD 114890 (1986), [court transcript where Deputy District Attorney Dan Goldstein elicited the following expert testimony from Dr. Christopher Swalwell: “The minimum amount of time to strangle somebody is somewhere around a minute to two for them to die, but obviously it could be longer.”]