

The Evaluation and Treatment of Non-Fatal Strangulation in the Health Care Setting *International Association of Forensic Nurses*

Problem Statement

Strangulation as a result of external pressure or blunt force trauma to the neck is a type of asphyxia characterized by closure of the blood vessels or air passages (Anscombe, A.M., Knight, B.H. 1996). Studies indicate that 23-68% of female domestic violence victims will experience at least one strangulation related incident at the hands of their abusive male partner during their lifetime (Wilbur, 2001). In addition, women who experience intimate partner sexual violence often experience strangulation as a co-occurring issue (Shields, 2010). Strangulation is one indicator of violence escalation that poses an increased risk of serious morbidity and mortality in cases of intimate partner violence (Turkel, 2007; Strack, 2011).

While patients may present with potentially lethal conditions such as fractured trachea, carotid aneurysm or cerebral artery infarct (Knight, 1996), similar to patients who've experienced blunt force trauma to the neck from accidental means (McKevitt, 2002), frequently there are no external evidence of injury from strangulation (Clarot, 2005; Taliaferro, 2009), even in fatal cases. Patients may experience anoxic brain, or they may have serious internal injuries resulting in permanent impairment or death days or weeks after the strangulation event (Clarot, F., Vaz, E., Papin, F., & Proust, B., 2005). Anyone presenting with a potential strangulation injury should have a thorough medical evaluation (Faugno et al. 2013).

Until the early 2000's, strangulation research focused on homicide victims and autopsy findings. Nonfatal strangulation, particularly in relation to domestic and sexual violence, is a relatively new area of inquiry (McClane, Strack, & Hawley, 2001). Even with emerging research in this area, not all patient populations have been addressed. Elderly patients, and populations of color, including Native American/Alaska Native patients, are significantly under-represented in the existing literature. Additionally, there is little empirical data on nonfatal strangulation in the pregnant patient population and corresponding fetal impact(s). Likewise, there has been no direct correlation proven between nonfatal strangulation and miscarriage, although some literature has noted that some women have experienced a miscarriage or fetal demise after a nonfatal strangulation event (Douglas & Fitzgerald, 2014; Smith, Mills, & Taliaferro, 2001; Funk & Schuppel, 2003).

Similarly, research with children is limited, even though children can be presumed at greater risk of life-threatening injuries if strangled due to the variation in anatomy and physiology compared to adults. A child's airway is smaller and therefore easier to occlude than an adult. Relatively minor changes such as neck flexion or swelling can completely occlude a child's airway (Adewale, L., 2009). The muscle and ligament development in the neck is significantly less than that of adults with a larger head proportion (Jain et al., 2009). The cervical spine of a child is more prone to injury and flexes at a higher level than the

adult and there is an increased risk of spinal cord injury (Adewale, L., 2009). Cognitive and developmental differences may make it difficult for a child to effectively describe the strangulation event. (Baldwin-Johnson, C., Wiese, T., 2015).

Because the clinical presentation can vary to include a patient without visible injury, and because the patient may not mention the strangulation component of their assault, asking about strangulation directly is an important aspect of clinical care (Pierce-Weeks, 2015). Many first responders, from EMS personnel to Emergency Department providers, lack specialized training to identify the signs and symptoms of strangulation. This lack of education has led to the minimization of strangulation as a serious, life-threatening risk to the short and long term health of the patient who has experienced it.

Position

We believe that globally, systems should be in place to support universal screening with detailed medical-forensic assessments performed on patients of all ages who have experienced strangulation. First responders, including EMS and Emergency Department providers, must be trained in screening, assessment, documentation, intervention and follow-up services. Additionally, we recognize the importance of a collaborative, trauma-informed approach to patients who have experienced strangulation that includes skilled healthcare providers, sexual assault and intimate partner violence advocates, child and adult protection, law enforcement and prosecution. Evidence-informed training, funding, and support should be provided to ensure that universal access to comprehensive medical-forensic evaluation and treatment is available for every patient who has experienced strangulation. Recognizing these issues, we recommend that:

- 1. Where possible, forensic nurses are utilized in collaboration with other providers to address the health care needs of the strangled patient population.*
- 2. Health care providers delivering emergency services receive training specific to the screening, medical and radiologic assessment, documentation, medical intervention, and follow-up care.*
- 3. Health care providers caring for victims of known or suspected sexual assault, intimate partner violence, elder abuse as well as child maltreatment should routinely screen for strangulation and understand the laws for reporting.*
- 4. Health care agencies delivering emergency services should adopt evidence-based, multi-disciplinary policies and procedures that are current and well understood by staff in order to facilitate the screening, assessment and intervention process;*
- 5. Health care agencies should ensure consistent access to trained providers within the agency, and should develop and maintain collaborative relationships with outside agencies (i.e. Law enforcement, advocacy and prosecution).*
- 6. Health care providers that assess and treat strangulation patients include a detailed, strangulation-specific assessment as a standard component of the medical-forensic examination including protocols for medical/radiological evaluation danger assessment and safety planning (to be completed by medical or advocacy professionals).*

7. *Patients receiving health care associated with a strangulation event have access to advocacy and supportive services.*

Rationale

There are early descriptive publications highlighting the lethality in case studies associated with strangulation in adults and children (Jain et al.2001, Glass, N., et al., 2008). The documentation of the interrelationship between strangulation, intimate partner violence and sexual assault demonstrates 47-68% of women who reported domestic violence also reported one or more strangulation events (Stapczynski, 2010; Smith, Mills, & Taliaferro, 2001). Nonfatal strangulation is a strong predictor of future violence and a significant risk factor for homicide or attempted homicide (Glass, Laughon, Campbell, Wolf, Block, Hanson, Sharps, & Taliaferro, 2008). Implementation of evidence based best practices is necessary for all protocols used by medical, forensic and radiological professionals during evaluation of the patient identified as a victim of strangulation, particularly in the follow up care (Stapczynski, 2010; Smith, Mills, & Taliaferro, 2001). The published literature is consistently absent of evidence-based protocols or approaches to the identification and medical management of strangulation in organizational documents and juried journals (Pritchard A., Reckdenwald A., Nordham, C., 2015), making it impossible for standardized care. Morbidity and mortality associated with strangulation demands a standardized multi-disciplinary approach to the medical-forensic evaluation of a patient identified as a victim of strangulation.

References

Adewele, L. (2009), Anatomy and assessment of the pediatric airway. *Pediatric Anesthesia*, 19(s1), 1–8.

Harless, J., Ramaiah, R., & Bhananker, S. M. (2014). Pediatric airway management. *International Journal of Critical Illness and Injury Science*, 4(1) 65–70.

Anscombe, A.M., & Knight, B.H. (1996). Case Report. Delayed death after pressure on the neck: possible causal mechanisms and implications for mode of death in manual strangulation discussed. *Forensic Science International*, 78(3), 193-197.

Baldwin-Johnson, C. & Wiese, T. (2015).“Strangulation in Children.” *Responding to Strangulation in Alaska: Guidelines for Law Enforcement, Healthcare Providers, Advocates and Prosecutors*. San Diego: Training Institute on Strangulation Prevention, 48-57.

Clarot, F., Vaz, E., Papin, F., & Proust, B., (2005).Fatal and non-fatal bilateral delayed carotid artery dissection after manual strangulation. *Forensic Science International*, 149, 143-150.

Douglas, H. & Fitzgerald, R., Strangulation, (2014). Strangulation, domestic violence and the legal response. *The Sydney Law Review*., 36, 231.

Faugno, D., Wasnak, D., Strack, G. B., Brooks, M.A., Gwinn, C. (2013). Strangulation forensic examination - best practice for health care providers. *Advanced emergency nursing journal*, 35(4):314-327

Funk, M. & Schuppel, J. (2003). Strangulation injuries. *Wisconsin Medical Journal*, 102(3): 41-45

Glass, N., Laughon, K., Campbell, J., Block, C. R., Hanson, G., Sharps, P.W., & Taliaferro, E. (2008). Non-fatal strangulation is an important risk factor for homicide of women. *The Journal of Emergency Medicine*, 35(3), 329–335.
<http://doi.org/10.1016/j.jemermed.2007.02.065>

Jain, V., Ray, M., Singhi, S.,(2001). Strangulation injury, a fatal form of child abuse. *The Indian Journal of Pediatrics*, 68 (6), 571-572.

McClane, G. E., Strack, G. B., & Hawley, D. (2001). A review of 300 attempted strangulation cases, part II: clinical evaluation of the surviving victim. *Journal of Emergency Medicine*, 21(3), 311-315.

McKevitt, E.C., Kirkpatrick, A.W., Vertesi, L., Granger, R., Simons, R.K., (2002). Blunt vascular neck injuries: diagnosis and outcomes of extracranial vessel injury. *Journal of Trauma and Acute Care Surgery*, 53(3), 472-476.

Pierce-Weeks, J., & Lechner, M. (2015). Strangulation in the living intimate partner violence patient. In *Violence against women: contemporary examination of intimate partner violence* (pp. 277-291).

Pritchard, A. J., Reckdenwald, A., Nordham, C., (2015). Nonfatal Strangulation as Part of Domestic Violence: A Review of Research. *Trauma, Violence & Abuse*, 1524838015622439.

Sabo, R.A., Hanigan, W.C., Flessner, K., Rose, J., Aaland, M., (1996). Strangulation injuries in children. Part 1. A clinical analysis. *Journal of Trauma and Acute Care Surgery*, 40(1), 68-72.

Sabo, R.A., Hanigan, W.C., Flessner, K., Rose, J., Aaland, M. (1996). Strangulation injuries in children. Part 2. Cerebrovascular hemodynamics. *Journal of Trauma and Acute Care Surgery*, 40(1), 73-77.

Shields, L.B., Corey, T.S., Weakley-Jones, B., & Stewart, D. (2010). Living victims of strangulation: a 10 year review of cases in a metropolitan community. *The American Journal of Forensic Medicine and Pathology*, 31(4), 320-325.

Smith, D. J., Mills, T., & Taliaferro, E. H. (2001). Violence: recognition, management, and prevention frequency and relationship of reported symptomology in victims of intimate partner violence: the effect of multiple strangulation attacks. *The Journal of Emergency Medicine*, 21(3), 323–329

Stapczynski, J. S. (2010). Strangulation injuries. *Emergency Medicine Reports*, 31(17), 193-203

Strack, G., & Gwinn, C. (2011). On the edge of homicide: Strangulation as a prelude. *Criminal Justice*, 26(3), 32-36.

Taliaferro, E., Hawley, D., McClane, G., & Strack, G. (2009). Strangulation in intimate partner violence. *Intimate partner violence: A health-based perspective*, 217-235.

Turkel, A. (2007). "And Then He Choked Me". *Understanding and investigating strangulation. Update: American Prosecutors Research Institute*, 20, 1-2.

Wilbur, L., Higley, M., Hatfield, J., Suprenant, Z., Taliaferro, E., Smith, D.J., & Paolo, A., (2001), Survey results of women who have been strangled while in an abusive relationship. *The Journal of Emergency Medicine*, 21(3), 297-302.

Developed: 2016

©International Association of Forensic Nurses, 2016