

# Collar Entrapment, Strangulation and CPR Techniques

by Teresa M. West-Holmes

Collar entrapment and subsequent strangulation is life-threatening for the dog involved and presents a dangerous situation for humans and other nearby animals. Good equipment and sensible prevention practices can minimize the chances of a strangulation occurring in the first place, but even best practices cannot guarantee that accidental strangulation will never occur. In the event of a strangulation accident, CPR (Cardiopulmonary Cerebral Resuscitation) may help to revive a dog and restore it to full mental and physical function.

The purpose of this article is twofold: to examine collar-entrapment from an equipment perspective and to give instruction on how to deal with it in the unfortunate case that it arises.

## Foundation of the Problem – The Collar Under Tension

Collars are valuable pieces of equipment for dog-owners, allowing both control of the dog and a conventional location for identification. However, collars present the potential for entrapment and strangulation. Some collars are “non-break-away”; they are not designed to break under pressure. Examples of this class include metal buckle styles, martingales, and chain training collars. Entrapment with this style of collar will not resolve until the collar breaks (unlikely) or tension is removed. This class of collars is especially dangerous to use without supervision. One of the most common collar entrapment and strangulation accidents is caused by metal training collars left on unattended puppies/dogs in kennels.

Aware of this potential, many fanciers use “break-away” collars when their dogs will be unattended. The most common of these are cotton or nylon web collars with a plastic buckle or “safety” clasp, similar to child seatbelts in grocery carts. A dog hanging from a fence, for example, or a similar non-twisting entrapment of the collar *may* apply enough tension to the buckle to either cause it to either pull apart or fracture; however, with large clasps and/or heavy plastic, this may not occur.

In such a situation, a human will usually be able to release the buckle, perhaps by first relieving the tension on the collar. However, this is not the case with a twisting entrapment. A common scenario for this is a collar entrapment between two dogs, wherein one dog’s collar gets trapped on the lower jaw of the other. The ensuing struggle to break free may result in the collar being tightened like a noose.



“Non-Break-Away” Collars



“Break-Away” Collars

### Give This Test A Try...

Think your dog's break-away collar will give way under a twisting tension?

Fasten the collar around a post, and twist until it is tight, then try releasing the buckle. (Fig A)

Alternatively, have a strong person hold the collar and attempt to pull it straight apart while you try to release it. (Fig B) Many "break-away" collars are difficult to release even in this test without any twisting.



A



B

Buckle not releasing under either twisting or extreme lateral tension.

These images were taken of a Lupine large-dog adjustable collar (1" width) with side release buckle.

The collar on the left is brand new; the collar on the right was part of a collar entrapment and strangulation accident. Note how there is very little damage to the collar webbing and no damage to the buckle despite the extreme tension and abuse the collar on the right went through while attempts were made to release the buckle, as well as cut though the collar with kitchen shears.



L- New Collar, R- Collar from Entrapment Accident

My favorite example of a true "break-away" collar is the KeepSafe® Break-Away Collar made by Premier Pet Products. Designed to prevent dogs from getting entangled by their collars, the KeepSafe® Break-Away Collar has a patented break-away safety buckle that releases when pressure is applied. (This now adorns the neck of every dog in our home as their "everyday" collar.)



## Relieving Tension During A Two-Dog Entrapment

Suppose a dog has become entrapped in the manner described above. What should you do? We'll call the dog being strangled the "wearer" and the dog with its jaw trapped in the collar the "entrapper."

- 1) Lessen the chance of spinal trauma – Often the entrapper is roughly the same size as the wearer. Do your best to stop the entrapper from dragging the wearer around. This can cause severe or even fatal trauma to the cervical spine (neck) of the wearer.
- 2) Attempt to cut the collar – This must be approached with extreme caution. Attempting to cut the collar can severely injure the wearer, the entrapper or even yourself (especially when struggling against panicked, thrashing dogs). Often the collar is tightened around the neck of the wearer to the extent that the blade of a knife or pair of scissors/shears cannot be inserted between the skin and the collar. When faced with such a situation, an extremely sharp knife (e.g. a buck knife) can be used in an attempt to cut through the collar from the top down. Sometimes this is not an option because of risk of injury to the human involved or because a sufficiently sharp instrument is not available.
- 3) One last chance – When all else fails, struggling against one dog instead of two can make the situation more easily surmountable. By the time all other options have been exhausted, the wearer is most likely nearing the end, collapsing from lack of oxygen and blood flow to the brain. Once this is the case, the wearer will no longer struggle against rescue efforts or oppose tension from the other dog. With the wearer limp, it is now possible to roll the dog laterally, using the entire body to untwist the collar. It may take several turns before tension is released enough to free the entrapper. Rolling a flaccid large breed dog is most easily done by grabbing the front legs (paired together in one hand) and the rear legs (paired together in your other hand) and pulling the legs either up and over the body or under the body (as dictated by the direction of the twist in the collar).



Flip body by coupling the legs in each of your hands.

## Dealing With The Post-Trauma – The Wearer Is Responsive and Able To Breathe Unassisted

Once the wearer has been separated from the entrapper, both dogs must be assessed; however, the wearer, being the more critical of the pair, obviously should be addressed first, but don't forget about the entrapper.

If breathing unassisted, the wearer should be immediately transported to the nearest veterinary facility for examination and diagnostics. Even if the dog seems fine severe and possibly life-threatening health

concerns can arise shortly after the incident. Because of this, even seemingly normal dogs may need to be hospitalized for observation. If the wearer is released back into the owner's care after examination, the dog should be closely monitored for at least 24 hours after the event. If at any point, concerning symptoms develop, the dog should be returned immediately to the veterinary office for reassessment. The most serious injuries to the wearer include noncardiogenic pulmonary edema (fluid in the lungs), cerebral edema (brain swelling), spinal trauma, tracheal (airway) trauma, retinal detachment and/or proptosed (luxated) eye(s).

Symptoms of noncardiogenic pulmonary edema include, but are not limited to:

- *Difficulty breathing*
- *Increased respiratory rate*
- *Standing in unusual positions to breathe easier*
- *Pale or bluish gums*
- *Spitting up pink, frothy saliva, or bubbles of saliva*
- *Increased heart rate*

Symptoms of cerebral edema include, but are not limited to:

- *Irregular breathing*
- *Nausea or vomiting*
- *Vision loss*
- *Ataxia/loss of coordination*
- *Inability to walk*
- *Stupor*
- *Seizures*
- *Loss of consciousness*

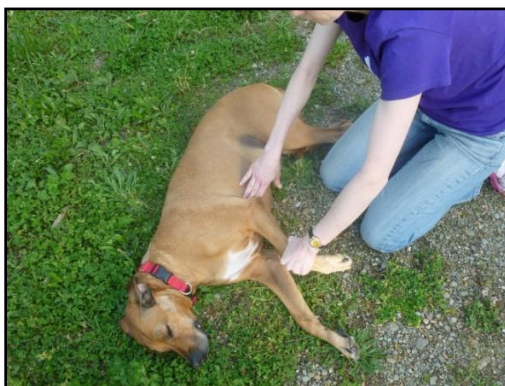
Like the wearer, the entrapper also runs the risk of sustaining injury during the event. Spinal trauma, jaw dislocation and/or fracture, and trauma to the dentition are all common injuries sustained by the entrapper.

### **Dealing With The Post-Trauma – The Wearer Is Unresponsive and Requires CPR**

What is CPR? This refers to Cardiopulmonary *Cerebral* Resuscitation. The emphasis is on ensuring not just respiratory support but also circulatory support and blood flow to the brain. If one is faced with performing CPR on a dog, it should be performed quickly but calmly and methodically. Getting in a hurry or panicking does no good for the rescuer or the dog; staying calm, thinking as clearly as possible, and being as methodical as possible will render the best possible results.

### **CPCR Techniques For The Large Breed Dog**

- 1) *Assess Cardiac Effort* – Watch for signs of a heartbeat; look, listen and/or feel the chest for cardiac effort, or feel for a pulse on the inner thigh. (Fig 1a, 1b)



1a. Look, feel, and listen to the side of the chest where the elbow meets the ribs; this is a common place to find the heartbeat on thinly-built breeds such as sighthounds.

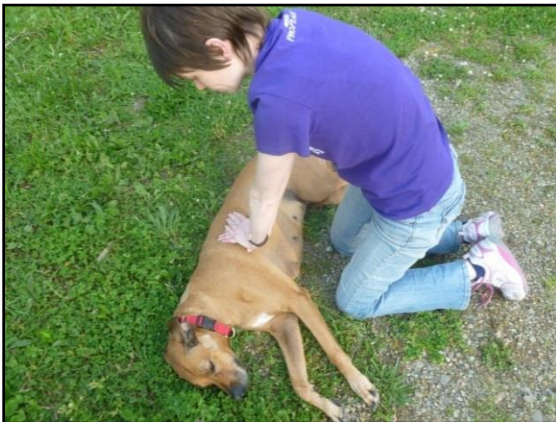




1b

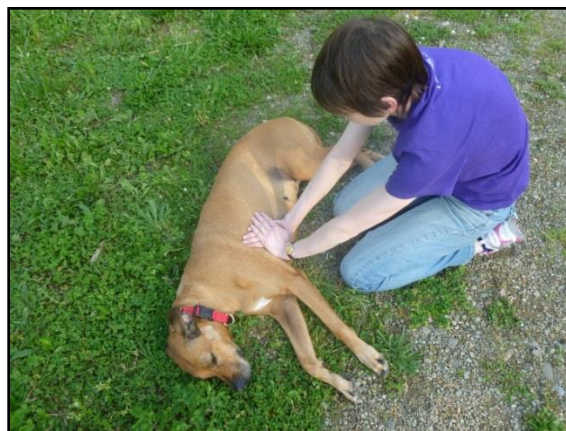
Locate a structure that feels like a "cord" that runs down the middle of the inside of the thigh; use your finger tips to feel for a pulse.

- 2) *Initiate Compressions* – If no pulse or heartbeat is detectable, lay the dog out flat on its side with legs/feet pointed towards you. Begin by compressing the *middle* of the chest forcefully downward. Compressions should not be performed on the apex of the chest/towards the spine, as this will push the dog away from the rescuer and render compressions nearly worthless. (Fig 2)



2

Good Compression Form



Bad Compression Form

- a. Two People – Person A compresses the chest with straightened arms, palms overlapping and flat to the side of the chest, while Person B compresses the abdomen with

straightened arms, palms overlapping and flat to the side of the abdomen. Chest and abdomen compressions are performed in an alternating, cyclical cycle. Compressions to the chest should be around 100 per minute. Because of the relentless rhythm, around 100 beats per minute, Queen's "Another One Bites The Dust" and "Stayin' Alive" by the Bee Gees are tunes everyone knows and can help you maintain a good compression rate and rhythm. (Of course, "Stayin' Alive" has a more apt song title!) (Fig 2a)

- b. One Person, Chest Compressions Only – One-person compressions can be done either while kneeling beside the dog or straddling the dog. Compress the chest with straightened arms with palms overlapping and flat to the side of the chest. Because one-person CPR is exhausting and there is no back-up available, keeping the compression rate near 60 beats per minute can help you sustain your efforts for a longer period of time. An easy song choice here is The Tokens' "The Lion Sleeps Tonight." (Fig 2b)
- c. One Person, Chest and Abdominal Compressions – This technique is for a small-statured person who might lack the upper body strength to administer effective compressions when administering CPR to a large breed dog. While kneeling next to the dog (with dog's legs/feet pointed towards you), lean over the top of the dog, place your hands on the ground, shoulder-width apart and wrists snug against the dog's back. Your chest should be over the last 2 or 3 ribs and the cranial (upper) part of the dog's abdomen. With your weight resting on your palms, place one knee over the middle of the dog's chest and one knee over the middle of the dog's abdomen. Use your legs and knees to compress the chest and abdomen in an alternating, cyclical cycle, simulating peddling a bicycle. Keep the upper leg straight (do not sit back on your feet), envision pressing the knee and shin directly into the ground below with each compression. Compressions to the chest should be around 60 beats per minute; again, using "The Lion Sleeps Tonight" helps to keep the rate and rhythm. (Fig 2c)



2a

2-Person CPR





2b

1-Person CPR, Chest Compressions Only

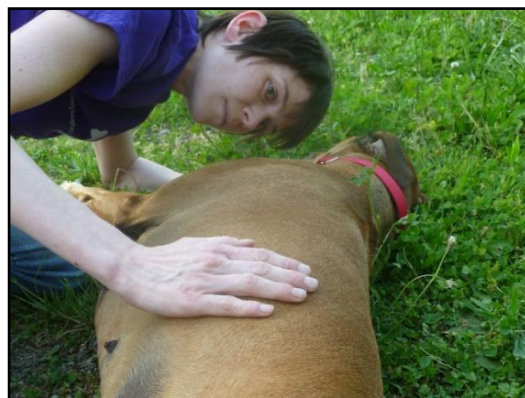


2c



1-Person CPR, Chest & Abdominal Compressions

- 3) *Assess Breathing* – Watch for the chest to rise and fall. Looking down the horizon of the dog (from head to tail with you ear next to the dog's face) is an easy way to visually detect even minor respiratory effort and while listening for air passage through the mouth or nose. (Fig 3)

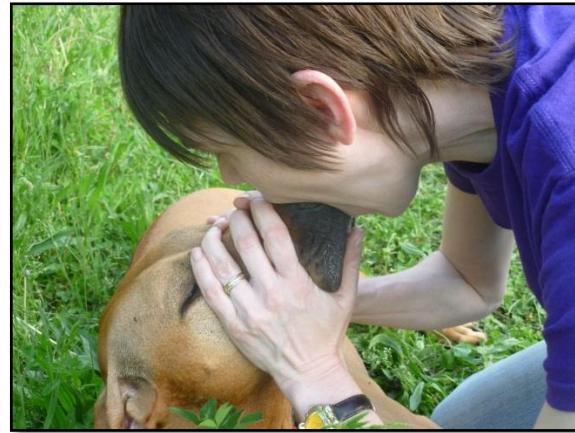


3

- 4) *Assist Respiration* – If no respiratory effort is noted, artificial respirations or rescue breaths can be administered. This is done by enclosing the tongue in the mouth, pulling the flews/lips firmly down, cupping the sides of the muzzle to hold the lips in place (this keeps air from escaping though the sides of the mouth), then firmly and steadily blowing air into the dog's nose. (Fig 4) Watch for the chest to rise with each rescue breath administered. If enough people are available to assist, rescue breaths can be performed by a third person while chest and abdominal compressions are being administered, otherwise, compressions can be halted temporarily while a series of 3 breaths are given. Approximately 12-20 rescue breaths should be administered per minute, but priority should always be placed on compressions.



Watch for Respirations



Administering Rescue Breaths

- 5) *Continue to Monitor* – Stop periodically to assess the dog. Repeat steps 1 and 3 every 60 to 90 seconds and continue CPR if no respiratory and cardiac effort is detected. Discontinue CPR if the dog is showing signs of respiratory and cardiac effort but monitor closely to ensure continued improvement; resume CPR if dog ceases to have a detectable heartbeat.
- 6) *No Response* – When exhaustion overcomes the rescuer(s), CPR should be ceased. Yes, this is an excruciatingly difficult choice to make. However, if you are feeling light-headed or otherwise unwell, your health must take priority and resuscitative efforts must stop. This is especially true if you are the only rescuer because there are no additional people to help *you* if your physical condition deteriorates to the point of requiring assistance. Likewise, if the dog has shown no response to your efforts after 10-15 minutes, successful revival and recovery is very unlikely. Sometimes the kindest thing for you and them is to say “enough is enough.”

### **My Recent Encounter With Collar Entrapment**

The inspiration for writing this came from a collar entrapment that occurred in our household on May 15, 2013. As they are every day, our dogs were outfitted with what I assumed were play-appropriate collars and were let out to sun themselves in the yard before breakfast. After hearing what was obviously distressed vocalizations coming from the yard, I bolted out the door and rounded the corner of the house to the backyard. I could see our alpha bitch, Nyea, was also confused and distressed about the interaction between two of the other dogs and was attempting to break up what, I can only assume she perceived to be a fight between our 6-month-old puppy, 52lb “Kin-dah” and our nearly 10-year-old



bitch, 77lb “Ekundu.” As I approached the writhing mass of entangled dogs, instead of a fight, I could see Kin-dah’s jaw had become entrapped in Ekundu’s collar (most likely during play). Kin-dah had then managed to twist the collar multiple times in an effort to free herself, but this only further tightened the collar’s hold on her jaw and was strangulating Ekundu. The plastic safety buckle on Ekundu’s collar was perfectly oriented on the back of her neck; I grabbed hold of it, depressed the sides of the buckle to release the collar and...nothing! The buckle released but only opened an eighth of an inch or so. I pulled and swore and pulled some more, but the buckle would not give any more.

At this point, I figured cutting the collar was my next best option, so I ran back into the house and retrieved a pair of kitchen shears. Unfortunately, the collar was too tight for the shears to be inserted under the collar and the collar too thick and difficult to cut, so I used them as a lever and attempted to pry the buckle apart...again nothing!

Now what? At this point, I’d followed the mass of entangled dogs approximately 20 feet across the yard. This had to stop! I commanded Kin-dah to “WAIT!” Thankfully, despite her extreme distress, she did. By this point, it was obvious I was losing Ekundu. Her eyes bulged from her head; she had thick saliva with strands of blood running though it hanging from her lips; her mucous membranes had lost all colour and were a sickly pale; her rear had given up, and her front limbs were fading quickly in their ability to push against the ground in resistance to the tension on her neck. I was losing my Bubba Kundu right in front of my own eyes, but I wasn’t giving up! Moments later, she fully collapsed, and I knew this was my last chance to change the outcome. I grabbed her legs, flipped her body over and over again, finally relieving twist in the collar enough to release from Kin-dah’s jaw. Kin-dah, no surprise, immediately bolted for the house, and I was left alone in the yard with a dead dog laying at my feet– no respiratory effort, no detectable cardiac effort.

Being exhausted already from my initial efforts to resolve the situation and the only adult home at the time, I knew my ability to do effective traditional chest compressions was no longer there, so I threw myself over Ekundu’s body and began compressions with my knees and shins. After a minute and a half of compressions and rescue breaths, her mucous membrane colour began to improve; she started to breathe on her own, and her heartbeat became strong and steady once more. Amazingly, after resting in the yard for about five minutes, she was able to get to her feet and wearily walk to the house. We then quickly left for further care and diagnostics at the clinic, where astonishingly, both dogs were discovered to have no significant injuries. After several days of close monitoring, anti-inflammatory medications, pain relievers and antibiotics, both girls were once again happy and healthy.



Teresa with Bubba Kundu (L) and Kin-dah (R)

I truly hope every dog fancier reading this article is never faced with this situation. Through informed collar choices, a collar entrapment should be avoidable altogether. If however, such an event does present itself, I hope the information provided can make the difference to save a dog in need.

*Teresa West-Holmes has been an emergency veterinary technician since 1997. She is also a member of the Veterinary Emergency and Critical Care Society. She and her husband, Paul, have been proud Ridgeback owners since 2002 and members of RRCUS since 2003. They share their home with their two non-fur kids, Emily and Erin; two cats, Cheddar and Cajun; and five Ridgebacks, Seti, Ekundu, Nyea, Shirley and Kin-dah.*

*A digital copy of the article can be accessed on their website: <http://www.luvakis.com>.*

*My sincerest gratitude to Dr. Ari Jutkowitz for his recent lecture on CPCR : Current Guidelines and Applications presented at CVC East, which little did I know at the time would help save my beloved Bubba Kundu's life less than 48 hours later.*