

# Restraint with ropes, especially foot exams

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As a recent graduate, one of the more daunting as well as rewarding on farm veterinary procedures is examining lame cows. The biggest challenge, however, is to be able to raise a cow's leg and immobilize it enough to perform an examination and corrective procedures, while ensuring both safety for the animal and one's own safety and welfare during the examination. Employing a few simple techniques with relatively common and inexpensive materials will help to contribute to your professional satisfaction and your clients' confidence in your competence. Using ropes to your advantage should be an integral part of your professional toolkit. Adequate and firm restraint is a highly important component of lameness work.

## Vehicle inventory

There are a number of materials that I discovered, when in active practice, that made lameness examination enjoyable, efficient and safe for both my patients, my assistants, and myself. A vehicle inventory that I would recommend would contain the following items:

- A 30-foot (10 meter) lariat with a quick-release honda on one end and a woven eye loop at the other end (Spectrum-Nasco Farm and Livestock).
- Six halters, 5 of sisal material and 1 of polypropylene (Spectrum-Nasco Farm and Livestock).
- Four oval aluminum climbing carabiners (REI) (Figure 1). Four varying lengths of chain with links of a size that allows one link to slip inside the diameter of another link (local hardware stores) (Figure 2).
- Eight or more double-snap end links to allow making a closed loop of the aforementioned chain (local hardware store, Spectrum-Nasco Farm and Livestock) (Figure 2).
- Four 15-foot (5 meter) lengths of 12- to 18-strand woven arborist rope, either ½ inch or ⅝-inch diameter (13mm and 16mm, respectively - Bailey's Chainsaw). These ropes should have a sewn-in rope thimble, which will ensure both a smooth pull as well as a long rope life (Bailey's Chainsaw or internet arborist site) (Figure 3).
- A 6-foot (2 meter) length of soft nylon web tubing with an eye loop sewn at each end (REI or internet online stores).
- A welded 3-link clevis that allows for use of the nylon webbing as a lift wrap at the level of the gastrocnemius tendon (custom-made at a welding or farm shop) (Figure 4).
- A block and tackle or fence stretcher apparatus if doing a lot of foot work (Amazon or eBay) (Figure 5).

The basic principle is that your ropes allow for the ability to provide greatly increased leverage in managing a patient that is much heavier and stronger than you are and to be able to immobilize the leg, as well as to allow for safe and efficient work with very sharp instruments in use. Not only that, but to reduce the chances that your patient could get stuck in a position or predicament that would result in injury to them, yourself or anyone assisting you. If you are only called on to do occasional lameness examinations, then you can get along quite well with just a lariat and a few halters, and the bonus is that the leverage

Figure 1: Four oval aluminum climbing carabiners.



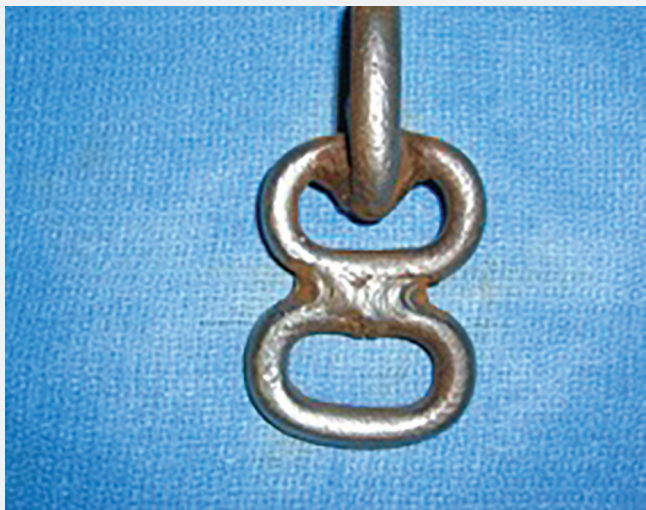
Figure 2: Lengths of chain with links of a size that allows one link to slip inside the diameter of another link.



**Figure 3:** Fifteen-foot (5 meter) lengths of 12- to 18-strand woven arborist rope, either ½ inch or 5/8-inch diameter.



**Figure 4:** A welded 3-link clevis that allows for use of the nylon webbing as a lift wrap at the level of the gastrocnemius tendon.



**Figure 5:** A block and tackle or fence stretcher apparatus if doing a lot of foot work.



principle used with it works every bit as well in a horizontal plane (think dystocia) as it does in a vertical (lameness examination) orientation. This simple technique enjoys the advantage of being able to be easily and quickly released in a hurry without jamming should the need arise, and there are not heavy components that will come flying about and potentially injure you or bystanders.

Lifting a rear leg is perhaps the most common need that we are regularly called on to perform, and the good news is that if a cow is demonstrating visible lameness, then there is a very high probability that they will have visible pathology if the time is taken to do an examination. The chances of finding it are greatly enhanced if the foot can be elevated and immobilized securely for examination and therapeutic trimming. While it is possible for some folks to physically lift and hold a cow's leg while doing this, it is both far safer and easier to use ropes and the leverage that can afford you in doing this. Additionally, both you and your patient are afforded a wider margin of safety during the examination and treatment. There are 4 basic needs to meet for this to work successfully for you. First, have her in a stanchion or halter tied to a solid and immovable object. If in a stanchion, make sure that the animal can be released should they for any reason fall while being examined and treated. In particular, beware of gang lock stanchions where there is a high curb that they are mounted on that could result in choking the animal if it were to fall. Releasing a half-ton animal that is caught like that is extremely difficult and dangerous as well as potentially fatal to your patient.

Next, find a point above the animal's height, be it fixed (vertical post or overhead beam) or moveable, (skid steer or loader bucket) for attachment of a carabiner. A gate or post that emerges

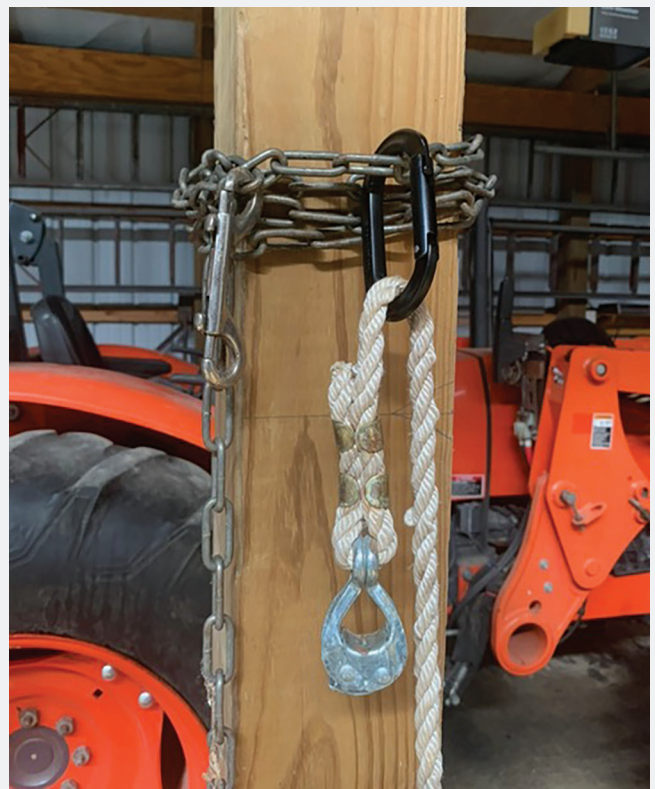
slightly beyond the rear end of the affected animal that can be used to hold the foot securely during the exam and trim. The rear leg can be raised using either your lariat attached to function as a block and tackle, or you can purchase a block and tackle apparatus from many readily available local or on-line sources. If one is doing frequent lameness exams, I would recommend the latter as a must have for your practice vehicle since they are fast to set up and use, and given their lower coefficient of friction, make lifting effort less. The lariat, however, can also be fashioned into a makeshift block and tackle utilizing a carabiner that is attached overhead via a chain loop or a multiple wrapped halter (Figures 6 and 9).

Step one is to place a loop of the lariat through the gate of the carabiner (Figure 6) and carry the honda end down to the level of the animal's hock where it is wrapped around the leg and then back over the vertical portion of the loop that was just pulled down and back over itself again (see Figure 7) to form a choker loop. The honda end is then passed aback around the front of the leg where it just came from and then passed out through the choker loop that has been formed with only a short length of the honda sticking out from the loop (Figure 8). The side of the lariat that was through the carabiner without the honda on it is then placed in the honda and closed in it. This segment of the rope is then pulled back up to and through the overhead carabiner again. Now there are two loops of rope through the carabiner and one through the honda at the level of the hock. The end that emerges from the overhead carabiner (Figure 9) can be then pulled on and used to lift the leg. Often the cow will shake the leg with the loop around the hock, thus making the lifting effort required a good bit less. Once the leg is at a satisfactory height, the lariat can either be held by an assistant or tied off with a halter tie. The foot is then further secured the more rigid object with a number of wraps and again, either held or tied off by an assistant. The advantage here is that if the patient should slip or fall, the foot and leg can be easily and quickly released in relative safety.

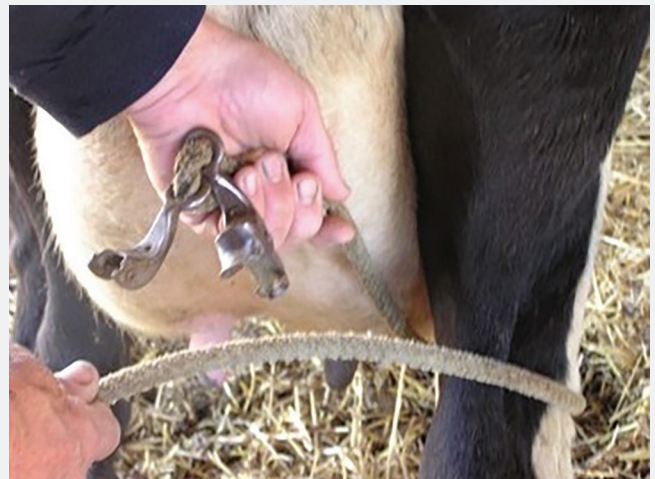
When used in a horizontal manner, this same principal can be employed for providing steady, firm and anatomically correct direction of pulling (Figure 10). This assumes that any malposition of the calf has first been corrected. The advantage that this method affords over a calf jack is that of both safety for those assisting and the ability to take advantage of gravity. It is easy to vary the weight on the rope by the number of people sitting on or standing on it, and it allows for a more natural calving by allowing the tissues along the birth canal to stretch and dilate thus reducing the chances of a tear. To be sure, there are times when there is no substitute for a calf jack's attributes, but they are often and easily misused in dystocia management in my opinion. The lariat utilized in a dystocia is quick to set up, requires a minimum of cleanup, helps to prevent the loss of other dystocia equipment (OB handles and snares) and is essentially jam proof. The veterinarian and their assistant(s) are far less likely to suffer muscle and back strain or injury as well.

The following are a few tips to keep in mind. First, try to avoid putting ropes around square posts or other sharp angles where they will be subjected to heavy strains. This will cause premature fraying and failure of the rope over the area that was in contact with the sharp corner of the object. Next, store ropes in an individual coiled configuration. It allows for quick and efficient retrieval from storage for deployment and avoids Gordian Knot situations. Using multistrand ropes will wear longer when used properly, but are much harder to weave into more

**Figure 6:** Carabiner attached to vertical post with interlocking chain and first loop of lariat to make a block and tackle apparatus.



**Figure 7:** First pass of the lariat around cow's hock.



**Figure 8:** Completed choker loop around cow's neck.



**Figure 9:** Completed lariat makeshift block and tackle (this shows using an overhead pipe instead of a carabiner for the upper block).



**Figure 10:** Same configuration in horizontal position being utilized for a dystocia.



permanent configurations than standard 3-strand ropes are. When a rope thimble is incorporated in the choker end of a rope, it will greatly extend the rope's useful life. Try to avoid getting your ropes wet, especially those of sisal or natural fiber manufacture. They will swell and become very hard to use effectively. When using the interlocking chain and snap link that is in Figure 2, make certain that the snap link is *never* used to fix the chain end-to-end as it is very easily broken when attached that way, but when affixed through the loop of chain passed inside another link, it is virtually as strong as the chain is itself. Learn and practice 3-5 basic rope knots; it will help to ensure your safety and enhance impressions of your professional competence. For me, these knots are: halter tie, bowline, tail tie, square knot and Miller's knot. All of these knots and how to tie them are easily found online at [Animatedknots.com](http://Animatedknots.com). In addition, I can highly recommend finding and the purchase of the paperbound book *Restraint of Animals* by John R. Leahy and Pat Barrow. It is out of print, but copies can still be found at various websites and it is very economically priced. Being able to tie these knots under all manner of circumstances is best learned to the degree that they become pure muscle memory. Repeated practice will keep you from losing that memory as well as being able to complete them in virtually any emergency. Take care of your ropes, and they will take care of you!

