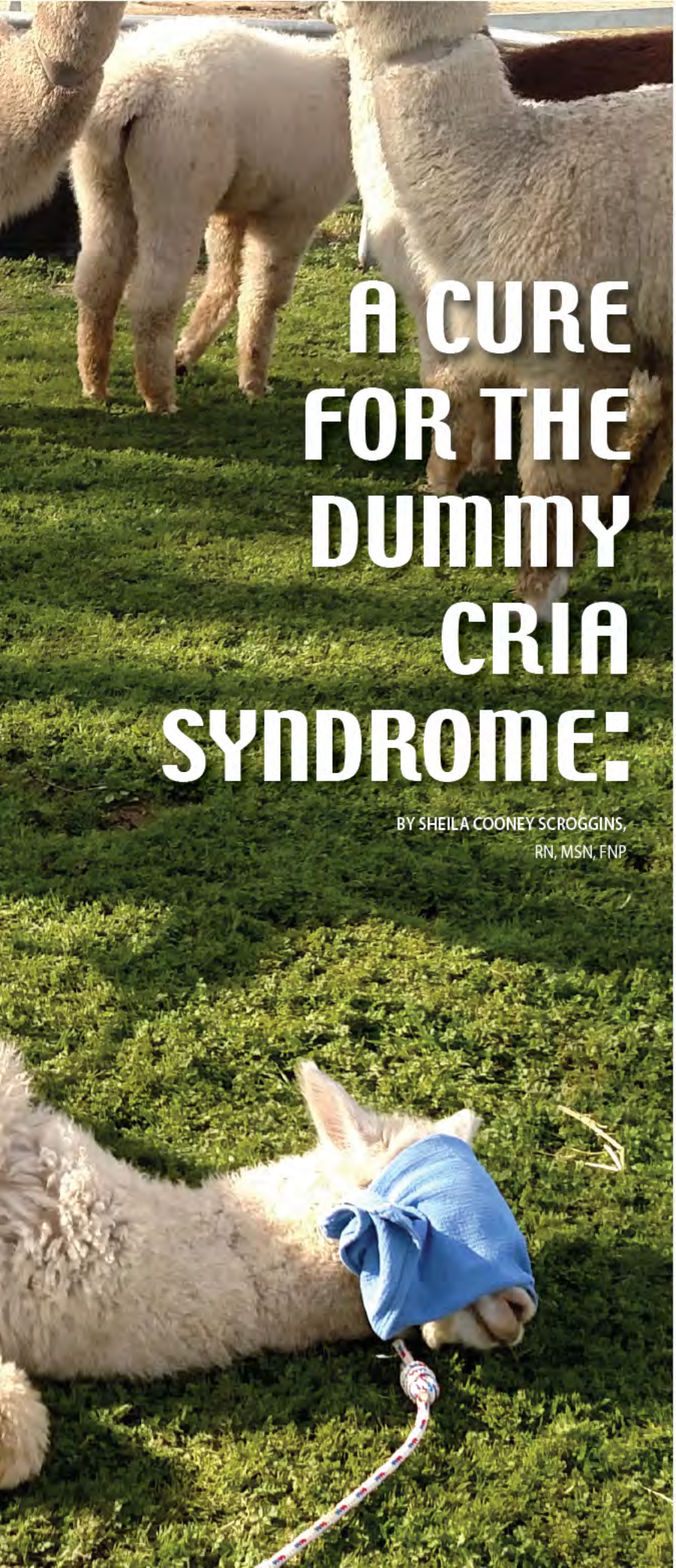
Dr. John Madigan demonstrates the squeeze maneuver for reversing symptoms of a "dummy" cria. The maneuver can be done with or without a rope. Dr. Madigan's demonstration took place during a Calpaca meeting.

Photo courtesy of the author



A CURE FOR THE DUMMY CRIA SYNDROME:

BY SHEILA COONEY SCROGGINS, RN, MSN, FNP

THE SQUEEZE MANEUVER

At the spring Calpaca (California affiliate of AOA) meeting, U.C. Davis Professor of Equine Medicine and Epidemiology Dr. John Madigan presented new research on the syndrome of dummy foals, and a methodology to reverse it.

Equine neonatal maladjustment syndrome is more popularly referred to as dummy foal syndrome. Dr. Madigan's research findings have become known as the "squeeze method." Dr. Madigan is the principle researcher in the "Clinical Trial of the Madigan squeeze method for treatment of equine neonatal maladjustment syndrome." This groundbreaking research has clear application to the health and welfare of alpacas – read on to find out how.

Since I am a lover of everything equine, I had been reading about this new research that cures the dummy foal phenomena. I could not help but wonder if it worked for camelids, so I set out to secure Dr. Madigan as a guest lecturer for Calpaca.

There is no doubt there are many similarities between equine and camelid physiology. They also suffer many of the same maladies, including the phenomena of "dummy" syndrome. At Colusa Riverside Alpacas we have had several cria with differing levels of "dummy" manifestations. I was extremely curious to see if Dr. Madigan's research could also benefit the camelid cria.

Dave Scroggins uses the squeeze maneuver on a newborn cria at Colusa Riverside Alpacas in California.

Photo courtesy of the author

SIGNS AND CAUSES OF NEONATAL MALADJUSTMENT SYNDROME

The phenomenon of neonatal maladjustment syndrome is well known to many livestock owners. Conventional wisdom says it is caused when the brain suffers a hypoxic event during the birth process, leading to brain dysfunction after birth. There is one big flaw with this supposition – some of maladjusted crias resolve their symptoms within a few hours or days after birth. In my reading, it appears hypoxic brain injury does not typically resolve in this manner.

In a 1996 article on neonatal maladjustment syndrome by Hess-Dudan and Rossdale, the authors state the syndrome may be caused by asphyxia before or during delivery of a normally gestational foal. These scholarly authors further postulate asphyxia could have occurred due to prolonged

cardiac compression or other cardiac disturbances.[1] Even teaching publications dated as recently as 2016 still refer to asphyxia as the cause of equine maladaptive syndrome.[3]

Camelid veterinary conventional wisdom on dummy crias proposed this same asphyxia cause. Cebra and Anderson, et al, cautioned against induction of labor in the camelid as it could lead to alpaca maladaptive syndrome.[2]

Dr. Madigan's research shattered this asphyxia construct as the reason for neonatal maladjustment syndrome. Dr. Madigan presents a much more reasoned hypothesis, one that can be easily replicated.

The syndrome in the cria manifests as a newborn that appears detached from the dam. The cria tries to suckle indiscriminately on anything, may seem depressed and uncoordinated, and may have difficulty walking and general lethargy. By far, the most prevalent sign is the detachment from the dam.

These manifestations can be subtle or fairly profound, and may disappear within hours, days or weeks. According to Dr. Madigan, the dummy syndrome in mild cases can be mitigated with simple supportive care, even in the absence of intervening with the "squeeze maneuver."

WAKE-SLEEP INITIATION

Dr. Madigan's research has identified neuroendocrine substances linked to what he calls "wake-sleep initiation during the birthing process."[5] The process he describes involves chemicals that regulate sleep in utero, to keep the fetus quiescent in the womb.[5] As he says, somewhat jokingly, "You don't want a foal running in the womb." Therefore these chemicals in the brain are turned on during gestation. However, after birth these chemicals must turn off, and it is the failure to turn off the chemicals that produces the somnolent foal, or in our case, cria.[4,5]

Something during the birthing process triggers the brain to cease the production of the sleep chemicals. Dr. Madigan's research demonstrated it is the act of being squeezed as the foal goes through the birth canal that triggers the chemical to stop its action on the brain, and hence wake the animal from its gestational slumber.

Conversely, when the young animal is squeezed in an appropriate manner, the sleep chemical is again active. Demonstration after demonstration has proven this phenomena with multiple species, now including camelids.[4]

Dr. Madigan demonstrated the squeeze with a 6-month-old cria. The cria was induced into a sleep state by his "squeeze method," demonstrating that squeezing during the birth process does appear to be the mechanism that triggers the neonate to become fully awake. Further, it is some aberration in this pelvic squeeze that is responsible for the neonate not fully awakening post-delivery, resulting in a dummy cria.

Replication of the maternal squeezing after birth can reverse the dummy syndrome manifestations and essentially cure the cria of neonatal maladjustment syndrome.[4] The research to date has replicated positive results over and over.

My own alpaca vet, Dr. Daniel Mora, and I began discussing this new research, and Dr. Mora demonstrated the "squeeze maneuver" on one of our alpacas. As fate would have it, one of our next crop of newborn crias clearly seemed to be abnormal right after birth. We used the "squeeze" on a lethargic, nearly flaccid cria for 40 minutes. The cria went unconscious with squeezing, then with release of the squeeze the cria acted completely normal. I am unaware of many interventions in any type of medicine that are this simple, but which have such profound results.

During the Calpaca meeting, Dr. Madigan demonstrated his procedure using ropes. I suppose ropes on a small, fragile cria could result in trauma to the cria's thorax. Care would need to be used in the amount of pressure exerted in the maneuver and the size of the rope. We simply used our arms around the thorax and chest to exert the pressure.

I highly encourage any breeder of camelids to learn more about this "squeeze maneuver." There are a number of online articles to enhance your understanding. Don't let crias suffer any longer from this syndrome. We should also be inviting our camelid veterinarians to learn this maneuver and its applications. Even if the "squeeze" is used and it does not help the situation, you have eliminated one possible cause for "dummy" symptoms, and can move on to determining other obstetrical complications.

I want to give thanks to Dr. John Madigan, and also to Dr. Julie Dechant, who helped secure Dr. Madigan for the Calpaca meeting. Dr. Dechant is the U.C. Davis faculty member in charge of the university's Camelid Club, and serves as liaison to the U.C. Davis Camelid Symposium sponsored by Calpaca.

A cria successfully latches onto its mother's udder, something "dummy" crias struggle with.

Photo by Jennifer Clark

ONLINE RESOURCES:

- The complete "how to" for the squeeze can be seen at: http://www.equineneonatalmanual.com/#!foalsqueezing/c1r2z
- Dr. Madigan gives a step by step demonstration here: http://www.vetmed.ucdavis.edu/clinicaltrials/local_resources/pdfs/Study_Related_PDFs/madigan_mfsm_instructions_pics.pdf
- You can watch a demonstration of the method here: https://www.youtube.com/watch?v=mKbw0v7eQKc
- More information can been seen and read through the following links:
- https://www.ucdavis.edu/news/newborn-horses-give-clues-autism
- http://equimanagement.com/article/madigan-foal-squeeze-procedure-neonatal-maladjustment-syndrome-27269
- https://www.ucdavis.edu/news/hormone-discovery-resolves-mystery-about-sustaining-pregnancies

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3. *Holtgrew-Bohling, K., Large Animal Clinical Procedures for Veterinary Technicians, 3rd Edition, Elsevier, 2016.*
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