

### Uterine Torsions in Llamas and Alpacas

Reproductive problems in Camelids are a source of great stress for both the animal and the owner. We hope to help decrease some anxiety associated with reproductive problems by increasing knowledge and awareness of some common peri-parturient (near the time of birthing) problems. This article will focus on uterine torsions.

A uterine torsion is a condition where the pregnant uterine horns rotate from their normal position. The rotation can be described as either clockwise or counter-clockwise. This refers to the direction of rotation of the uterine horns about each other similar to the hands of a clock. If you are looking at the rear of the llama, visualize a clock face. The uterine horns are normally at 3 O'clock (right horn) and 9 O'clock (left horn). If the left horn flips over top of the right horn, then the horn has moved clockwise similar to the hands of the clock. To state this another way remember that Camelids have bi-cornate (two horned) uteruses. If you think about your arms as the two horns and place them in front of you in the shape of a "Y" you would be a normal uterus. In a clockwise uterine torsion your left arm would go over top of your right. In a counter-clockwise torsion your right arm would go over top of your left. The torsion can be anywhere from 90 degrees to 360 degrees and beyond. The place where it twists is normally near the cervix. This prevents the cervix from dilating and will prevent birth if it is not corrected. Uterine torsions are generally painful and can cause colic-like signs (increased heart rate and respiratory rate, anorexia, rolling, thrashing and straining). It is still unknown why uterine torsions occur. It is known that there are some conditions which make a torsion more likely to occur. For instance, large fetal size (as the fetus gets close to term), certain dam behaviors (such as rolling excessively as when placed in new areas), right horn pregnancies (these represent fewer than 15% of total pregnancies in llamas and alpacas), and prolonged gestation tend to create uterine torsions. Uterine torsion should be suspected when a dam is close to parturition (within 3 months) and shows signs of colic or distress. It can be diagnosed by your regular veterinarian by rectal palpation, vaginal exam/palpation and/or ultrasound.

#### Correction.

Uterine torsions can be corrected with medical or surgical intervention.

Medical intervention generally entails rolling the female while stabilizing the uterus to "untwist" the torsion. Sedation may be needed to roll the dam. The dam is placed on her side and rolled over her back to her other side. The dam is placed on the side "with" the torsion or toward the twist:

e.g. on the right side for a clockwise twist; on the left side for a counter-clockwise twist. A plank or manual pressure on the outside of the abdomen helps keep the uterus in place while the dam is "rolled off of her uterus". This procedure may need to be repeated multiple times. Our rule of thumb is "three times and your out" meaning that if we can not correct the twist in three attempts, we perform surgical correction. A vaginal exam should be performed after each attempt. If rolling is successful the dam should be kept as quiet as possible to make sure she doesn't twist again.

If it is not successful, your veterinarian should make a decision about when (or if, depending on the severity of the torsion and health of the fetus) to go to surgery. Surgical correction of uterine torsion uses the same approach as a c-section. The surgeon then corrects the torsion. If the fetus is near term or determined to be dead, a c-section can be performed at the same time. In some cases the uterus cannot be untwisted without removal of the fetus. This is a judgment call that the surgeon makes during surgery.

The possible complications of uterine torsion are fetal death or compromise, death of the dam, uterine compromise (twisting can cut off the blood supply to the uterus and fetus), uterine rupture and subsequent peritonitis, and, if surgical correction is necessary, all of the complications associated with c-section.

At OSU-VTH we have seen many camelid patients that required treatment for uterine torsions. We reviewed thirteen camelids presented for uterine torsion; 10 were alpacas and 3 were llamas. Five (38%) of the torsions were clockwise and 8 (62%) were counter-clockwise. Eight (62%) were corrected with medical management (rolling), while 5 required surgical treatment. Of the 13 cases, 9 (70%) were alive and survived to go home and 4 (30%) died.

In one case, the dam died 14 days post-operatively due to peritonitis. In all of the cases where time of gestation was known, uterine torsions happened in the last 2 months of gestation.

We can recommend, based on these findings, that dams should not be stressed in the last several months of gestation. This would include moving them to a birthing pasture at least 30 to 60 days before birthing to minimize the risk of excessive rolling (e.g. dusting behavior) by the dam which can increase the risk for torsion. Close observation of late-term dams can also help to catch dystocias before harm occurs to the fetus or dam. Any dam that shows signs of colic or a prolongation of stage 2 labor (for instance, a foot is out and nothing else for 20 to 30 min) should be evaluated by a veterinarian as soon as possible. Early detection of problems can help increase the number of healthy fetuses born to healthy dams.

### **Conclusion.**

In conclusion, when your animal has a reproductive problem, the most important questions an owner or barn manager should ask themselves are: "Is this a departure from normal?", "Can I manage this problem myself?", and "How long do I wait before I ask for help, or call my vet?" By staying educated in the normal processes of camelids, you can usually answer the first question. Your experience and expertise should allow you to make a decision on the second question. And finally, the sooner the better is almost always the answer to the third question. We would much rather see your camelid too soon than too late.

### **References.**

The Reproductive Process in South American Camelids, Bravo, P. Walter Theriogenology in Camelidae, Tibary, Anouassi A.

Current Therapy in Large Animal Theriogenology, Youngquist, Robert S., DVM Medicine and Surgery in South American Camelids: Llama, Alpaca, Vicuna and Guanaco, Fowler, Murray E.



Alina P. McClain, Veterinary Student, David E. Anderson, DVM, MS, DACVS and Matt Miesner, DVM, MS, DAVIM. College of Veterinary Medicine The Ohio State University