

Cesarean Section 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. Hopefully, increased awareness will lead to earlier and more successful intervention when problems exist. This article will focus on Caesarian section.

Caesarian Section.

A Caesarian section (commonly referred to as a "c-section") is a surgical procedure for removing a fetus from the uterus. This surgery entails making an incision in the body wall, commonly centered in the left flank, and then opening the uterus to extract the fetus. Under some circumstances this is the only way to remove a fetus; however, it is obviously not natural and therefore less than ideal. Whenever possible, we would prefer natural birth to take place.

Common reasons to perform a c-section include: mal-positioning of the fetus, inadequate dilation of the cervix, a narrowed birth canal (due to tumors, abscesses, or a narrowing of the bony pelvis), inability to manually extract a fetus through manipulation, and uterine torsion. The proper position for natural birthing is anterior (the front of the fetus first), dorsosacral (the back bone of the fetus is toward the back bone of the dam), and limbs and head in extension (meaning both forelimbs are fully extended in front of the fetus' nose, and the head is lying on top of the forelimbs). This positioning normally happens during the last 2 weeks of gestation by coordinated contractions of the uterus and movements of the fetus. If the dam or fetus are stressed mal-positioning can occur. There are many different ways for the fetus to be mal-positioned. Some can be easily corrected by manual manipulation through the vagina, while others are impossible to correct manually. Inadequate dilation of the cervix can also occur many ways. If the fetus is not positioned properly, it may not stimulate the reflex required for cervical dilation. Likewise, if the uterus is twisted (as in a uterine torsion) adequate dilation may not occur because of mechanical restriction.

Possible complications with c-section include: incisional infection, intra-abdominal adhesions, incisional dehiscence (opening up of the incision), evisceration, and rarely death. The most common of these are infection and adhesions. Incisional infections can happen due to many causes, but can often be controlled in most cases with medical management (antibiotics, warm water lavage or hot-packing). Adhesions are scar tissue formation in the abdomen that can stick abdominal organs together. If the uterus is touching another structure in the abdomen, the scar tissue can cause the two structures to become stuck together. This can cause future reproductive problems or gastro-intestinal problems. We try to minimize the occurrence of adhesions by using a variety of medical treatments including anti-inflammatory drugs, antibiotics, and anti-adhesive agents. Incisional dehiscence may be more common in camelids than it is in other large animal species (e.g. cattle, sheep, goats) due to their thin body walls. Often a belly wrap is placed post-operatively to help support the weight of the gastro-intestinal tract. We also recommend limiting exercise by confining the animal to a stall or small pen until the skin sutures are removed.

In conclusion, although a c-section is a common surgery, it should never be used unless it is necessary for the health of the dam or fetus. By taking some routine precautions we can limit the post-operative complications encountered.

Clinical research at Ohio State University.

At OSU-VTH we have seen many camelid patients that required c-section or treatment for uterine torsions. Of the 20 camelids that required a c-section in the past 5 years, 17 (85%) were done through flank incisions and 3 (15%) were done through midline incisions. Fourteen (70%) were done under sedation only while the remaining 30% were done under general anesthesia. It is preferable to do a flank incision under sedation because this reduces the number of possible complications the patient has to endure.

Twelve of the 20 fetuses (60%) were extracted alive during the c-section and survived to go home. Nine (45%) were either dead when they were removed from the dam or died shortly afterward. Out of the 20 camelids only one dam died. Most of the complications were mild and included vaginal tearing, uterine tears that were repaired at surgery, incisional infection, retention of fetal membranes, and in one case, peritonitis.

We recommend that dams should not be stressed in the last month of gestation. 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 minutes) 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.

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

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Article written by Alina McClain, veterinary student and released by David E Anderson, Head & Associate Professor, Ohio State University, College of Veterinary Medicine. www.icinfo.org