

CALVING SEASON: When to Call Your Veterinarian

by Pat White, DVM

Calving season is upon most of us and our goal should be to deliver not only live calves; but healthy and vigorous calves as well. While Highland cattle, on average, are noted for requiring little assistance when calving, there are exceptions and it behooves the Highland owner to be on guard during calving to intervene in those rare but potentially deadly calving difficulties.

First of all, you need to recognize that there is a problem. This requires knowledge of normal calving behavior. Ultimately, there is no greater method to learn what is normal than observation. Frequent observation of your own cattle will allow you to recognize almost instantly that something is amiss. This applies to almost any situation involving cattle, whether it is calving difficulty, a fence down or a coyote in the pasture.

As calving approaches, there are physical and behavioral signs to watch for. The udder will start to fill out with milk. This bagging up usually occurs several weeks prior to actual calving but there are cows that will be bagged up 6 weeks or more; there are also those cows that seem to bag up the night before they go into labor. Even on the fully distended udder, the teats may fill about 24 hours prior to calving. Some publications and cattle producers claim that the passage of a thick, tenacious mucous material called the cervical plug is a sign of imminent calving but this is a mistaken belief. This can occur weeks prior to parturition. Although in my own herd, if I spot the thick, stringy clear mucous hanging from the vulva, it usually coincides with calving in about 5-7 days. The tissues around the birth canal become soft, the vulva will noticeably relax, enlarge and become flabby. The pelvic ligaments that run from the pin bones (the two points of the butt at the back of the cow) up to attach on the spine immediately in front of where the tail starts, will relax. The space on either side of the tail just below the spine will appear loose, sunken and spongy. The relaxation of these pelvic ligaments is probably the best indicator of impending parturition within 12-24 hours.

The delivery of a calf involves a complicated sequence of physiological events that have been nicely categorized into three separate stages. Stage 1 is characterized by restlessness, attempts at isolation from the remainder of the herd, repeated lying and rising, a raised tail and signs of uneasiness and pain. These signs are usually more evident in first calf heifers and visible signs of labor may be scant or even absent in mature cows. During stage 1, each time the



Healthy, vigorous calves should be a goal for every breeder.

uterus contracts, the cow will feel a sharp pain which produces her general uneasiness and discomfort. With each uterine contraction, the cervix is progressively dilating and the first water sac (chorioallantoic sac) is forced into the cervix and usually breaks. Contractions start at about one every 15 minutes but by the end of stage 1, they will occur about every 3 minutes. As the contractions become stronger and more frequent, the cow may arch her back and strain slightly. Stage 1 will last 2-6 hours, and sometimes a little longer in heifers.

Stage 2 begins when the cervix is fully dilated and the second water sac (amniotic sac) and parts of the calf first enter the birth canal. This water sac may appear at the vulva unbroken after a relatively short time. The observation of this water sac is the most practical indication that the cow has entered stage 2 of labor. As the various fetal parts put pressure on the inside of the birth canal, this stimulates abdominal pushing or pressing. Uterine contractions are painful enough at this point that the cow will usually lie down. Abdominal pushing is exerted more and more frequently as labor progresses until it occurs up to 1-2 times per minute. Frequent abdominal presses will be followed by short rest periods. In normal forward presentation, the greatest pushing occurs during the passage of the head through the birth canal and vulva. At this point, a short rest period may follow. Then strong pushing will resume to force the shoulders and chest of the calf through the birth canal. It is not unusual for the cow to

stop and rest once the delivery of the shoulders and chest has occurred. If the cow should stand up, the calf will be dangling from the vulva with its legs and hips still inside the cow. At this point, the umbilical cord is compressed against the pelvis, shutting off blood supply to the calf, and often the calf will start to breath on its own at this point. If the placenta is still over the calf's head, it could suffocate. Second stage labor lasts from ½ to 4 hours in the cow.

Stage 3 labor is the passage of the placenta and usually occurs within 12 hours of calving.

Observation of cattle is the single most important activity during the calving season. To maximize positive outcomes, large cattle operations will often check their springing females continuously. This is not economically feasible for many operations but the more frequent the observations, the better the calf survival. Checking every 3 hours is adequate and checking just at morning and night might be necessary in certain operations. Highland cattle are notorious for ease of calving and unattended calving occurs in many instances. Bear in mind that while most calves will be delivered without problems, if you adopt a philosophy of "letting Mother Nature run her course" you will eventually have some losses, whether calves, cows or both.

Deciding when to intervene should usually be based on sound judgement, although if your gut is telling you something is wrong check it out. Keep

in mind that if you are calling your veterinarian, there will be some lag time before his/her arrival.

Indications for intervention:

1. Examine the cow if you think that the cow has been in stage 1 of labor for over 8 hours, she needs to be examined. Other authorities recommend a little more leeway: if she starts labor and you don't see the water bag within 6 hours for cows and up to 12 hours for heifers. A good and practical rule of thumb is if a cow due to calve looks uncomfortable or has her tail up in the morning, make sure she is examined by afternoon if she hasn't calved by then.

2. Examine the cow if the water sac is visible for 2 hours and she is not making any further effort to expel a calf. If you come home to the remnants of the broken water sac hanging from the cow, but no calf and you have no idea how long she's been trying, check her out.

3. Examine the cow if she has been trying for over 30 minutes and making no progress. If you can see part of the calf, but after 30 minutes no more of the calf is becoming visible, the cow is not making any progress. Often the front hooves and nose may be visible but then retract back into the birth canal when the cow stops straining. This is normal but each subsequent attempt should show more and more of the legs and head, even if they disappear between pushing.

4. Examine the cow if the cow has quit trying for over a 15-20 minute period after a period of obvious progress. Rest periods for the cow usually will not be over 5-10 minutes unless fatigue or uterine inertia is a problem. First calf heifers in particular, may just get too tired to continue trying, even though they are showing no further signs of distress.

5. Examine the cow if the cow or calf is showing severe signs of fatigue and stress such as a swollen tongue in the calf or severe bleeding from the rectum of the cow.

6. Examine the cow if you suspect you have an abnormal or high risk delivery position of the calf:

a. presentation: the calf should be coming out frontward. Coming backwards is considered normal but high risk.

b. position: the calf should be coming right side up. Upside down or sideways is abnormal.

c. posture: both front legs and the head are coming through the birth canal with a frontward presentation. You will be looking at the top of the front hooves and should feel or see the head between the knees. In a backward presentation, normal posture is both rear legs followed by the hips; you will be looking at the bottom of the back hooves (the soles of the feet will be facing the sky). A normal, backward presentation is considered high risk for a number of reasons. First, the hind limbs are not as effective in initiating dilation of the cervix and stimulating ab-

dominal contractions as is the head. The tail head of the calf tends to impact against the cow's backbone, further slowing things. The hair lies the wrong way and the compression on the calf's abdomen tends to cause its rib cage to expand. All these factors lead to a slower delivery time. Unfortunately, flow of blood through the umbilical cord is cut off relatively early in the course of a backward delivery and the head is still in the uterus submerged in fluid, where it cannot breathe. Once the hips enter the birth canal, delivery must be rapid for the calf to survive.

7. Examine the cow if the placenta is retained after calving for more than 12 hours. Treatment may be necessary for retained placenta but manual removal of the fetal membranes is no longer advocated nor should they be shortened by cutting. If dragging through mud and manure, they may be tied in a knot to suspend them above most of the dirt but the weight of the entire placenta is important for clearance of the membranes from the uterus.

8. Examine the cow if you know her due date and the cow is 7-10 overdue without any signs of imminent calving but with no signs of illness. Abnormal signs and behavior around a suspected calving date is another reason to check out a cow. Slight vaginal discharge that is blood-tinged, coinciding with a cow that doesn't move much and isn't chewing her cud, deserves a second look. Breech delivery, with just the butt and no feet presented to the birth canal, will result in virtually no signs of second stage labor as the calf really can't enter the birth canal. If you missed the signs of the first stage, you will not have a clue that the cow should have already delivered a calf. Breech presentation will often have a dead calf upon discovery unless the cattleman is very astute and attuned to all signs of labor, particularly the more subtle ones.

9. When your gut tells you something is wrong, get that cow in and check her out. If your gut is wrong, you wasted a little time, but if it's right, you might just save a calf or a cow's life. Investigate things that just don't seem to make sense. One of the most dramatic calvings that I witnessed was a first calf heifer who stood up after the shoulders and chest of the calf had been delivered. I have seen plenty of calves dangle from their mother's vulva when this happens, usually with very little movement on the part of the calf, maybe just a few attempts to lift the head and neck. This one, however, was like a huge pinwheel throwing its entire front end around in circles while the back half was still in the cow. It was immediately apparent that something was not right and I went to investigate. By the time I got to the cow, the calf had dropped to the ground and the afterbirth was totally covering the calf's mouth and nose. It was desperately trying to suck air into its lungs and it was as though a plastic bag had been tied around its head. Fortunately, I got

the placenta off of its face in time but had I not witnessed the event, the calf would have died. This is always a possibility in any calving, however, usually the placenta will pull off the mouth or nose as the calf is delivered. If not, the cow will remove it as she cleans the calf, hopefully fast enough to save the calf. When calving in pens, it is critical that a calf cannot be pushed underneath the bottom rung of the gate; if that placenta is still covering the calf's head, the cow will be unable to clean the placenta off and the calf will be unable to breathe. Another somewhat bizarre scenario has occurred twice in 25 years in my own herd. A cow may lie down to calve on a bit of an incline, with her feet facing the high side. Once she goes down, the weight of the calf in her uterus prevents her from righting herself and she starts to bloat because she cannot belch up the gas constantly produced in her rumen when she is on her side. If this is not corrected, the cow may die from bloat before she delivers the calf. It is a simple remedy: get to the cow and help her get up. In both cases that I witnessed, it took two of us to roll the cow over completely so that her feet faced downhill instead of uphill. We just grabbed her legs and flipped her over, which was actually easier than it sounds. Then she had no problem getting up and the bloat was instantly relieved.

If you are willing to give assistance yourself, there are specific guidelines that help you determine if, as a layperson, you can deliver the calf without professional assistance. If you are squeamish and aren't comfortable putting your arm into the vagina and uterus of a cow, then call your veterinarian immediately. You should be sure that the cow is located in a comfortable, clean dry area where she can be restrained and examined. Do not expect your veterinarian to play cowboy; some are extremely good with a lasso and may be willing to help rope a cow, but chasing a cow on the back forty is an expensive waste of your veterinarian's professional time and may elicit a suggestion to call when the cow is caught.

If you are willing to assist the cow yourself, remember that cleanliness and gentleness are the two most important aspects of obstetrics. Scrub your arms and hands with soap and water, then scrub the vulva and anal area of the cow. Keep her dirty tail out of your way, whether tied to her neck or held by your assistant. Get yourself a good description of calving presentations and things to feel for, a set of obstetrical chains and handles and go for it. Just remember the three important guidelines for assisted calving.

Call the veterinarian if:

- You don't know what the problem is or how the calf is positioned.
- You know what the problem is but you don't have a clue what to do about it.
- You know what the problem is and what you need to do but you are just not making any progress after 30 minutes.