

Calving Time Management for Beef Cows and Heifers



Animal Science Department
Oklahoma Cooperative Extension Service
Oklahoma State University

Gestation table (based on 283 days).

Breeding Date	Due Date	Breeding Date	Due Date	Breeding Date	Due Date	Breeding Date	Due Date	Breeding Date	Due Date	Breeding Date	Due Date
Jan 1	Oct 10	Mar 3	Dec 10	May 3	Feb 9	Jul 3	Apr 11	Sep 2	Jun 11	Nov 2	Aug 11
Jan 2	Oct 11	Mar 4	Dec 11	May 4	Feb 10	Jul 4	Apr 12	Sep 3	Jun 12	Nov 3	Aug 12
Jan 3	Oct 12	Mar 5	Dec 12	May 5	Feb 11	Jul 5	Apr 13	Sep 4	Jun 13	Nov 4	Aug 13
Jan 4	Oct 13	Mar 6	Dec 13	May 6	Feb 12	Jul 6	Apr 14	Sep 5	Jun 14	Nov 5	Aug 14
Jan 5	Oct 14	Mar 7	Dec 14	May 7	Feb 13	Jul 7	Apr 15	Sep 6	Jun 15	Nov 6	Aug 15
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Jan 7	Oct 16	Mar 9	Dec 16	May 9	Feb 15	Jul 9	Apr 17	Sep 8	Jun 17	Nov 8	Aug 17
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Prolapses

Prolapses occur occasionally in beef cows. Most prolapses occur very near the time of calving. Two distinct kinds of prolapse exist.

Uterine prolapse requires immediate attention and if treated soon, most animals have an uneventful recovery. If they subsequently rebreed and become pregnant there is no reason to cull animals suffering uterine prolapse after calving. Uterine prolapse is not likely to reoccur. Some may suffer uterine damage or infection that prevents conception and should therefore be culled. If the uterus becomes badly traumatized before treating, the animal dies from shock or hemorrhage.

Vaginal prolapse, however, that which occurs before calving is a heritable trait and is likely to reoccur each year during late pregnancy. Such animals should not be kept in the herd. The condition will eventually result in the loss of cow, calf, or both plus her female offspring would be predisposed to vaginal prolapse.

Research (Patterson, et al, 1981) from the USDA station at Miles City, Montana, reported that 153 calvings of 13,296 calvings from a 14-year span were associated with prolapse of the reproductive tract. Of those 153 prolapses, 124 (81%) were vaginal prolapses and 29 (19%) were uterine prolapses. The subsequent pregnancy rate following prolapse among first calf heifers was 28% and the pregnancy rate among adult cows following a prolapse was only 57.9%.

Summary

Many calving difficulties could be eliminated by proper development of replacement heifers and/or breeding first calf heifers to bulls that will sire calves with below average birth weights. Of most importance is to know when to help, when to quit, and when it is time to call the veterinarian. Remember the length of stage 2 of parturition is important to calf survival and if a problem cannot be corrected within 20 to 30 minutes, you should seek assistance. To learn more about how to assist cows or heifers at calving, check out two videotapes available from your local OSU Extension Office. These two videos are called VT-323 Calving Management-Parturition and VT-324 Calving Management-Dystocia. In the second video (VT-324), Dr. Larry Rice, Professor-Emeritus, demonstrates how to check for cervical dilation.

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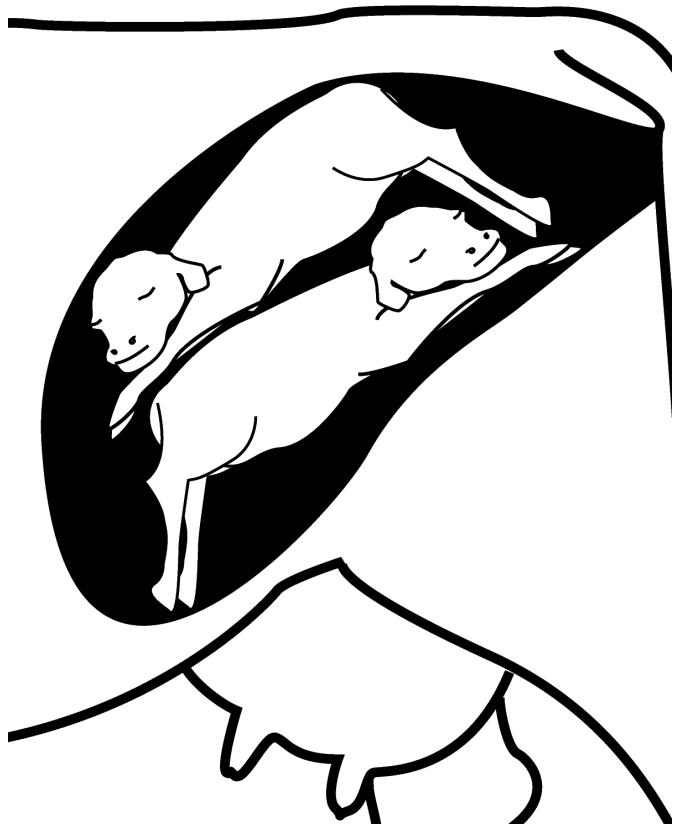


Figure 9. Twin calves entering the birth canal.

Rotating the Calf at Parturition to Aid in Delivery

Pulling on a calf should only be done when the presentation and posture of the calf are correct. This applies to both the anterior (forward) position (Figure 1) and the posterior (backward) position (Figure 3). A large calf, with shoulders too wide for the pelvis, is sometimes held up at this stage (Figure 10). If so, pull one limb only so that the elbow and shoulder of one limb only enter the pelvis. Then, while the pull on the limb is continued, the other limb is treated in the same way

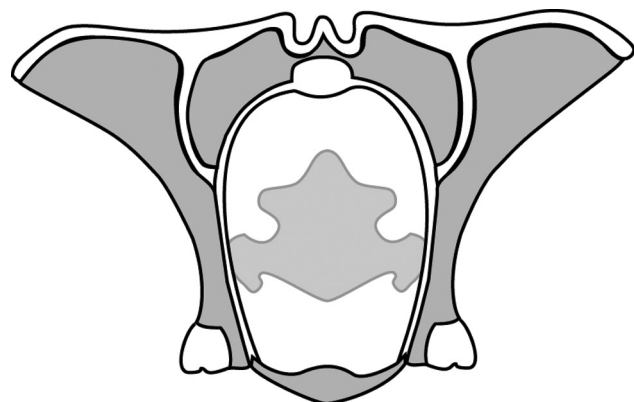


Figure 10. The shoulders or hips of a large calf may be wider than the horizontal axis of the pelvic opening.

until both feet project equally from the genital passage. Now apply traction on both limbs and on the head until the head protrudes from the vulva, and from this stage the principle traction is exerted on the limbs again. It can be seen that traction on both limbs at the same time will result in both shoulders entering the pelvis at once.

The pelvis has an oval shaped opening with the largest dimension being the vertical axis, and the smaller dimension is the horizontal width. If the shoulders of a large birth weight calf can be made to enter on a slant and can be pulled through in that position, delivery will be made easier. Apply traction that will allow the calf to be turned about 90 degrees so that the widest part of the shoulders will match the largest dimension of the pelvic opening (Figure 11).

After the shoulders have passed the pelvic opening, the calf can be returned to the normal upright position because the torso is larger in the vertical dimension (Figure 12).

Hiplock is the next likely obstruction that is met when pulling a calf. If the passage of the hind end of the calf presents any difficulty, the body of the calf should be grasped and twisted to an angle of about 45 degrees. Delivery is then made with the calf half-turned on its side. This allows for easier passage of a calf with well-developed stifle joints.

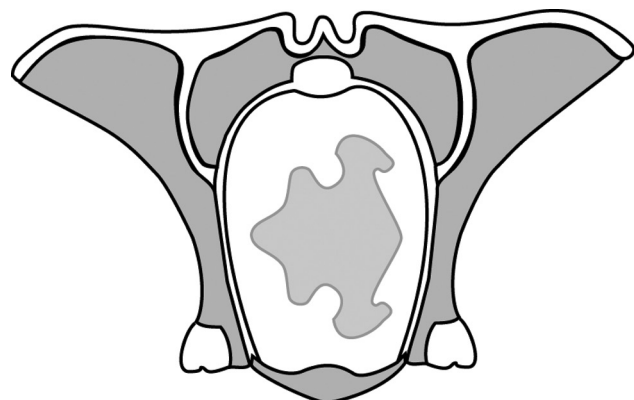


Figure 11. Rotation of the calf to match the widest dimensions of calf and pelvic opening.

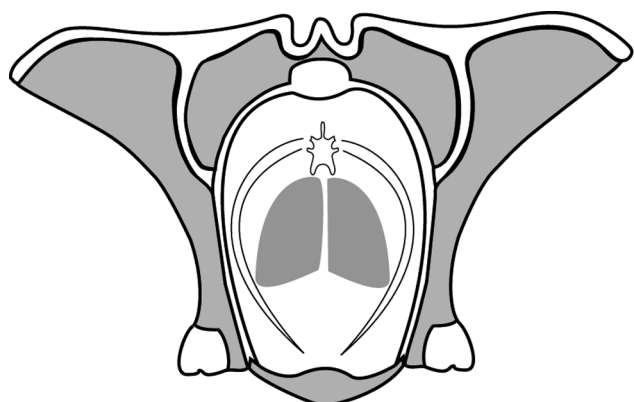


Figure 12. Rotating the calf back to the upright position to match the depth of the thoracic cavity with the depth of the pelvic opening.

Calf losses at calving time are often a result of dystocia (difficult calving) problems. Many of these losses occur to calves born to first calf heifers and can be prevented if the heifers and cows are watched closely and the dystocia problems detected and corrected early. A veterinarian should handle serious and complicated calving problems. Ranchers must use good judgment in their decisions as to which problems will require professional help, and the earlier help is sought the greater the survival rate of both cow and calf.

Recognize Normal Calving

If the calf is normally presented (Figure 1) and the pelvic area is large enough, the vast majority of animals will give birth without assistance. Recognizing a normal calving is just as important as knowing when a calving is abnormal. This way you will not give help when it is not needed.

The Three Stages of Parturition

Stage 1

The first stage of parturition is dilation of the cervix. The normal cervix is tightly closed right up until the cervical plug is completely dissolved. In stage 1, cervical dilation begins some four to 24 hours before the actual birth. During this time the progesterone block is no longer present and the uterine muscles are becoming more sensitive to all factors that increase the rate and strength of contractions. At the beginning, the contractile

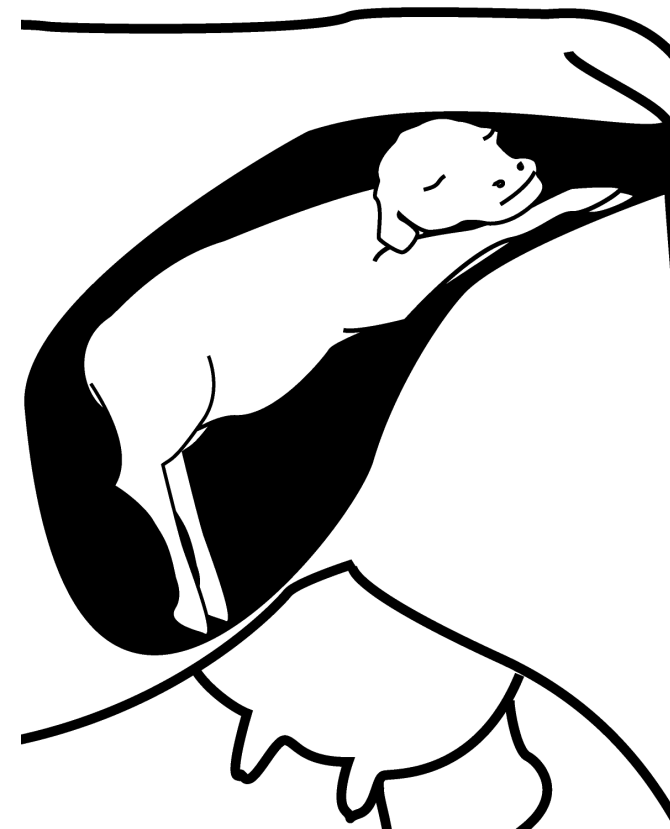


Figure 1. An anterior presentation.

forces primarily influence the relaxation of the cervix but uterine muscular activity is still rather quiet. Stage 1 is likely to go completely unnoticed, but there may be some behavioral differences such as isolation or discomfort. Near the end of stage 1 ranchers may observe elevation of the tail, switching of the tail, and increased mucous discharge.

Stage 2

The second stage of parturition is defined as the delivery of the newborn. It begins with the entrance of the membranes and fetus into the pelvic canal and ends with the completed birth of the calf. The second stage is the one producers are really interested in because this is where all the action is. Clinically the onset of stage 2 is marked by the appearance of membranes or water bag at the vulva. The traditional texts, fact sheets, magazines, and other publications state that stage 2 in cattle lasts from two to four hours. Data from Oklahoma State University and the USDA experiment station at Miles City, Montana, would indicate that stage 2 is much shorter being approximately one hour for heifers and one-half hour for adult cows. See *When and How to Examine a Cow* on page 3. In heifers, not only is the pelvic opening smaller, but also the soft tissue has never been expanded. Older cows have had deliveries before and birth should go quite rapidly unless there is some abnormality such as a very large calf, backwards calf, leg back, or twins.

Stage 3

The third stage of parturition is the shedding of the placenta or fetal membranes. In cattle this normally occurs in less than eight to 12 hours. The membranes are considered retained if after 12 hours they have not been shed. Years ago it was considered necessary to remove the membranes by manually unbuttoning the attachments. Research has shown that manual removal is detrimental to uterine health and future conception rates. Administration of antibiotics usually will guard against infection and the placenta will slough in four to seven days. Contact your veterinarian for the proper management of retained placenta.

Dystocia

What is dystocia or a difficult birth? Traditionally, it is any birth that has needed assistance. According to that definition, any unassisted birth was a normal birth, but by the definition an unassisted birth could still result in weak or dead calf at birth. A more modern definition of dystocia would be a birth that needs assistance or results in a weakened or dead calf or injury to the dam.

Causes of Dystocia

What are the causes of dystocia? Most common is relative fetal oversize, which could be defined as a calf too big, pelvis too small, or both. As for calving difficulty, prevention is worth a pound of cure. Proper

sire selection is a key to preventing calving difficulty. Underdeveloped heifers and heifers bred to bulls with large birth weights are both factors that cause increased incidence of difficult births. The second most prevalent cause is abnormal presentation or position. The normal presentation in cattle is anterior presentation or head first and the normal position would be right side up with head and fore limbs extended into the pelvic canal. Any position that involves the calf's head turned back or one of the legs turned back is abnormal. Remember a normal delivery cannot be achieved unless the head and both front limbs are presented into the pelvic canal and on through the vulva. A third cause of dystocia would be lack of uterine contractions or uterine fatigue. The causes of this are complex and not completely understood. Sometimes hormonal imbalances may result in the cervix not being completely dilated or uterine contractions not occurring frequently or strongly enough. Low calcium levels such as seen with milk fever or grass tetany may be responsible. In any case those problems usually require the assistance of a veterinarian to correct. Other causes of dystocia are twins or genetic mistakes (fetal monsters).

Effects of Dystocia on the Calf

What are the effects of dystocia or difficult birth on the calf? Obvious to everyone is a dead calf at birth or one killed during the assistance process. Additional effects include trauma such as leg fractures, ruptured diaphragm, and nerve damage due to excessive pulling, improper placement of chains, or the development of a hiplock. A third and greatly overlooked effect is a weak calf, sometimes called weak calf syndrome, which may be brought on by a prolonged stage 2. This is due to increased time exposed to increased pressure associated with increased uterine contractions and straining of the dam.

A prolonged stage 2 with no progress in delivery of the calf is going to result in decreased oxygen and increased carbon dioxide to the fetus. Such calves do not have normal respiratory efforts. They do not have strong gasping and panting efforts. They do not have rapid respiration or heart rates necessary to distribute oxygen to the tissues and carbon dioxide back to the lungs. Lactic acid and carbon dioxide levels remain quite high. These calves are depressed, they do not sit up well, they do not shake their heads and ears, and if weather is cold they do not shiver to warm themselves. Shivering increases metabolism, which increases heat. These calves have poor metabolism to begin with and their body temperature consequently drops. Even those that first appeared to breath and sit up normally soon become depressed, are slow to rise, and are slow to nurse. Many do not nurse without assistance and die within 12 to 24 hours. Even those that do nurse, may nurse too late for good antibody absorption. In summary, the effect of dystocia is not just dead calves and injured heifers, but also weak and sick calves.

Effects of Dystocia on Post-calving Fertility

In addition to being the greatest cause of baby calf mortality, calving difficulty markedly reduces reproductive performance during the next breeding season.

Results from a Montana study (Doornbos, et al., 1984) showed that heifers receiving assistance in early stage 2 of parturition returned to heat earlier in the post-calving period and had higher pregnancy rates than heifers receiving traditionally accepted obstetric assistance (Figure 2). In this study heifers were either assisted when the fetal membranes (water bag) appeared (Early) or were allowed to progress normally and assisted only if calving was not completed within two hours of the appearance of the water bag (Late).

Heifers that were allowed to endure a prolonged labor had a 17% lower rate of cycling at the start of the next breeding season. In addition, the rebreeding percentage was 20% lower than the counterparts that were given assistance in the first hour of labor.

Prolonged deliveries of baby calves (in excess of one to one and a half hours) often result in weakened calves and reduced rebreeding performance in young cows.

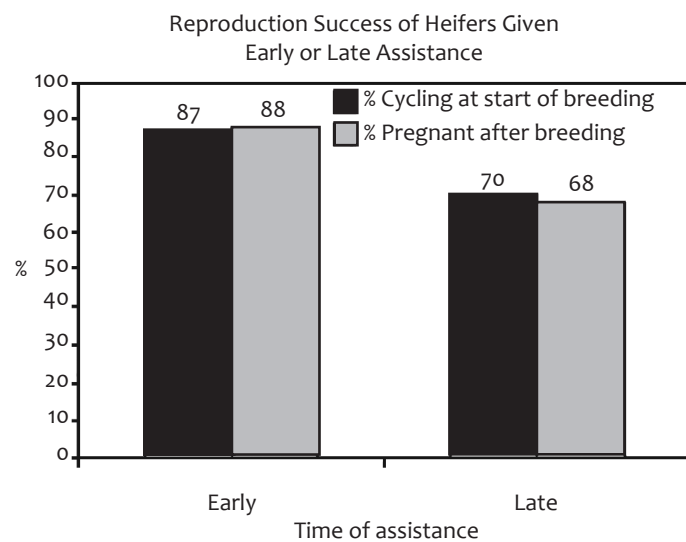


Figure 2. Impact of early or late assistance in subsequent rebreeding performance of first calf heifers. Doornbos, et al. 1984.

Prepare Before Helping

- **Equipment:** Before calving season starts do a walk through of pens, chutes, and calving stalls. Make sure that all are clean, dry, strong, safe, and functioning correctly. This is a lot easier to do on a sunny afternoon than on a cold dark night when you need them.
- **Protocol:** Before calving season starts develop a plan of what to do, when to do it, who to call for help (along with phone numbers), and how to know when you need help. Make sure all family members or helpers are familiar with the plan. It may help to write it out



Figure 6. Two front legs presented with head back between legs.



Figure 7. Calf presented with its head in the birth canal but one or both forelegs retained.

Breech Presentation

Figure 8 shows a breech presentation. The calf has to be repelled well back into the uterus. Then grasp a leg below the stifle and work a hand down to the foot. Place the hoof into the palm of your hand, withdrawing your arm until the foot is drawn over the pelvic brim. This manipulation is made easier by rotating the hock outward as the foot is pulled up and back.

Twins

If twins enter the vagina one at a time, there is no problem. However, occasionally twins are presented together and block the birth canal. In most of these cases one comes head first and the other tail first (Figure 9). Extract the closest twin. If in doubt, first extract the twin presenting hindlegs after first repelling the other twin far into the uterus.

Before this, make sure both limbs belong to the same calf. To do this, feel along each limb to where it joins the body and feel along the body to the opposite limb. Rope each limb separately and identify the ropes for each twin. If one or both twins are abnormally presented, correct as in a single birth before attempting delivery.

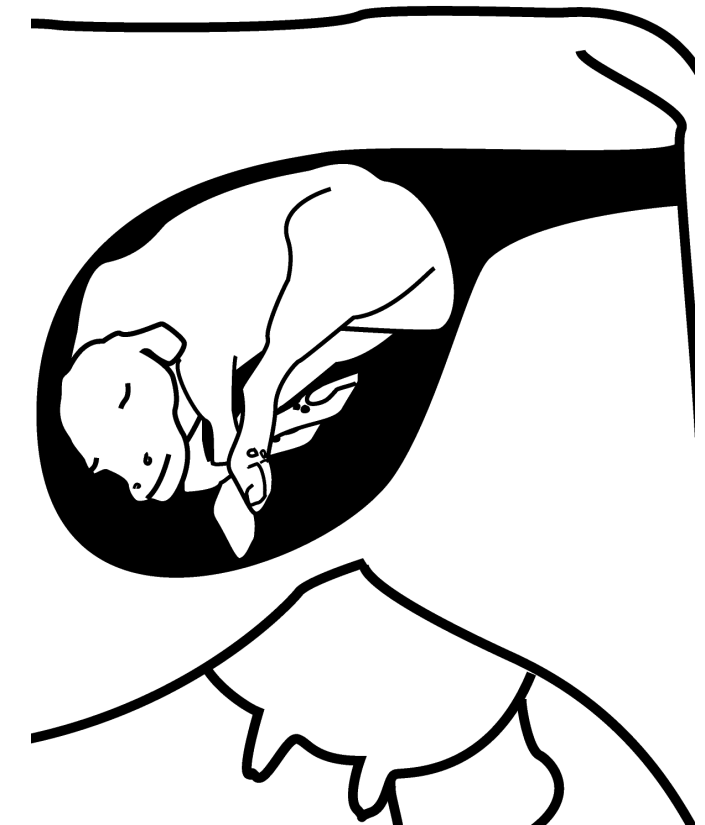


Figure 8. Calf presented in breech position.

After delivery of posterior presentation, more careful attention should be given to removal of mucus from the mouth and nose because of a greater danger of suffocation than in an anterior presentation. A stiff straw should be used to briskly tickle the nostril of the newborn. This will stimulate the calf to snort, sneeze or cough and inhale air into the lungs to begin breathing as soon as possible.

Other Ideas on Pulling Calves

The chain should be tightly fastened above the fetlocks with a half-hitch below the fetlock before applying traction in anterior or posterior presentations. If it becomes necessary to pull on the jaw or head, try to do it by hand or use a soft cotton or nylon rope being careful not to apply excessive pull so as not to fracture the jaw or damage the spinal cord. If a rope is used apply the rope behind the poll and through the mouth. Protect the birth canal from laceration by the sharp teeth by guiding the head with your hand. After the head and neck have passed through the cervix, traction should be applied to the legs only.

Traction should be applied in a steady, even manner. Jerky, irregular pulls are painful and dangerous. Only pull when the cow is straining. If you are pulling and a sudden obstruction occurs, stop and examine the birth canal and calf to find out what is wrong before proceeding. To avoid lacerations to the soft birth canal, time should be allowed for enlargement of the birth canal as the calf advances.

Abnormal Presentations

The following figures illustrate presentation of the calf other than anterior or posterior presentations.

Two Front Legs Presented: Head Retained

If the head cannot be felt, do not assume the calf is coming backward. The two front legs may be presented and the head retained (Figure 5). Before pulling on the limbs, distinguish between forelimbs and hindlimbs as described earlier. Where the head is bent back into the right flank of the cow it will be easier to correct if the left hand is used and vice versa. By grasping the muzzle, the ear, or the lower jaw; or by placing the thumb and middle finger in the eye sockets, the head can be raised and directed into the pelvis. Do not pull hard on the jaw because the jaw can be easily broken.

In all these cases, the head can be brought up and straightened more easily if the body of the calf is at the same time pushed farther back in the uterus. This can be done by placing the hand between the front legs and pushing back the chest, the head being pulled at the same time with aid of a chain placed on the lower jaw. Try to carry out all these operations when the cow is not straining vigorously.

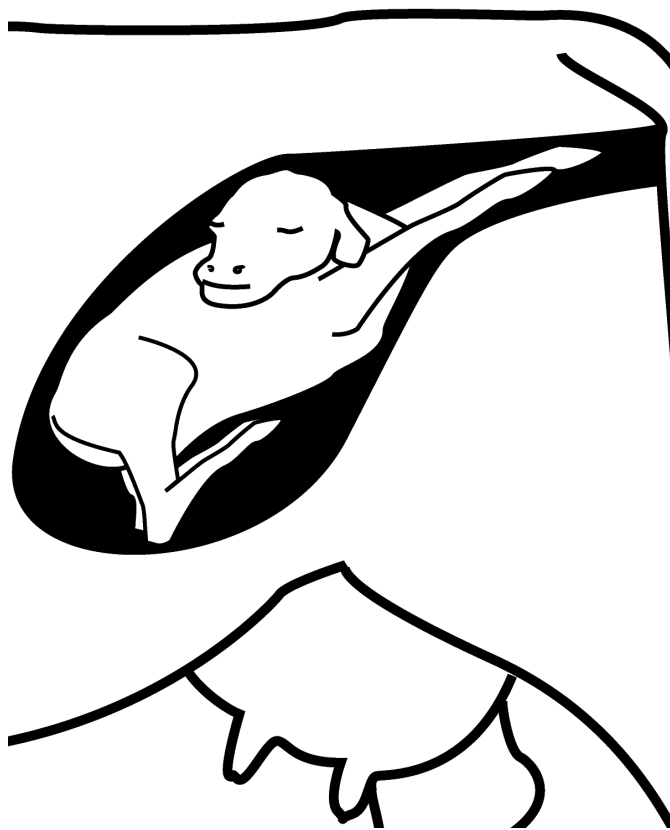


Figure 5. Two front legs presented with head back.

Head Between Forelegs

Sometimes the head falls well down between the legs (Figure 6). Replace one or both limbs into the uterus to raise the head by one of the methods described above.

Another method is to turn the cow on her back. The head of the calf will fall toward the cow's spine and then can be more easily guided into the pelvis by a hand alone or else by a loop around the lower jaw.

Head Out: One or Both Forelegs Retained

The calf may have the head out, but one or both forelegs retained (Figure 7). Secure the head by placing a chain or rope behind the poll and through the mouth then lubricate the head and push it back into the uterus. Then search for the limbs one at a time. Each limb should be grasped just above the fetlock and bent at the knee. Now push the bent knee toward the spinal column and push back so as to bend all the joints of the limb. Meanwhile the hand is gradually moved down the limb toward the fetlock. Now raise the fetlock over the pelvic brim and the leg can move forward.

If the hand alone does not work, chain the fetlock. Push the knee at the same time and pull the rope. Cover the hoof to avoid damage.

and post copies in convenient places. Talk to the local veterinarian about the protocol and incorporate his/her suggestions. Your veterinarian will be a lot more helpful when you have an emergency during the kids' school program if you have talked a few times during regular hours.

- **Lubrication:** Many lubricants have been used and one of the best lubricants is probably the simplest – non-detergent soap and warm water.
- **Supplies:** The stockman should always have in his medicine chest the following: disposable obstetrical sleeves, non-irritant antiseptic, lubricant, obstetrical chains (60 inch and/or two 30 inch chains), two obstetrical handles, mechanical calf pullers, and injectable antibiotics. Do not forget the simple things like a good flashlight with extra batteries and some old towels or a roll of paper towels. It may be helpful for you to have all these things and other items you may want to include packed into a 5 gallon bucket to make up an obstetrical kit so you can grab everything at once.

Signs of Impending Calving in Cows or Heifers

As the calving season approaches, the cows will show typical signs that will indicate parturition is imminent. Changes that are gradually seen are udder development or making bag and the relaxation and swelling of the vulva or springing. These indicate the cow is due to calve in the near future. There is much difference between individuals in the development of these signs and certainly age is a factor. The first calf heifer, particularly in the milking breeds, develops udder for a very long time, sometimes for two or three months before parturition. The springing can be highly variable too. Most people notice that Brahman influence cattle seem to spring much more than does a Holstein.

Typically, in the immediate two weeks preceding calving, springing becomes more evident, the udder is filling, and one of the things that might be seen is the loss of the cervical plug. This is a very thick tenacious, mucous material hanging from the vulva. It may be seen pooling behind the cow when she is lying down. Some people mistakenly think this happens immediately before calving, but in fact this can be seen weeks before parturition and therefore is only another sign that the calving season is here.

The immediate signs that usually occur within 24 hours of calving would be relaxation of the pelvic ligaments and strutting of the teats. These can be fairly dependable for the owner that watches his cows several times a day during the calving season. The casual observer or even the veterinarian who is knowledgeable of the signs but sees the herd infrequently cannot accurately predict calving time from these signs. The relaxation of the pelvic ligaments really cannot be observed in fat cows (body condition score 7 or greater). However, relaxations of the ligaments can be seen very clearly in

thin or moderate body condition cows and can be a sign of impending parturition within the next 12 to 24 hours. These changes are signs the producer or herdsman can use to more closely pinpoint calving time. Strutting of the teats is not really very dependable. Some heavy milking cows will have strutting of the teats as much as two or three days before calving and on the other hand, a thin poor milking cow may calve without strutting of the teats.

Another thing that might be seen in the immediate 12 hours before calving would be variable behavior such as a cow that does not come up to eat or a cow that isolates herself into a particular corner of the pasture. However, most of them have few behavioral changes until the parturition process starts.

When and How to Examine the Cow

It is important to know with complete confidence exactly when and how long to leave the cow and when to seek help. An issue facing the rancher at calving time is the amount of time heifers or cows are allowed to be in labor before assistance is given. Traditional textbooks, fact sheets, and magazine articles state that stage 2 of labor lasted from two to four hours. Stage 2 is defined as that portion of the birthing process from the first appearance of the water bag until the baby calf is delivered. Data from Oklahoma State University and the USDA experiment station at Miles City, Montana, clearly show that stage 2 is much shorter, lasting approximately 60 minutes in first calf heifers and 30 minutes in mature cows (Table 1).

In these studies, heifers that were in stage 2 labor much more than one hour or cows that were in stage 2 much more than 30 minutes definitely needed assistance. Research information also shows that calves from prolonged deliveries are weaker and more disease prone, even if born alive. In addition, cows or heifers with prolonged deliveries return to heat later and are less likely to be bred for the next calf crop. Consequently a good rule of thumb: If the heifer is not making significant progress one hour after the water bag or feet appear, examine the heifer to see if you can provide assistance. Mature cows should be watched for only 30 minutes before a vaginal examine is conducted. If you cannot safely deliver the calf yourself at this time, call your local veterinarian immediately.

Table 41.1 – Research results for length of stage 2 parturition.

Study	No. of Animals	Length of Stage 2
USDA		
(Montana)*	31 mature cows	22.5 min.
USDA		
(Montana)*	29 first calf heifers	54.1 min.
Oklahoma State		
University**	35 first calf heifers	55.0 min.

*Doornbos, et al. 1984. JAS: 59:1

**Putnam, et al. 1985. Therio: 24:385

Most ranches develop heifers fully and use calving ease bulls to prevent calving difficulties. However, a few difficult births are going to occur each calving season. Using the concept of evening feeding to get more heifers calving in daylight and giving assistance early will save a few more calves. This results in healthier more productive two-year cows to rebreed next year.

If nothing is showing after a period of intensive straining of second-stage labor – a period of approximately 30 minutes in a cow and 60 minutes in a heifer – then examine her to determine if presentation is normal. Wash the vulva, anus, and the area in between using soap and warm water. Using a disposable sleeve (shoulder length) and a good lubricant (usually available from your veterinarian), insert your hand slowly and do not rupture the waterbag. If the calf's presentation is not an anterior (Figure 1) or posterior position (Figure 3) or if the calf is very large or the heifer small, you may want to seek professional help.

Proper Placement of Obstetrical Chains

To properly use obstetrical chains when assisting with a difficult birth, follow the example in Figure 4. To attach the chain, loop it around the thin part of the leg above the fetlock. Then, make a half hitch and tighten it below the joint and above the foot. Make certain that the chain is positioned in such a manner that it goes over the top of the toes. In this way the pressure is applied so as to pull the sharp points of the calf's hooves away from the soft tissue of the vaginal wall.

Forced Extraction of the Calf

It is very important at all times to exert pressure only when the animal strains and to relax completely when the patient relaxes. The old idea of maintaining a steady pressure during assistance is wrong, unless the cow has already given up and no assistance is coming from her.

Excessive or improper pressure often causes injuries to the dam such as vaginal tears, uterine rupture, paralysis, or uterine prolapse. All can usually be prevented but when they occur they need the immediate attention of your veterinarian.

Vaginal tears generally heal with proper antibiotic therapy. Uterine rupture usually results in death. Some animals will recover from calving paralysis but may require prolonged care and may not breed again.

Pulling on a calf should only be done when the presentation and posture of the calf are normal. This applies both to an anterior position (Figure 1) and a posterior position (Figure 3). Excess force should never be used in pulling a calf. In most cases, no more than two men should be allowed to pull and then only when the cow strains. Lubricant and patience will often solve the tightest case. Use extreme caution if a mechanical puller is being used.

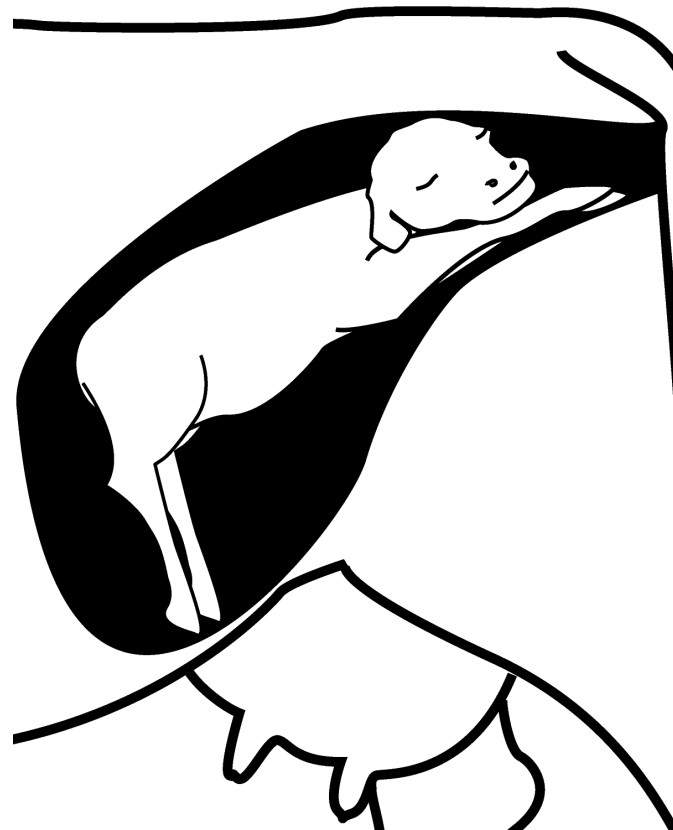


Figure 1. An anterior presentation.

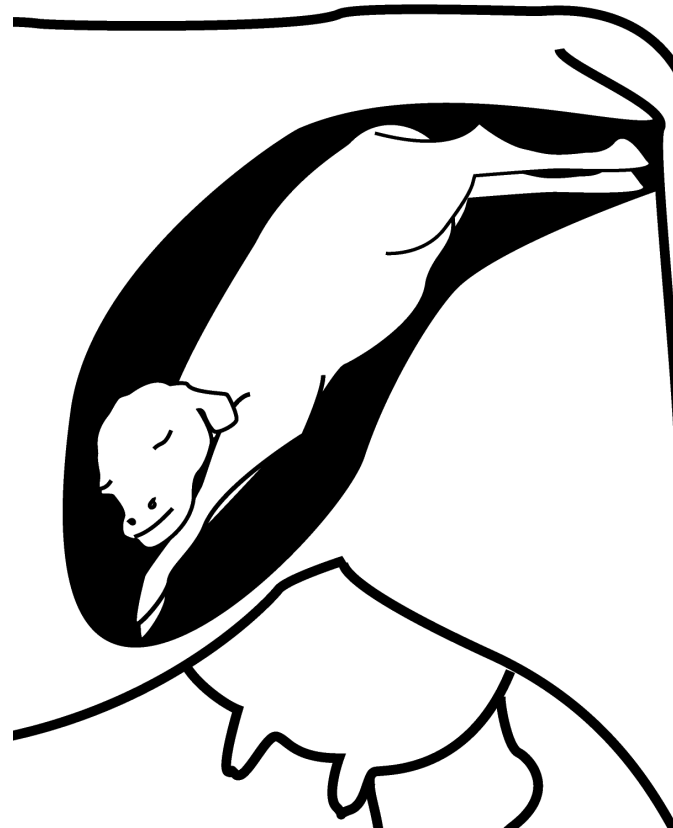


Figure 3. A posterior presentation.



Place loop above and halfhitch below fetlock joint. Connecting chain should be on the top of the leg.

Figure 41.4 – Proper placement of obstetrical chains.

The first step is to examine the cow to check calf position and determine if assistance is necessary. It is generally easier to correct any abnormal presentation if the cow is standing. If a cow or heifer will not get up, she should be so placed that she is not lying directly on the part of the calf which has to be adjusted. Thus, if the calf's head is turned back toward the cow's right flank, the cow should be made to lie on her left flank so that the calf's head is uppermost. This provides more room in the uterus for manipulation.

Once the calf is in a correct anterior or posterior position, delivery will be easier if the cow is lying down. When the calf's limbs are located, find out whether they are forelimbs or hindlimbs. To do this start by feeling the fetlock and moving the hand up the limb. In the hindlimb the next joint is the hock with the prominent point. In the forelimb there is also a prominent point, the point of the elbow, but before this is reached one can feel the knee joint, which is flat and has no prominences.

The calf may be alive or dead. Sometimes movements can be detected in a live calf by placing the fingers in the mouth, seizing the tongue, or touching the eyelids.

If the genital passage of the cow is dry or if the calf itself is dry, plenty of lubricant should be used. Attempts to repel (push back) the calf should be made between labor pains. Similarly, attempts to deliver the calf by traction will be a lot easier if they are made to coincide with the contractions of the cow.

Anterior Presentation

An anterior presentation is forefeet first, head resting on the limbs, and the eyes level with the knees (Figure 1). As stated above, in this presentation the cow does not usually require assistance, unless it is a heifer at first calving, the calf is dead, or the calf is too big for the cow.

If the calf is dead, tie a chain around the head behind the ears and pass it through the mouth. This will prevent the head from twisting when the limbs are being pulled. With a live calf you can do this by placing a hand on the head and ensuring that the head is kept straight. Traction should not be exerted simultaneously on the head and limbs until the head enters the pelvis. A large calf, with shoulders too wide for the pelvis, is sometimes held up at this stage. If so, pull one limb only so that the elbow

and shoulder of one limb only enter the pelvis. Then, while the pull on the limb is continued, the other limb is treated in the same way until both feet project equally from the genital passage. Now apply traction on both limbs and on the head until the head protrudes from the vulva, and from this stage the principle traction is exerted on the limbs again.

It can be seen that traction on both limbs at the same time will result in both shoulders entering the pelvis at once. If the shoulders of a wide-chested calf can be made to enter on a slant and can be pulled through in that position, delivery will be made easier.

IMPORTANT: Traction on the calf in the early stages should be exerted upward (in the direction of the tailhead) and not downward. Once the calf is in the pelvic cavity, traction should be straight backward and then downward. The calf thus passes through the birth canal in the form of an arc.

If the passage of the hind end of the calf presents any difficulty, the body of the calf should be grasped and twisted to an angle of about 45 degrees. Delivery is then made with the calf half-turned on its side. This allows for easier passage of a calf with well-developed stifle joints.

Sometimes a calf gets stuck at the hips (hiplock). Do not just pull, rotate the calf as described above or try turning the cow onto her back, then over onto the side opposite to the one you found her on and try some gentle assistance.

Posterior Presentation

In a posterior presentation, both the hindfeet are presented with the calf's spine upward toward the cow's spine (Figure 3), and the sole or bottom of the hooves will face upward. In a normal anterior presentation (head and forelimbs first) the hooves are downward. If the calf is on its back, however, the position of the hooves is reversed in each of these presentations.

In the posterior presentation, the head is the last part to be expelled, and there is a risk of suffocation or brain damage due to lack of oxygen. Delivery should be as quickly as possible by traction on the hind legs. Traction should be exerted on one limb until the corresponding stifle joint has been drawn over the pelvic brim. It may be necessary to push the other limb partly back into the uterus at the same time. In this way the two stifle joints will enter separately into the pelvis and assist easier delivery.

After the first limb has been drawn back sufficiently, traction should be applied to both limbs simultaneously. If this does not succeed, cross one limb over the other and pull on the lower limb. This will make the calf rotate slightly to one side and delivery will proceed more smoothly.

The calf's tail may have a tendency to protrude upward and damage the top of the vagina. Be sure the tail is down between the legs by placing your hand on the tailhead while the calf is entering the pelvic cavity.