

# The Three Stages of Bovine Parturition



Sandy Stuttgen

There are three stages to the birthing process, or parturition: dilation of the cervix, delivery of the calf and delivery of the placenta. Knowing the normal birth process will help you decide whether or not to intervene.

**Stage 1: Dilation of the Cervix.** You might not even notice this stage, which may take days to complete. Uterine muscular activity is quiet during this stage as the cervix softens, and the pelvic ligaments relax. At this time you may see a thick clear mucus “string” hang from the vagina. You may notice the cow’s appetite decrease and she may prefer to be off by herself. Uterine contractions begin by the end of stage one, pushing uterine contents against the cervix, causing further dilation.

**Stage 2: Delivery of the Calf.** This stage officially begins with the appearance of membranes (water bag) at the vulva. Start your clock at this time: traditional texts say the calf should be delivered within 2 to 5 hours of the moment you first see the water bag. More recent research has found that healthy heifers with normal calf presentation will calve unassisted within one hour of the start of stage two; healthy cows with normal calf presentation calve within 22 minutes of the start of stage two.

So when will cows need assistance? The decision to intervene is a matter of judgment, and judgment improves with experience. The cow that labors over an hour with the front feet and nose of the calf showing and no signs of further progress would certainly appreciate a little help. The cow that labors over an hour with nothing showing obviously needs help. You may feel uneasy watching a laboring cow when you haven’t set your clock; as you won’t know when stage two actually began. To put your mind at ease, you’ll need to conduct a vaginal exam.

This exam begins by cleaning the cow’s vulva, rectum, surrounding area and under the tail as well as your hands and arms with soap and water. Cleanliness is very important. Wear protective sleeves. Gentleness and lubrication are also important. Place

your hand in the vagina and try to figure out what is happening. Feel for the cervix, if it is not dilated, it will feel as if your hand passes through or along a firm, tubular or circular structure. Once dilated fully, you should no longer feel the cervical edge.

Can you put your hand on the calf? Is there straight-line access to touch it? Or does your hand have to turn or twist through folds of vagina in order to touch the calf? If so, a uterine torsion is present, and you probably need to call for veterinarian assistance.

**Normal presentations are either anterior or posterior.** Anterior presentation is of the head (nose) and two front feet with the spine of the calf resting against the underside of the cow’s spine. Posterior presentation is one of two rear feet and a tail; with the spine of the calf resting against the underside of the cow’s spine. If the presentation is normal, you may allow the cow to labor for 40 minutes to an hour, especially if the water bag is still present around the calf. If the water bag has broken, the calf should be delivered sooner (as long as the cervix is fully dilated).

**The following criteria can be used to judge whether extraction of a calf in anterior presentation is possible:**

- In the **standing animal** with the calf’s head completely in the pelvic cavity and with the pull of one person during a contraction, you should be able to place a hand between the calf’s head and the cow’s backbone and you should also be able to feel both points of the calf’s shoulder 2 inches (three fingers width) or less forward to the pelvic inlet.
- In the **recumbent animal** you must be able to feel the points of the shoulder two inches or less forward of the pelvic inlet.

If it is impossible to view the hocks with one person pulling, extraction of a posterior presentation may not be possible. When the calf’s hip joints pass into the pelvic canal, its hocks will be visible about one hand’s width beyond the vulva. If you can’t extract the hocks, a pelvic miss-match is occurring; traction should be discontinued and other methods of delivery explored.

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In attempting to correct a malposition, it is useful to list what **can’t be done** so you don’t waste time trying.

First, get the cow up and on her feet, restrained in a well-lit area that is safe for both you and cow to work in. It is much easier for you to work when both you and the cow are standing. There is more room for you to manipulate the fetus when the cow’s abdominal contents are not pushing up and against the pelvic canal. It may improve your reach if you stand on a firm, raised platform such as a hay bale or block

1. Don’t change an anterior position into a posterior one or vice versa—there isn’t enough room.
2. You can’t deliver an anterior presentation unless both legs and the head are through the cervix.

Sometimes only the legs come through and the head turns away. The head must be straightened, snared or otherwise committed to the

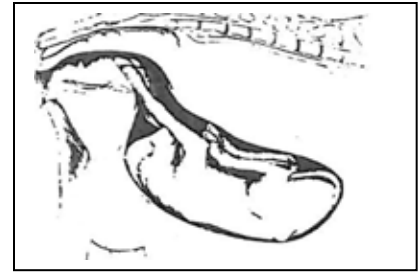
cervix before you continue traction.

3. You can't deliver three or more legs through the cervix. They may be from the same calf or from twins. The proper two legs have to be sorted out and the others pushed back out of the way.
4. Only rarely can you deliver a calf with just its' head through the cervix. Push it back and bring the forelegs through first. It may be smart to take a minute to snare the head so you can keep tract of it before you push it away from you. If the head is swollen and already delivered past the vulva, and the calf is dead, the head may need to be amputated first to make room to get the legs through.

There may be times when you can't get a veterinarian to help with a complicated delivery. The graphics depicted by Dr. Hayes, DVM in his book "Keeping Livestock Healthy" also provide some guidance. Whenever possible, however, get a veterinarian to help with complicated cases because the outcome is likely to be far better.

**Stage 3: Delivery of the Placenta.**

The placenta should be shed within 8 to 12 hours of the calf's delivery. If retained (by definition, placenta not shed after 12 hours), do not forcibly remove it. Administration of antibiotics may be warranted if the cow acts sick. The placenta will slough out in 4 to 7 days.



**Anterior position, fetus upside down.** Rotate 180° and normal delivery follows.

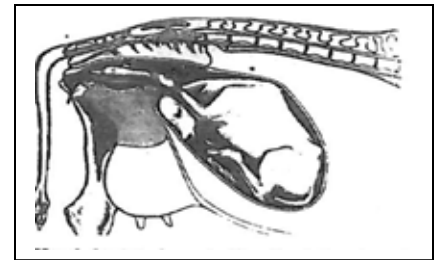
**Head deviated ventrally.** Push head and shoulders back and bring head up into position.



**One foreleg retained.** Head and foreleg must be pushed back while retained leg is flexed and brought into position.



**Head deviated to one side.** Push forelegs back to make room and bring the head into position



**Anterior position, head and neck deviated.** Head must be brought into the pelvic canal. Difficult to handle. May require surgically cutting the calf apart or Caesarian section.



**Breach position.** While applying forward pressure to the rump, bring the hind legs into the pelvic canal.

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