



I Didn't Know My Calves Had Navel Infections!

A sick calf often has loose manure, labored breathing and a high temperature. If the calf dies, how do you know what caused the death?

In the FrontLine® entitled *Turn That Dead Calf Into an Asset*, we looked at some basic post mortem exams that can help you and your veterinarian determine the cause of calf loss — and point the way to an effective prevention plan. To review, these areas were:

Lungs

It's important to determine if the lungs are involved in the death of a calf. A post mortem allows us to actually look inside the chest cavity and see if the calf suffered from an actual pathogen infection of the lung tissue.

Kidney

The fat tissue that normally surrounds the kidney is one of the last areas of fat to be mobilized in support of basic body functions, such as maintaining body temperature. An absence of fat around the kidneys is a sign that the calf may have died from "starvation."

Umbilical Cord (Navel)

Post mortem examination of the umbilical cord can determine whether pathogens had penetrated the internal organs through the umbilical vein and arteries.

This FrontLine® issue will focus on strategies and options a calf raiser may choose to implement if your calves are suffering from umbilical cord infections.

Although these recommendations are all proven techniques, we strongly urge you to review your findings and your action plan with input from your local veterinarian and a calf nutritionist where appropriate.

Umbilical Cord Tissues

The umbilical cord on a newborn calf is the residual pipeline from the mother's blood to the calf. The unborn calf uses the mother's circulation for nourishment and her urinary system to remove the waste products that the developing fetus produces. During birth, the cord is stretched until it breaks. Then the calf is cut off from the maternal blood supply and becomes truly "on its own."

Once the calf is born, the external part of the umbilical cord begins to shrink and dry up. Eventually, it falls off leaving a modified scar we call the navel. This natural process works especially well when calves are born in large pastures with lots of fresh grass and few other cows — conditions ensuring a clean, dry birthing area.

When a calf is born in an area that is not clean and dry, the cord can easily become exposed to pathogenic bacteria. Any amount of manure, dirt or urine that gets on a newly broken cord can be wicked up into the calf's body leading to an infected cord and potentially very serious problems.

The infection can follow the same blood vessels used by the mother's blood prior to birth. It's a direct path into the blood stream of the newborn calf — allowing bacteria access to the blood and inner tissues. This is a dangerous condition in a neonatal animal whose natural defenses are not yet fully developed.



These pathogens can accumulate in body areas such as the joints, kidneys, liver and lungs. Calves can harbor these pathogens for many days and weeks. In addition, the calf can develop a high fever as bacteria and the toxins they produce flow through the blood stream. Abscesses and septicemia can result.

The first step to prevent these infections is to make every effort to keep the neonatal umbilical cord free of contamination. This is best accomplished with clean, dry bedding area in the birthing pen.

The next best thing is to promptly dip the external part of the remaining cord in a 7% iodine solution. Dipping the cord in iodine solution will help destroy any pathogens before they can penetrate and infect the tissues. In addition, the solution (which contains alcohol) will also help to dry up the cord.

A final benefit of using iodine is the visible orange stain that will tell you this process has been completed. The color is very obvious and an easy way to determine if full soaking of the cord is occurring or if just a part of the cord is actually being exposed to iodine.

Management Action Plan

There are some management changes that may need to occur if umbilical cord infection is found to be a problem on your calf operation. These include:

- Maintaining a clean and dry maternity area.
- Dipping the navel at birth with a 7% iodine solution. Be sure to actually dip the navel to make sure the entire cord is submerged in the solution.
- Redipping the navel at 24 hours of age. Once again, make sure the entire cord is actually dipped. Spraying does not give consistent coverage of the entire cord.
- Palpating (physically feeling and massaging) the cord at 3–5 days of age. The cord should not be any bigger in diameter than your small finger. It should also be soft and pliable. If it is hard, enlarged or causes discomfort to the calf when gently squeezed, this may indicate an infection.
- Palpating the cord in any calf showing signs of sickness that is less than 2 weeks of age.
- Antibiotics: Follow your veterinarian's advice to be sure an appropriate antibiotic is used at the correct dosage for treating an umbilical cord infection.

These points are just the beginning steps to controlling umbilical cord problems in your calves. It's important to respond quickly to the problem when you see it. Left untreated or poorly treated, navel infections in calves will lead to lameness, poor weight gain, and possibly death later in life.

Quick (and correct) action to minimize umbilical cord infections when first seen will lead to healthier, better growing animals throughout their lives.