

Take steps to prevent, treat

NAVEL ILL

Story & photo by Heather Smith Thomas

Newborn calves are vulnerable to many types of infection and disease. Navel ill, or “joint ill,” is a common problem when calves are born in a dirty environment, such as a pen or pasture where cattle have congregated, or a barn stall that hasn’t been cleaned between calvings. Wherever there is manure, discharges from cows that have calved, or cattle with foot rot or other infections, there is risk of infection to newborn calves. The best prevention for navel infections is to calve on clean pasture where cattle have lots of room or in a clean stall with fresh bedding.

The disease

Pathogenic bacteria that enter via the umbilicus can affect a calf in a variety of ways. Infection may be confined to the local area, creating a navel stump that is slow to dry up, and a local abscess. It may spread to the blood, causing bacteremia. The pathogens circulate through the body and may localize somewhere else, causing problems in various organs or joints.

Some bacteria produce toxins, which may cause septicemia (a systemic disease commonly known as blood poisoning); the calf becomes very ill and may quickly die. Bacterial toxins kill the calf by sending it into shock, due to circulatory problems, and by causing multiple organ failure.

Infection often settles in leg joints since they are stressed from bearing weight. If the calf survives, it may have enlarged, stiff, painful joints due to inflammation. Other sites where bacteria may localize are the eyes, the lining of the heart cavity, and the membranes enveloping the brain and spinal cord. The latter is usually fatal.

Navel infection occurs soon after birth. There is risk until the stump dries up and seals off. The umbilical cord consists of amniotic membranes surrounding blood vessels (that carried blood between the placenta and developing fetus) and the urachus (a canal connecting the fetus’s bladder to the outer part of the placenta).

The umbilical cord is torn at birth and the broken arteries retract into the abdomen, sometimes as far as to the top of the bladder. The umbilical veins and urachus close up, but this stump remains temporarily outside the abdomen until it dries up and falls off. If it does not become infected, it dries up in a few days. A navel stump that does *not* dry up is usually an indication of infection.

Treatment

A calf with a navel infection is often given systemic antibiotics to combat bacteria. If the calf is sick (fever or other signs of bacteremia or septicemia) and not nursing enough, it



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may need supportive fluids administered by a stomach tube, or intravenously (IV) if the gut shuts down. Antibiotics should be continued until the calf is completely well and has normal vital signs with no more heat, pain or swelling in the joints — perhaps two weeks or more. If treatment is halted too soon, the infection may relapse.

Inflammation of external portions of the two umbilicus (without systemic illness) is very common in calves and occurs within two to five days after birth. The navel becomes enlarged and painful to the calf when touched. It may be a closed swelling, or open and draining. The umbilical stump has usually not dried up yet.

Merely opening the abscess and flushing it generally won’t get rid of the infection. Infected navel tissue must be surgically removed and flushed with an antiseptic solution for swift healing.

If the umbilical veins have become infected, the inflammation may travel along them, possibly extending to the liver. A large

abscess may take up as much as half of that organ. Affected calves are usually 1-3 months of age when this illness becomes obvious, and they are usually unthrifty because of chronic toxemia. The navel may be enlarged, but in some cases there may be no external swelling.

Laying the calf on its back and palpating the abdomen beneath the navel area in the direction of the liver may reveal a firm abscess. You will need veterinary assistance, since removal of the

abscess is necessary to save the calf. If the liver abscess is quite large, there may be no hope for saving the calf.

Infection of the urachus can sometimes occur — anywhere from the navel to the bladder. The navel is usually enlarged and draining, but not always. Deep palpation of the calf’s abdomen may reveal an abscess. If the infection extends to the bladder, the bladder itself may be infected (with pus in the urine). Surgical removal of these abscesses usually results in complete recovery.

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Prevention

If calves are born where there is risk of infection, the navel stump of each calf should be immediately dipped and fully saturated with a good disinfectant. Tincture of iodine has been traditionally used because it is an astringent and acts as a drying agent, helping the navel stump dry up and seal off more quickly. It is usually better to dip the navel cord than to squirt iodine up into it, since the latter method tends to irritate the tissues (veins and urachus) more, making them slower to heal.

The navel of a heifer calf usually dries up in 24 hours or less if it is not infected, but that of a bull calf takes longer. The navel stump is close to the sheath in a bull, and if the calf urinates while lying down (as many bull calves do), the cord may become repeatedly wet with urine, making it slow to dry up and seal off.

If calves are born in a clean stall, they may not pick up an infection at birth. But if they are put out into holding pens or contaminated pastures before the navel stump has dried, they may still be at risk. The

best way to prevent problems is to make sure the navel stump is completely dry before a calf leaves the barn. One dipping with iodine at birth is often adequate for a heifer, but not for a bull. It may take several dippings during the first 12-24 hours to get the umbilicus dried and safe from outside contamination. On farms where navel ill is a problem, multiple applications of iodine may be necessary during the first day after birth to prevent infections.

