

Navel Infections in Beef Calves

A Guide for Beef Cattle Producers

In the Western United States, 5% of cattle operations reported at least one case of navel infection in calves on cow-calf operations, according to the USDA National Animal Health Monitoring System. This costly health issue is likely to be more prevalent than reported, as identifying cases without handling the calf is difficult.

What is a navel infection, and what causes it?

The umbilical cord connects the growing fetus to the placenta in the womb. After birth, the umbilicus or navel will seal up at the site of the previous umbilical cord attachment. During this time, a calf is vulnerable to navel infections.

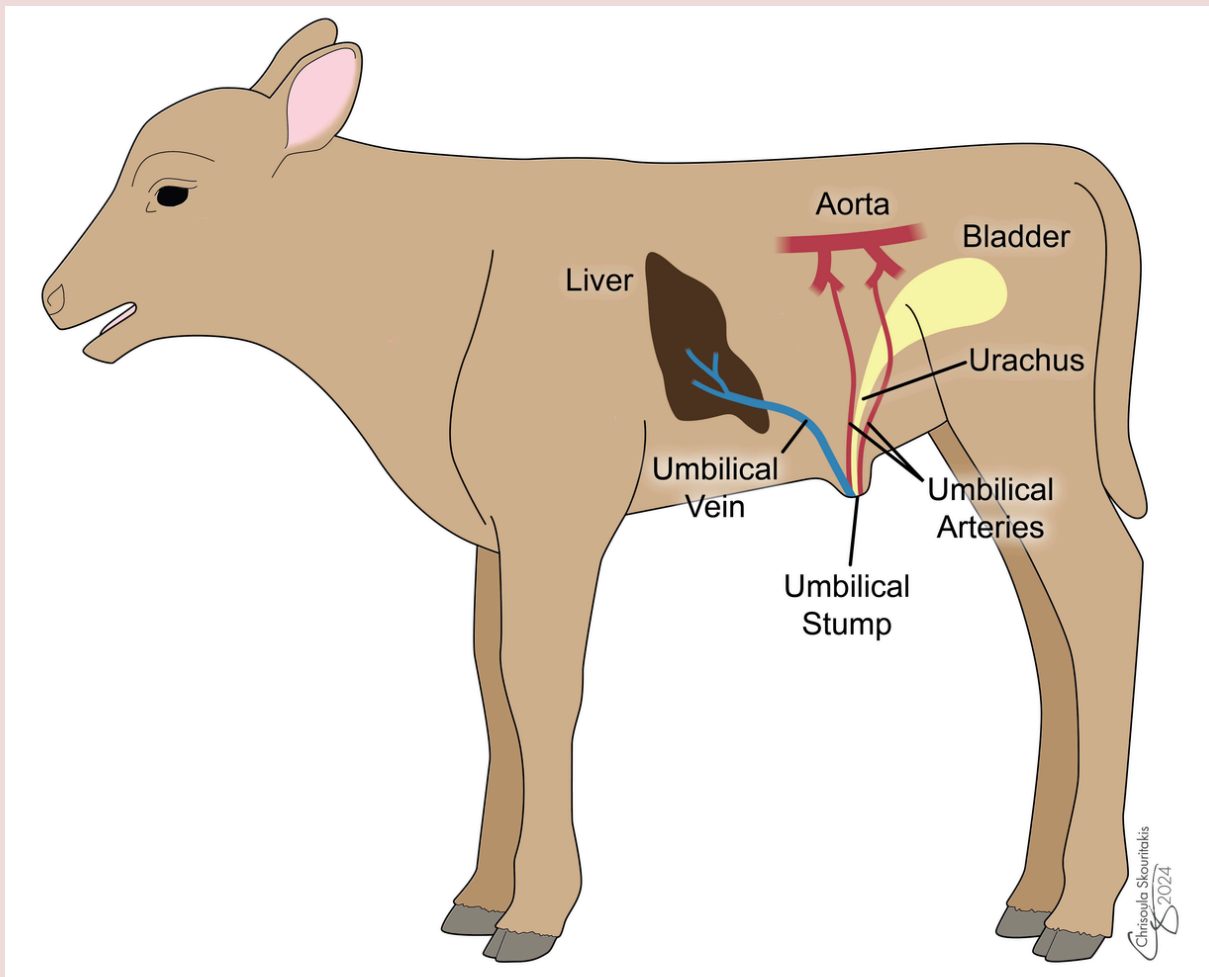


Figure 1: Umbilical structures in the newborn calf. (Illustration by Chrisoula Toupadakis Skouritakis, PhD.)

- ▶ The umbilical cord allows for the transfer of nutrients from the dam to the fetus and for waste products to leave the fetus.
- ▶ During calving, the umbilical cord ruptures, and the remaining tissues dry and fall off within a few days.
- ▶ Before the drying process is complete, the umbilicus is a potential entry point for disease-causing bacteria to enter the calf's body.
- ▶ Depending on the type, number, and timing of bacteria that gain access through the navel, an infection may result.
- ▶ Navel infections can lead to swollen tissues localized to the navel region (umbilical abscess) or more systemic infections affecting the joints (arthritis), liver, or the whole body (septicemia aka "navel ill").

What are the risk factors for navel infections in beef calves?

☐ Failure of Passive Transfer (FPT)

- Consuming at least 5% of their body weight of good quality colostrum twice in the first 12 hours of life is a good rule of thumb to promote passive transfer of immunity and prevent FPT in calves.
- See a separate handout: ["Failure of passive transfer \(FPT\) in cow-calf herds: How to manage and assess FPT in a beef herd"](#) for more information.

☐ Calving Environment

- Calves that are born in a clean, dry environment have a lower risk of developing navel infections than those that are born in muddy, contaminated environments.

☐ Density of Dams on a Calving Pasture

- The higher the density of dams on calving pasture, the higher the risk for newborn exposure to disease-causing organisms.



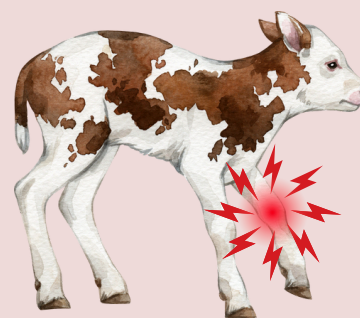
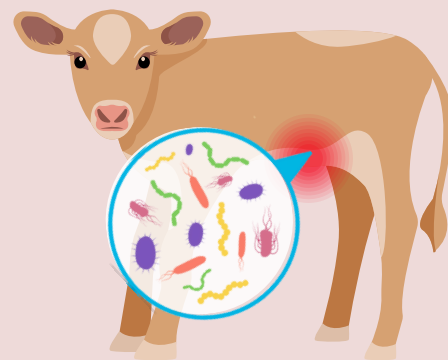
Image 1: Example of a clean calving environment.

What are the signs of navel infections in beef calves?

Navel infections usually occur during the first two weeks and up to four weeks of life. Check calves for the following signs at least twice per day during the calving season and while calves are under two weeks old.

Symptoms

- ▶ Swelling of the navel area, with or without discharge in the form of pus. (Note: swelling may not always be obvious, especially when observing calves from afar.)
- ▶ Calves may appear listless and have a reduced appetite.
- ▶ Stiff, swollen, painful, and sometimes hot joints.
- ▶ Painful calves may arch their back or take short steps.



What to do if you suspect a navel infection in a calf...

- ▶ Call your veterinarian and/or consult your herd health protocol.
- ▶ Navel infections typically require treatment with antibiotics and pain control (as prescribed by your veterinarian).
- ▶ Sometimes, more invasive procedures, such as draining, flushing, or surgical removal of tissues, may need to be performed by the veterinarian.
- ▶ Though some cases of navel infection may be unavoidable, it's best to discuss control strategies with your veterinarian to reduce their occurrence.

How can navel infections be prevented?

- ▶ Good colostrum management and hygiene practices (mentioned below) can reduce the risk of navel infections.

□ Navel Dips

- Dipping the umbilicus shortly after birth to disinfect the cord remnants and speed up the drying of tissues is commonly practiced, especially in the dairy industry.
 - A solution of 7% iodine or chlorhexidine may offer the best protection.
- Research shows that this procedure may not be as effective as previously thought; catching calves just for the purpose of navel dipping may not be worth the added stress ([Lang et al., 2022](#)).

- ▶ You may need to evaluate your calving area and/or colostrum management to reduce the number of cases in the future.

□ Available Products

- Though several products marketed for navel dipping in calves will disinfect the navel, it is unknown which of these products is preferable.
- Many iodine-based products, such as teat dips, Betadine (Povidone-Iodine) solution or surgical scrub, are likely not as effective as the most studied, 7% iodine. Those products contain less iodine and they do not contain any alcohol, which acts as a drying agent.
- Some of the navel dips may look like they are 7% iodine tincture, but they are not. For example, Super 7 Ultra Navel Care by Vetericyn contains no iodine (the active ingredient is sodium hydroxide) and Triiodine-7 by Durvet has 7% active ingredient, only one of which is iodine.
- Ideal products should contain a high percentage of iodine; the product most tested in clinical studies, 7% iodine tincture, may be difficult to obtain. A good alternative is 2%-4% chlorhexidine solution.



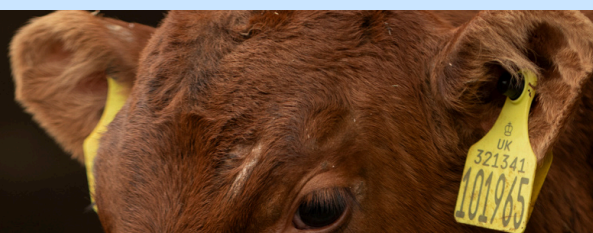
Image 2: Example of iodine.

Summary:

1. Monitor calves for signs of navel infection. This includes arched back, short steps, or decreased appetite.
2. If more than one or two cases of navel infection occur, re-evaluate colostrum management and calving hygiene and consider a navel dip.
3. Consult a veterinarian for treatment of individual cases with navel infections and how to reduce the number of cases in the future.

References

- Lang D, Sickinger M, Wehrend A. [Impact of umbilical disinfection on the calf's umbilical health - A critical review of the literature]. Tierarztl Prax Ausg G Grosstiere Nutztiere. 2022;50(3):157-162. <https://doi.org/10.1055/a-1855-9908>
- Lang D, Scheu T, Cohrs I, Koch C, Wehrend A. Influence of birth weight, sex and disinfection on the involution of umbilical structures in calves. Veterinary Record. 2023;192(10):e2730. <https://doi.org/10.1002/vetr.2730>



CDFA Antimicrobial Use and Stewardship | www.cdfa.ca.gov/ahfss/aus

UC Agriculture and Natural Resources | <https://ucanr.edu/site/newborn-beef-calf-health>

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