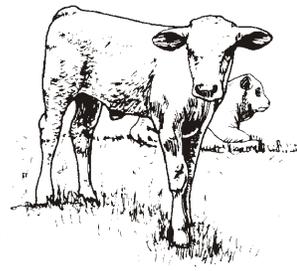


Recognizing and Managing Common Health Problems of Beef Calves



Floron C. Faries, Jr., DVM, MS, Professor and Extension Program Leader for Veterinary Medicine, Department of Large Animal Medicine and Surgery, College of Veterinary Medicine, Texas Cooperative Extension, The Texas A&M University System, College Station, Texas 77843-2487

“My calves’ eyes are cloudy and runny.”

When calves are observed to have cloudy, runny eyes, it is expected that the inflamed and painful eyeballs and eyelids are infected with a virus or bacterium or damaged from sunlight. Close observation, available history, laboratory testing and professional assistance may be necessary to make a specific diagnosis and proper treatment.

Pink Eye (Infectious Keratoconjunctivitis)

Although sporadic cases of eye diseases occur in all seasons of the year, this highly contagious, bacterial disease is most common during the summer months. Sudden onset begins with excessive flow of tears, holding the eye partially closed, rubbing the eye and seeking shaded areas. An ulcer develops within a short time in the central area of the cornea. An opaque ring develops around the ulcer, and within 48 hours of onset the entire cornea becomes cloudy. The infection may affect one or both eyes. The lining of the eyelids becomes red with mucus and pus. As the ulcer deepens and extends completely through the cornea, the eye ruptures with loss of fluid and collapse of the eyeball. Immediate treatment and isolation of infected cattle are essential to recovery and in prevention of spread to other cattle.

IBR Virus Eye (Infectious Bovine Rhinotracheitis)

Upper respiratory infections are caused by the aerosol transmission of this virus that spreads rapidly through the herd and is most prevalent in the fall and winter. In the early acute stage, few cattle may develop cloudy cornea similar to pink eye. The opacity spreads inward from the outer edge of the cornea, and there is no ulceration. Control measures include isolation of affected animals and vaccination of the whole herd and purchased replacements.

Photo Eye (Photosensitization)

This noninfectious condition is a hypersensitivity to sunlight after ingestion of various plants or administration of certain drugs. In addition to cloudiness of the cornea of eyes, non-pigmented eyelids and nose, teats and vulva and areas of head, body and legs are commonly sunburned. Prolonged exposure of affected cattle to sunlight will cause blindness and severe skin damage. Sheltering during the day with grazing on pasture at night must be provided for protection from sunlight until the eyes and skin have healed.

“My calves have areas of hair loss with skin lesions.”

Calves commonly become infected with ringworm fungus and wart virus. The two infectious, contagious conditions are easily recognized and differentiated by the gross appearance of the localized hair loss with skin lesions. In cases where the hair loss with skin lesions is generalized, other causes for consideration are photosensitization, dietary deficiencies, worm infections and horn

fly and lice infestations.

Ringworm Fungus (Dermatophytosis)

The early stage of a fungus infection in the skin quite often goes unnoticed because of poorly visible small areas, slightly raised with roughened hair. Infected cows serve as common sources of the fungus that is transferred by direct contact to calves. After several weeks of the fungus infiltrating hair follicles, the hair falls out leaving circumscribed grayish lesions. The scaly lesions, which coalesce to form large patches of hair loss at least 3 inches in diameter, are frequently located on the face and neck and more common in young cattle. Although the infection tends to be self-limiting with spontaneous recovery after several months, affected calves should be separated and treated to prevent transmission to other calves.

Warts (Papillomatosis)

Warts are fibrous tumors of the skin and mucous membranes and caused by many strains of the papilloma virus. The virus is usually transmitted to calves by direct contact from infected cows. Other means of transmission are by contaminated instruments that puncture the skin and biting flies, such as horn flies and stable flies. The cauliflower-type growths occur primarily on the head, neck and shoulders, in the mouth and vagina and on the teats, vulva and penis. To prevent transmission to other calves, the calves with warts should be isolated. Over a period of 3 to 12 months, the affected calves build immunity against the virus in the warts and skin. Once the immunity kills the viruses, the warts dry and sluff.

“Every winter my calves rub their heads, necks and shoulders.”

Even though lice are known in the winter to cause calves to itch and rub on objects such as fences, posts, trees and barns, another common cause of itching and rubbing is due to an aftermath of the allergic dermatitis produced during the previous summer and fall by a horn fly infestation.

Horn Fly Allergy (Allergic Dermatitis)

During the horn fly season, cattle quite often develop a skin allergy to the saliva of the biting horn flies. After several weeks, large quantities of hair follicles are destroyed by the inflammatory reaction in the skin. Before the damaged hair comes out during the winter, the retained hair causes an itch sensation; the cattle rub from December through March their faces, necks and shoulders. As a result of rubbing these areas, the hair coat becomes sparse and irritated skin lesions are evident. Once the dead hair is removed by rain and rubbing, a normal hair coat returns. In the absence of crawling lice on the skin or lice eggs glued to the hairs, diagnosis is based on a history that the cattle had the previous year a horn fly infestation. To prevent recurrence of this cold season problem, implementing measures to reduce the horn fly population are necessary in the warm seasons.

“I have occasionally a calf crippled on one foot.”

Careful physical examination of a crippled calf with a lame foot includes picking up the foot and washing and examining carefully between the toes for a foot crack, a corn, swelling, heat and a discharge. Professional assistance is necessary to differentiate other abnormal conditions of the foot. Unobservable problems inside the foot are bruises, abscesses, fractures and foot founder or laminitis. Of course, the lameness may be related to joint inflammation of the leg, including the hip on the rear and shoulder on the front.

Foot Rot (Necrotic Pododermatitis)

In the absence of a foot crack, in which the web of skin between the toes is not deeply cracked, but yet a draining infection with a foul odor is observed, a soil-borne bacterial disease of the foot is likely. In addition to a hot, swollen and painful foot with a dead odor, fever and loss of appetite and body weight are normally observed. During warm, wet weather, the bacteria in mud mixed with manure commonly gain entry through minute cracks and abrasions of the skin between the toes and heel bulb, causing swelling and dead tissue. The infection may spread to the skin of the pastern and fetlock and to bone joints inside the foot. Since the pus discharge contains bacteria and serves as a source of new infections, the calf should be segregated from the rest of the herd for proper treatment. To prevent occurrence of more cases, corrections of the unsanitary conditions are essential.

“One of my calves has fever, labored breathing and coughing attacks.”

The calf obviously has a lung disease in which inflammation elicits an irritated cough and reduced air space encourages rapid, difficult breathing. Since a number of infectious and non-infectious causes are possible, professional assistance is necessary to make a specific diagnosis by physical and laboratory examinations. Pneumonia is a common infectious disease.

Infectious Lung Disease (Pneumonia)

Fever, coughing and labored breathing are present due to inflammation and swelling of the lungs and accumulation of mucus, blood and pus in the air passages that interfere with airflow. In attempt to get more air, the head and neck may become outstretched and the tongue protruded. Pneumonia is a highly complex, contagious disease and may be caused by one of several viruses in concert with various bacteria. Bacteria generally cause serious pneumonia, either as primary or as secondary invaders. Since predisposing stress factors contribute to the appearance of the disease by lowering the animal's resistance, management directed towards adverse conditions of calves is needed to prevent more cases of pneumonia. The sick calf must be isolated for treatment. It is concluded the infectious agents are harbored in the cowherd; therefore it is advisable to know by laboratory tests the specific viruses or bacteria involved to develop an effective vaccination plan. The plan should include vaccinating the cows, nursing calves, bulls and replacements with the proper vaccines.

“My calves have a runny, snotty nose.”

Runny, snotty nose can possibly be associated with pneumonia if the calves have fever, are coughing and have labored breathing; otherwise, the calves may simply have an inflammation of the sinuses of the head, which is called sinusitis.

Runny, Snotty Nose (Sinusitis)

Nasal drainage in calves may be normal discharging of secretions of mucus from the sinuses of the head. Excess quantities of drainage from inflamed sinuses are evident during days of extreme hot or cold temperatures or windy conditions, even in the absence of infections. Also, irritants and allergens in the environment such as dust, pollen and mold cause inflammation of sinuses. Viral and bacterial infections inflame the sinuses, produce a head cold and cause a nasal discharge that is a clear, mucus or pus type. Quite often, the infection is limited to the head without involvement of the lungs. Use of antibiotics is contraindicated with low-grade fever and in the absence of fever, in

which the condition is allowed to run its course. Respiratory vaccines may lack the specific antigens to prevent recurrence.

“I had several calves suddenly die that before dying were rapidly breathing, weak and feverish.”

Since a number of infectious causes are possible, professional assistance is necessary to necropsy one of the dead calves and make a specific diagnosis by physical and laboratory examinations.

Lepto (Leptospirosis)

Lepto is caused by one of five serovars of bacteria. Infected animals, such as cattle, raccoons, skunks, opossums, rodents, deer, swine and dogs, shed bacteria for many months with urine as they urinate. Although urine of various wild and domestic animal carriers may be sources of infection, likely exposures to calves are from urine of subclinical carrier cows stressed at calving and of diseased and convalescent calves. Transmission to calves may occur from ingesting contaminated urine on teats and hair, on grass and hay and in water. Newborn calves are the most susceptible to the acute disease with high fever, rapid and difficult breathing, depression, bloody urine, incoordination and death. Lepto calves are mistakenly diagnosed and treated for pneumonia. Since the bacteria can kill unborn calves as well as nursing calves, an evaluation of the cow herd's pregnancy rate and observations for aborted fetuses are suggested. Annual vaccination of all cattle in a closed herd, or twice yearly vaccination in an open herd, is the most effective approach to control. Timing the vaccination in the cow herd during the last trimester of pregnancy will provide immunity through colostrum to newborn calves. Polyvalent killed vaccines containing three or five common serovars are suggested. Different vaccines vary in efficacy, and vaccine failures may occur.

Blackleg (Clostridial Disease)

When the cause of sudden death of a calf is blackleg bacterial toxins (poisons), the first point to make would be the calf swallowed blackleg spores from the soil. This means the premise is contaminated with the spores that never die. During rains these spores are normally concentrated by surface water in various spots in the ground, and drought or rains will surface them from the soil. When the spores are ingested they go to muscles and remain dormant. A trigger breaks them out of dormancy sometime later, like months or years. Then the bacteria rapidly multiply and produce toxins in the muscles, killing the muscles (black dead muscles), causing blood poisoning and sudden death. The most common trigger is fast growth. Another trigger is muscle exertion as caused during working, weaning and hauling. Affected calves may become infected at an early age and die of blackleg at a later age. When blackleg occurs, the transmission was not necessarily recent, but possibly months ago. The death is so rapid that treatment is normally ineffective. All dead calves should be burned with untreated wood products to prevent ground contamination. Since other calves can have the bacteria in dormancy, guarding against triggers is suggested. The remaining calves should be vaccinated, but if other calves die, they were already infected with the dormancy of blackleg bacteria before vaccination. Vaccination after exposure will not prevent the dormancy from breaking out. The 7-way blackleg vaccine should be used since other strains in addition to blackleg can be present, which also cause sudden death. The seven strains can only be diagnosed in a dead calf by necropsy and laboratory tests. In addition to blackleg, the other six clostridial diseases that cause sudden death are black neck, black liver, malignant edema, and B, C, D enterotoxemia. The proper vaccination program includes annual vaccination of the entire herd

(calves, cows, heifers, bulls), not just calves. Grown cattle die from four of the seven different blackleg-type bacteria. Cows should be vaccinated during last 3 months of pregnancy or twice a year.

“Some of my calves are rapidly breathing, weak, feverish, scouring and dying.”

Since a number of infectious causes are possible, professional assistance is necessary to submit fresh feces from live calves for laboratory testing and necropsy one of the dead calves for physical and laboratory examinations to make a specific diagnosis.

Scours (Enteritis-Colitis Septicemia)

During the time of the year when one is calving cows and heifers, moving and mixing these cows and heifers, and bringing in bulls to them, the nursing calves are at high risk to fatal diseases beginning the day they are born. At the same time the baby calves can have low immunity and be highly susceptible to these diseases. Sources of these deadly germs in the pasture are contaminated ground and fecal shedding from the cows, heifers and bulls. When a pasture trap is used year after year for close observation of calving cows and heifers, the ground becomes heavily contaminated with germs from manure that kill baby calves from scours by dehydration and septicemia by systemic infections. This contamination is long standing during cool, wet weather by a build up of manure from the calving cows and heifers and scouring calves. Scours are caused by bacteria, viruses, and protozoa in the intestines. The viruses are rotavirus and coronavirus. The bacteria are *E. coli* and *C. perfringens* B, C, D. The protozoa are cryptosporidia and coccidia. Scours and dehydration worsen when affected calves nurse natural or artificial milk and receive oral antibiotics. To reduce the calf mortality related to scours and septicemia in a cow herd calving over a period of several months, more than one pasture trap will be needed to provide clean maternity areas. Also, an annual vaccination program needs to be established to provide immunity in the cow's colostrum for the new born calf. For the protective immunity to be in colostrum, against the fatal baby calf diseases, the pregnant cows and heifers need to be vaccinated late in pregnancy. Vaccines containing *E. coli*, rotavirus, coronavirus and *C. perfringens* B, C, D control calf scours. Therefore preventive measures are to reduce the level of exposures to infectious organisms during calving and breeding seasons, increase the level of immunity in colostrum and have all calves nurse first day of birth.

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