Vet Call

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Seminal vesiculitis: a deceptive foe

A common problem diagnosed during a breeding soundness examination of bulls is seminal vesiculitis, or inflammation of the vesicular glands.

The diagnosis

The vesicular glands are a pair of lobular structures similar to two clusters of grapes that lay on the floor of the pelvic cavity. Vesicular glands, along with the prostate and bulbourethral glands, secrete fluid that acts to transport sperm during ejaculation.

Usually there are no external signs of vesiculitis. Occasionally, bulls will show signs of pain, including an arched back, reduced appetite, or hesitation in mounting and thrusting. Seminal vesiculitis is usually discovered when the veterinarian is doing a rectal palpation during a breeding soundness examination or when white blood cells are found in the semen. Bulls with a sudden and severe onset of vesiculitis may display pain when they are palpated rectally, and the affected glands are usually enlarged and smooth rather than lobulated. Long-term disease of the vesicular glands usually results in enlarged, smooth glands, but pain is absent.

The diagnosis of seminal vesiculitis is fairly common, but often frustrating for both producers and veterinarians.

The semen of bulls with vesiculitis may have a brownish discoloration or may be blood-tinged. When semen from bulls with vesiculitis is examined under a microscope, the veterinarian will usually find white blood cells mixed with the sperm. Semen quality will vary among affected bulls, and although lowered fertility can be associated with seminal vesiculitis, many affected bulls are successful breeders. Researchers have reported that in bulls with seminal vesiculitis, 40.5% had satisfactory-quality semen, and 50% had semen of questionable quality, while unaffected bulls averaged 83.7% satisfactory and 11.7% questionable.

Often, bulls with seminal vesiculitis have disease in other parts of the reproductive tract. If sperm cells appear abnormal when examined under a microscope (in addition to white blood cells being in the sample), the testicles or epididymis are involved.

Seminal vesiculitis is primarily found in two different age populations — young bulls near puberty and older bulls. Many young bulls with vesiculitis will recover with or without treatment after several months. Older bulls, which are more commonly afflicted with chronic seminal vesiculitis, rarely recover.

Unknown origin

Management systems appear to have a significant effect on the risk of this disease process. Young bulls housed in group confinement and fed high-energy diets have a higher incidence of seminal vesiculitis compared to animals reared in a range environment. The cause is not well-defined, as both bacteria and viruses have been blamed. In many cases, no germ is found. Brucellosis (Bang's disease) is the most common cause of seminal vesiculitis in countries where that disease is still prevalent. The most common organism isolated from cases in the United States is *A. pyogenes.*

There are a number of theories as to how this disease process is started:

1) Infections that spread either up the urethra or down from the testicles or epididymis are possible, but are not likely to be common causes of vesiculitis.

2) Spread of infectious agents from other sites of infection (such as pneumonia or rumenitis) is also possible, but researchers have not been able to cause vesiculitis by inducing these diseases. Circumstantial evidence supports the theory that *A. pyogenes* travels from liver abscesses to the vesicular glands in bulls being fed feedlot-type rations. The organism is an important part of the acidosis/rumenitis/liver abscess complex of feedlot animals.

3) Improperly formed vesicular glands may have a role, since researchers found defects in 40% of the bulls with seminal vesiculitis in one study. These improperly formed glands may increase the likelihood of disease due to abnormal excretion of fluid and sperm.

4) The function of the ampulla, the urethral ducts and the vesicular gland (other accessory sex glands) could be less than optimal for both young and older bulls, resulting in reflux of semen or urine into the vesicular glands. Semen or urine could cause chemical irritation and inflammation. This theory might explain the high frequency of cases where no bacteria are found in the semen of affected animals.

Treatment options

Treatment of seminal vesiculitis with antibiotics or surgery is only somewhat rewarding. Spontaneous recovery in young bulls commonly occurs. However, at the time of diagnosis, determining which bulls will spontaneously recover is not possible.

If the value of the bull encourages the producer to attempt treatment, an uncontaminated sample of fluid from the vesicular glands should be obtained by sterilely passing a small plastic tube up the penis. The fluid should be cultured. If no bacteria are found, antibiotic therapy is not indicated. If bacteria are found, they should be identified, and antibiotic sensitivity should be determined.

Bacterial seminal vesiculitis requires prolonged treatment (more than 30 days) with antibiotics that reach effective concentrations in the accessory sex glands. It must be remembered that extra-label usage of any compound must be addressed, and a prolonged withdrawal time must be observed if the animal is to be harvested. Prognosis in cases treated with antibiotics is still guarded.

Surgical removal of the affected vesicular glands is available, but overall success is poor. Upon returning to service after surgery, bulls can exhibit a decrease in semen motility, volume and sperm output. Older bulls that have long-term seminal vesiculitis with adhesions of the gland to the pelvic floor or wall are poor candidates for surgery.

The diagnosis of seminal vesiculitis is fairly common, but often frustrating for both producers and veterinarians. When the diagnosis is made, the producer and veterinarian need to sit down and discuss the options that are available and the expected time to a best-case outcome so enough sound bulls are available for the breeding season.

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