

Repro Tracks

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Seminal vesiculitis: cause, treatment, prognosis

Seminal vesiculitis is an infection of a bull's reproductive tract that can reduce semen quality and impair fertility. Young bulls fed high-concentrate rations are more susceptible to seminal vesiculitis, but treatment with antibiotics may result in a cure that allows infected bulls to pass a breeding soundness exam and be used successfully for breeding.

Question No. 1

We placed 40 yearling bulls on a feed test. The vet performed a breeding soundness exam (sometimes referred to as a BSE) on them two weeks after the end of the test. Eighteen bulls failed the exam due to "seminal vesiculitis." Can you explain what it is?

Response: Seminal vesiculitis is an infection of one of the accessory sex glands, the seminal vesicles. There are three accessory sex glands in a bull, the seminal vesicles, prostate and Cowper's (bulbourethral) gland (see Fig. 1). The accessory glands secrete fluid that mixes with sperm from the testes and makes up the ejaculate of a bull.

The seminal vesicles are the most active accessory glands in a bull. Therefore, most of the semen a bull releases each time he ejaculates comes from the seminal vesicles.

Seminal vesiculitis is usually a bacterial infection. The bull's response to infection of the seminal vesicles, like any infection, is to infiltrate the infected area with white blood cells to fight the infection. As a result, the seminal vesicles can become inflamed, and the fluid secreted from the seminal vesicles may contain white blood cells from the site of the infection.

Feeding & Feedstuffs

Question No. 2

What is the cause of seminal vesiculitis, and why was the

incidence among my yearling bulls on test so high?

Seminal vesiculitis is most often detected during a breeding soundness exam when the veterinarian palpates the seminal vesicles and finds them swollen and painful to touch or by detecting white blood cells in the semen.

incidence among my yearling bulls on test so high?

Response: Any bull can contract seminal vesiculitis. The common range in incidence varies from one in a 100 up to one in 10. However, among groups of performance-tested yearling bulls housed together, a rate as high as 49% has been reported.

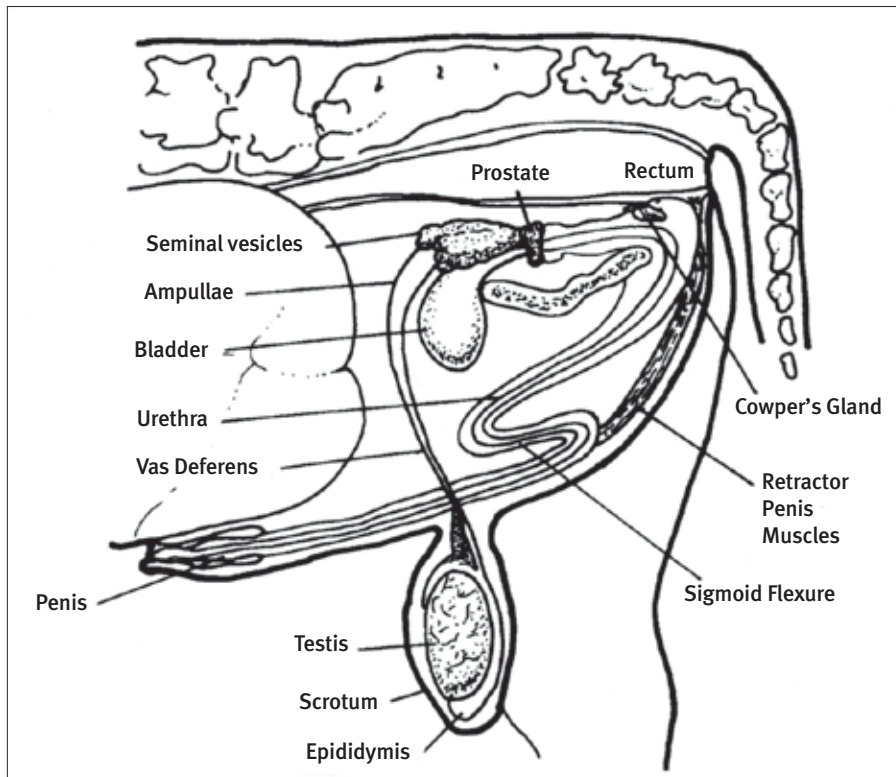
The reason for the higher risk of seminal vesiculitis among bulls in a feed test may be related to the most likely method for young bulls to obtain the infection. While it is possible for bulls to become infected by bacteria passing from the environment up the reproductive tract to the seminal vesicles to cause the infection, that route of infection has never been replicated experimentally.

Therefore, it is more commonly believed that seminal vesiculitis occurs as a secondary infection to bacteria introduced into the bull's system by some route other than the reproductive tract. In young bulls on high-concentrate rations, the infections are thought to be caused by rumenal acidosis and rumenitis (infection of the rumen wall).

Acidosis of the rumen has also been associated with liver abscesses in feedlot cattle on high-concentrate diets. The pathogenesis of seminal vesiculitis and liver abscesses may be similar.

If seminal vesiculitis is a problem year-after-year in your herd, perhaps increasing the roughage level of the test diet and/or shortening the test period may be helpful in reducing the likelihood of rumen acidosis and decreasing the incidence of seminal vesiculitis.

Fig. 1: Reproductive tract of a bull



Source: Adapted from Salisbury, VanDemark and Lodge; *Physiology of Reproduction and Artificial Insemination of Cattle*.

Question No. 3

Will a bull with seminal vesiculitis be infertile?

Response: Seminal vesiculitis is commonly associated with poor semen quality. The reason for a higher incidence of abnormal or non-motile sperm cells ejaculated from bulls diagnosed with seminal vesiculitis may be due to the infection extending into parts of the reproductive tract other than the seminal vesicles.

If the testes (sperm production) or epididymis (sperm maturation and storage) are also infected, semen quality is more likely to be impaired than if the infection is confined to the seminal vesicles. In 1964, researchers at Colorado State University reported that only 40.5% of bulls with seminal vesiculitis had satisfactory quality semen while 83.7% of normal, uninfected bulls had satisfactory semen quality.

Although in some cases bulls diagnosed with seminal vesiculitis had good conception rates when mated by natural service or artificial insemination (AI), lower fertility has been associated with seminal vesiculitis.

The purpose of a breeding soundness exam is to identify and eliminate bulls that have a risk of lower fertility. While bulls diagnosed with seminal vesiculitis are unlikely to be completely infertile, they

certainly are more likely to have lower fertility than normal, uninfected bulls. Therefore, bulls with seminal vesiculitis should not pass a breeding soundness exam.

Question No. 4:

Is there a treatment that will cure seminal vesiculitis and allow me to sell the infected bulls that failed the BSE?

Response: Treatment with antibiotics is the logical and common therapy for bulls diagnosed with seminal vesiculitis. Ideally, the antibiotic sensitivity of bacteria isolated from the seminal vesicles of an infected bull should be used to determine the best antibiotic therapy. However, isolation of the causative bacteria is often difficult and impractical. Hence, the most common treatment is with a broad-spectrum antibiotic or a fat-soluble antibiotic that is effective against *A. pyogenes*, the most common bacteria associated with seminal vesiculitis.

In a recent trial, 65 bulls diagnosed with chronic seminal vesiculitis were treated once with Draxxin® or treated with Micotil® twice at a 72-hour interval. The infected bulls were re-evaluated 4 weeks after treatment. Some bulls treated with each antibiotic displayed clinical recovery from vesiculitis. However, the cure rate was significantly higher in the

group of bulls treated with Draxxin® (22/25, or 88%) than those treated with Micotil® (11/23, or 48%).

The effectiveness of antibiotic treatment of bulls with seminal vesiculitis is questionable. Spontaneous recovery, without treatment, is common among young bulls. Therefore, the decision to treat young bulls that may recover spontaneously is a difficult one and may be dependent on the cost and labor required for treatment. Consultation with your veterinarian is recommended to determine the best antibiotic strategy.



Editor's Note: Bill Beal is a beef cattle reproductive physiologist and professor emeritus at Virginia Tech. He conducts research involving estrus synchronization, artificial insemination, embryo transfer and the use of ultrasound technology. This column is designed to provide answers to questions about reproductive management commonly posed by commercial and purebred breeders. If you have questions or comments related to the reproductive management of cows or bulls, e-mail them to Dr. Beal at wbeal@vt.edu.