



# EQUINE REPRODUCTION SVC

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Foal Disorders  
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## Stallion Reproductive Disorders: Focus on Hemospermia

It might seem like breeding stallions live the life of Riley, but the truth of the matter is that they work hard. While many stallions perform their work with ease, others encounter a few bumps along the way in the form of overuse, decreased libido, and even injury. Reproductive tract injuries can result in the presence of blood in the ejaculate, a condition called hemospermia.

During his interactive presentation at the 2015 American Association of Equine Practitioners Convention, held Dec. 5-9 in Las Vegas, Dickson D. Varner, DVM, MS, Dipl. ACT, of Texas A&M University's College of Veterinary Medicine and Biomedical Sciences asked audience members: How much blood is a problem, and how do we find out where it is coming from?

Conference attendees used their smartphones to select a multiple-choice answer to Varner's first question: How much blood is a problem? He shared a photo of semen samples containing various levels of blood, ranging from slightly pink-tinged to bright red, on the presentation screen. Veterinarians selected the sample they thought would have compromised sperm quality.

The attendees—a large majority of which identified themselves as experienced Quarter Horse practitioners in a survey at the start the session—were divided in their answers. Approximately 20% thought only a minute amount of blood (less than 1% of the sample) would pose an issue, whereas the vast majority said either the sample containing 1% blood or 50% blood would negatively impact fertility.

"There is actually very little data regarding the effect of hemospermia on fertility," said Varner.

He described a 2015 study conducted by Carly Turner, DVM, a resident in equine theriogenology at Texas A&M, in which she found that when mares were artificially inseminated with 250 million sperm, the pregnancy rate for "pure" semen was 75%. When there was 5% blood in the semen, the pregnancy rate remained 75%. That rate decreased, to 0%, however, when 50% of the sample was blood.

"These data suggest that problems start to occur when more than 5% of the sample is blood," Varner said but exactly what the "magic percent" is remains unknown. Further, a semen sample containing only 5% blood looks like frank blood. What "bloodies the waters" further, he said, is that the stallion's breed, whether he'll breed live cover or be collected for artificial insemination, and how the semen is processed following collection (cooling, freezing) might influence hemospermia.

Moving on, Varner reviewed possible sources of the blood. In cases of natural cover, a slight amount of blood in dismount samples could have originated from the mare or the stallion. In such cases, the veterinarian should examine both parties carefully.

If he or she identifies the stallion as the culprit, there could be multiple potential causes:

- Lacerations/abrasions on the penis exterior or urethral process;
- Urethral defects (rents);
- Infection or inflammation along the reproductive tract, including the prepuce (sheath), penis, urethra, accessory genital glands, epididymides, or testes;
- Tumors of the penis (most commonly squamous cell carcinoma);
- Papillomas (benign wartlike growths); and
- Lesions associated with the venereal disease equine coital exanthema (caused by equine herpesvirus-3).

"One of the most common causes of profound hemospermia is a urethral rent that communicates with the corpus spongiosum penis (a spongy tissue that surrounds the urethra and fills with blood during an erection)," said Varner.

Those rents (defects) in the urethra are usually only a problem during erection, when pressures in the corpus spongiosum penis increase. Such rents typically occur at the level of the pelvic ischium, where the urethra changes direction as it courses from the urinary bladder in the abdomen to the tip of the penis.

To diagnose urethral rents, Varner said, "Use an open-ended artificial vagina. Stallions with urethral rents have bleeding at the end of the ejaculate, and the bleeding can be seen coming directly from the urethra."

Veterinarians can reach a definitive diagnosis via endoscopy and can choose from one of several surgical procedures to treat it.

In conclusion, Varner emphasized two main facts about hemospermia:

- Bacterial urethritis (inflammation of the urethra) is massively overdiagnosed and is only a rare cause of hemospermia, unlike urethral rents, and sexual abstinence as the primary treatment for hemospermia is generally ineffective when the cause is a urethral rent. Instead, surgical repair of the rent results in more favorable results.