

## **ENDOSCOPIC EVALUATION OF THE UTERUS**

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The vast majority of reproductive abnormalities in horses can be detected using common procedures like manual palpation and ultrasonography, plus some additional techniques such as culture, cytology and biopsy. However, there are a few problems that need specialized procedures and equipment for an accurate diagnosis. One of the techniques is called endoscopy, which refers to direct visualization of the interior of a hollow body cavity (such as the reproductive tract) using an endoscope. Endoscopes are commonly used in equine veterinary medicine to observe the upper respiratory tract of horses for conditions such as roaring, displaced soft palate, and guttural pouch infections. The same equipment can be used to look inside the reproductive tract of a mare or the penis of a stallion.

In the mare, an endoscope may be used to detect intrauterine adhesions, cysts, and foreign bodies, as well as inflammation, fibrosis and other abnormalities. In addition, an endoscope may be used to perform low-dose insemination. A small catheter filled with semen can be passed down a channel within the scope and the semen directly deposited onto the oviductal junction at the tip of the uterine horn adjacent to the ovary with the large preovulatory follicle.

Endoscopic examination of a mare is performed after wrapping the tail and a thorough washing of the perineum. The

business end of the sterilized scope is held in the gloved hand of the operator and slowly passed into the vagina. One can obtain a good view of the vaginal vault with an endoscope and observe problems such as vaginal varicose veins, cervical lacerations, and urine pooling. All of these can be seen through a simple vaginal speculum, however.

The scope is then passed through the cervix and into the uterine lumen. Air is pumped into the uterus to inflate the structure and allow for easy visualization of the interior. The cervix is held closed to keep the air inside the uterus. Each uterine horn is examined from the base to the tip. Common abnormalities observed are endometrial cysts and free fluid in the uterus, both of which can be seen during a traditional ultrasound exam. Occasionally significant problems are observed that cannot be detected by ultrasound or other standard procedures. Examples include adhesions or scar tissue bands that cross the uterine lumen or may completely occlude one uterine horn, fungal or bacterial plaques, and retained endometrial cups. Endometrial cups are normal structures of placental origin that form during early pregnancy and usually regress by 120 to 150 days of pregnancy. Occasionally endometrial cup tissue will be retained for months in a mare after foaling or abortion and are associated with abnormal estrous cycles and infertility.

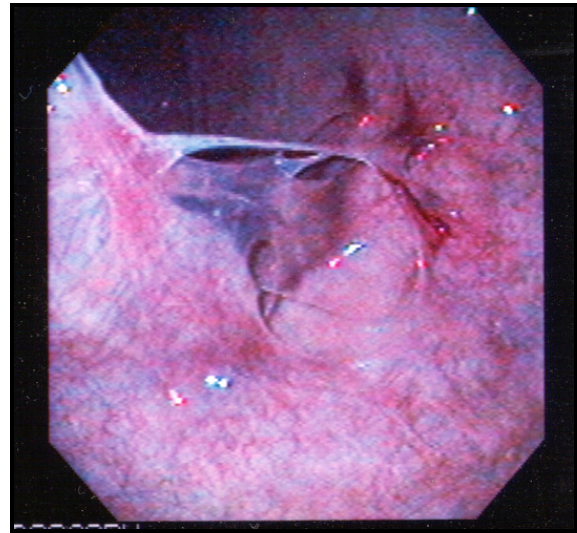
We performed endoscopy on one mare with a history of chronic infertility and discovered that the tip of one uterine horn was missing. The uterus was surgically repaired in the fall and the mare conceived on the first breeding the following spring. We have also observed foreign bodies such as the tip of a culture instrument and glass marbles in mares. The marbles were presumably placed in the uterus in an attempt to suppress estrus.

Endoscopic evaluation of a stallion is most commonly performed to determine the source of bleeding in a stallion with blood in his semen. Stallions that bleed during live cover or during semen collection may have a lesion on the outside of their penis on either the glans penis or on the urethral process, or may have a problem internally with either a tear in their urethra or an infection of a seminal vesicle. It is usually fairly easy to diagnose either an external penile lesion or seminal vesiculitis. Endoscopy is often required to confirm the presence of a urethral tear. A narrow endoscope can be passed up the urethra of a sedated stallion all the way to the urinary bladder. Urethral tears usually occur at a predictable site. Confirming the problem can allow a veterinarian to make sound treatment and management recommendations.

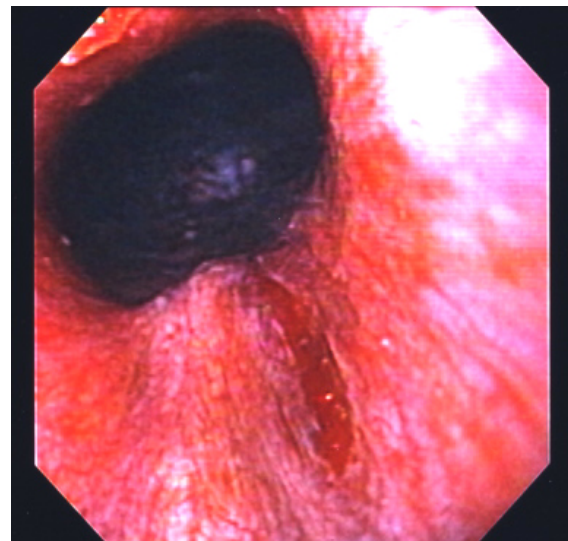
The endoscopic photographs below are of uterine adhesions in a middle aged broodmare (Figure 1) and a urethral tear in a young stallion (Figure 2).

The major obstacle preventing widespread use of this technique is the high initial cost of the equipment. Consequently, endoscopy is used primarily in specialty practices and referral hospitals. Consult with your equine veterinarian if you have questions about a mare or stallion with a potential

reproductive problem that may require endoscopy.



**Figure 1. Uterine adhesions**



**Figure 2. Urethral tear**