



## **CRYPTORCHIDISM**

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A horse is considered to be a cryptorchid (also known as a rig or ridgling) if one or both testes are not fully descended into the scrotum. Cryptorchid testes may be located under the skin outside of the inguinal canal, within the inguinal canal or inside of the abdominal cavity. A horse with testes located in the inguinal area outside of the body cavity is commonly known as a 'high flanker'.

Cryptorchidism in the horse can occur with either the left or right testis or with both testes. Failure of one or both testes to descend into the scrotum may be due to genetic predisposition, insufficient androgen (i.e. testosterone) stimulation, and other factors. A genetic or heritable basis for the cryptorchid trait has been identified in the pedigrees of certain stallions. However, in other cryptorchid colts or stallions a genetic basis is much less likely if no other closely related horses such as the sire, grandsire, maternal sire, siblings, etc are cryptorchid.

Testes begin to form in the male fetus in the abdomen near the kidneys. The testes begin to pass through the inguinal canal between 9 and 10 months of age and are usually fully descended into the scrotum between 30 days before and 10 days after birth in the normal colt. Although documentation is limited, inguinal retained testes have been reported

to enter the scrotum in horses up to 2 to 3 years of age.

Cryptorchid testes are incapable of producing sperm due to the elevated temperature of the retained testes. Consequently, a stallion would be sterile if both testes are cryptorchid. Stallions with one retained testis and one scrotal testis are usually fertile since an adequate number of motile sperm are produced by the descended testis to get mares pregnant. Libido and aggressive male behavior is present in cryptorchid stallions since testosterone is still produced by the retained testes. As shown in the photo below taken after surgical removal of both testes, a cryptorchid testis (right) is usually significantly smaller than the normal scrotal testis.

Diagnosis of cryptorchidism is not difficult if the horse has not changed owners and if adequate medical records have been maintained. If a problem occurs, it is usually when a horse purchased at auction as a gelding begins to show stallion-like behavior when exposed to mares at his new home. Veterinary examination may be required to determine if the horse is a true gelding or a bilateral cryptorchid. The horse may be sedated to allow for a more thorough examination of the external inguinal region. Often inguinal retained testes of 'high

flankers' are easier to detect when the horse is more relaxed after sedation. A rectal palpation may be performed on the horse in order to detect the presence of abdominally retained testes. Ultrasound examination of the external inguinal region and the abdominal cavity may also be useful in determine the location of retained testes. Hormonal testing may be suggested if testes cannot be located by palpation or ultrasound examination in a gelding exhibiting stallion-like behavior. Analysis of testosterone levels in a single blood sample is often sufficient to document the presence or absence of testicular tissue. Geldings have very low blood testosterone levels, whereas cryptorchid stallions have moderately elevated levels and intact stallions have very high testosterone levels. If testosterone level in a single sample is not diagnostic, an hCG-stimulation test may be performed. For this test, a blood sample is collected prior to and 1 to 2 hours after administration of the hormone human chorionic gonadotropin or hCG. If one or more testes are present, the hCG will cause an increase in testosterone levels in the second sample as compared to the first sample. Estrogen levels may also be measured to help differentiate between cryptorchid stallions and geldings three or more years of age. Estrogen testing for cryptorchidism is not considered to be of diagnostic value in young horses.

Medical treatment to stimulate descent of retained testes in horses is controversial in regards to both effectiveness and ethical considerations. Although sporadic anecdotal reports suggest that hormone administration may have aided in testicular descent in some horses, the majority opinion is that medical treatment is not effective. In addition, many owners, breeders and veterinarians are of the strong opinion that cryptorchidism may be

inherited and that medical or surgical procedures intended to induce or aid testicular descent should not be performed.

It is generally recommended that cryptorchid colts and stallions be castrated and not used for breeding (remember that unilateral cryptorchid stallions are fertile and that only bilaterally cryptorchid stallions are sterile). Castration should eliminate undesired aggressive or stallion-like behaviors as well as prevent potential adverse medical conditions associated with the presence of cryptorchid testes, such as testicular tumors.

