

# Standing Male Equine Urogenital Surgery

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## KEYWORDS

- Standing • Male • Equine • Urogenital surgery • Cryptorchid • Inguinal hernioplasty • Phallectomy

## KEY POINTS

- Standing laparoscopic cryptorchidectomy provides exceptional visualization of inguinal anatomy of horses and allows for consistent identification of retained testicles.
- Laparoscopic inguinal herniorrhaphy or hernioplasty should be considered after correction of acquired inguinal hernias to prevent recurrence in stallions that are to be breeding animals.
- Standing castration is safe to perform and avoids the time, cost, and complications associated with general anesthesia.
- The standing modified Vinsot partial phallectomy technique<sup>54</sup> is a safe and simple surgery that is particularly suited for debilitated or very large horses.

Given that male urogenital surgeries are among the most common soft tissue surgeries performed in horses, it is beneficial for the equine practitioner to be familiar with a variety of standing techniques. The advantages of performing standing male urogenital surgeries are often numerous when compared with performing the same surgery in the anesthetized animal. Some traditional standing male urogenital surgeries, such as castrations, may be faster to perform and can be performed with less expense, because general anesthesia is avoided. Laparoscopic standing male urogenital surgeries may allow for improved visualization of the surgical field, decreased hemorrhage, and decreased morbidity and convalescence. Limitations of standing procedures may include increased danger to the surgeon because of fractious behavior of the patient, and increased expense and training associated with instrumentation for specialized procedures such as laparoscopy.

## STANDING LAPAROSCOPIC CRYPTORCHIDECTOMY

Laparoscopic cryptorchidectomy has become one of the most common laparoscopic procedures performed in equine hospitals, because of the high prevalence

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**Key points**

- Standing laparoscopic cryptorchidectomy provides exceptional visualization of inguinal anatomy of horses and allows for consistent identification of retained testicles.
- Transabdominal ultrasonography and hormonal assays help identify cryptorchid horses if the history of castration is uncertain.
- Initial trocar cannula placement with or without prior insufflation of the abdomen is one of the most important steps of the procedure.
- Suture loop placement, extracorporeal emasculaton, and electrosurgical methods are all safe and effective techniques that are used to remove retained testicles.

of cryptorchidism in horses.<sup>1</sup> Cryptorchidism is the failure of 1 or both testicles to normally descend into the scrotum, resulting in abdominal or inguinal retention of the testicle. Surgical removal of cryptorchid testicles can be performed using a variety of traditional techniques, including inguinal, parainguinal, and flank laparotomy. These traditional techniques can often be performed more quickly than the standing laparoscopic technique, but the surgeon's inability to visualize the abdominal testicle using these techniques can lead to frustration and prolonged surgery time on occasion. The main surgical advantage of performing standing laparoscopic cryptorchidectomies compared with traditional techniques is superior observation of the surgical field, leading to repeatable identification of the testicle. Avoiding the complications associated with general anesthesia and the surgeon's ability to make smaller incisions while performing the laparoscopic technique may also decrease the likelihood of postoperative morbidity compared with traditional techniques.

**Diagnosis**

Cryptorchid testicles are capable of producing testosterone, so these horses continue to have undesirable stallionlike behavior, even without a normal scrotal testicle. Identification of cryptorchid stallions can be challenging, because many of these horses have inaccurate histories regarding previous castration.

**Diagnostic techniques**

- Inguinal or transrectal palpation: easy to perform but may be inaccurate or dangerous in young and fractious horses.
- Transabdominal ultrasonography: can be accurate and easy to perform<sup>2</sup> but, in our experience, can be time consuming and less reliable than previously described. If you find a testicle you can be confident one is there, if you do not find a testicle, it does not rule out the presence of a testicle.
- Hormonal assays: accurate and easy to perform but can be expensive.
  - Basal testosterone: geldings are generally less than 40 pg/mL. Cryptorchid horses are generally greater than 100 pg/mL.<sup>3</sup> Wide variations in basal testosterone levels in both geldings and stallions may lead to inaccurate interpretation of the results.<sup>4</sup>
  - Human chorionic gonadotropin (hCG) stimulation test: an hCG stimulation test improves the accuracy of using testosterone to identify retained testicular tissue to about 95%.<sup>5</sup> This test helps identify the false-negative horses that the basal testosterone test alone misses. A baseline serum sample is obtained, and then the horse is given 6000 to 12,000 IU of hCG intravenously. A second serum sample is taken 30 to 120 minutes later. Horses are considered geldings if the testosterone levels are less than 40 pg/mL and cryptorchids if the levels are greater than

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