Ejaculatory failure or dysfunction can be a frustrating problem for both owner and veterinarian. The complaint of ejaculatory failure can have a wide range of causes with owners often using this term to describe the immediate problem of not obtaining semen. Causes of ejaculatory dysfunction include musculoskeletal disease, blocked ampullae, Müllerian duct remnant cysts, and neurologic disease.

A detailed signalment and history often provides clues with regards to the underlying disease. Important signalment information includes age, breed and the stallion's current or previous profession. With regards to history, owners may provide relatively detailed reproductive history yet require prompting to provide information regarding medical diseases, musculoskeletal injuries or required maintenance and supplements.

Initial examination should include a complete physical examination, evaluation for lameness, and a neurological examination. The addition of an acupuncture examination can provide helpful ancillary information. Observation of the stallion’s behavior in the stall and in the breeding shed in response to mare stimulation can provide valuable insight to libido, and the stallion’s demeanor towards humans and horses. With regards to mare stimulation, stallions may demonstrate mare preference. For example, a mare in natural estrus may be more stimulating than an ovariectomized “jump” mare. Examination also includes confirmation of normal genital anatomy, intact skin and mucosa without lesions, absence of penile deviations and the ability to achieve and maintain an erect state.

Closely observing mounting behavior and comfort while mounted and thrusting is of utmost importance. Experimenting with variable phantom heights and angles as well as mounting a mare can provide valuable insight to the stallion’s comfort. Other variables to be conscious of include artificial vagina length, temperature, tension and ancillary stimulation such as rhythmic pressure to the base of the penis and application of hot towels to the base of the penis. In stallions, seven to nine pelvic thrusts typically precede emission. Emission is the release of sperm and accessory sex gland fluids into the pelvic urethra while ejaculation is the expulsion of semen from the urethra. Ejaculation typically occurs as 5 to 10 jets of semen and is often associated with tail movement (flagging) and anal sphincter contraction.

Musculoskeletal deficits associated with mounting or thrusting are a common finding with ejaculatory reluctance or failure. Signs suggesting musculoskeletal discomfort include failure to step forward with the hind limbs to
fully couple while mounted, failure to use both hind limbs while mounted, weak or irregular thrusting, or sudden dismounting often followed by more cautious remounting. Stallions with ampullary blockage typically demonstrate relatively normal mounting, thrusting, and may appear to ejaculate. Urethral pulses may feel weak. Neurologic causes of ejaculatory failure are important because of their potential danger to all parties involved. Occasionally, the stallion suddenly collapses or falls. Other signs include difficulty achieving insertion, interference between the stallion’s own hind feet or stepping on the mare’s hind feet, and difficulty compensating for lateral movement of the mare. Stallions with colliculus seminalis cysts may demonstrate increased number of pelvic thrusts without behavioral evidence of ejaculation. Novice stallions, or stallions with little to no previous breeding experience, may demonstrate many behaviors similar to those seen with dysfunction. These behaviors typically subside with patience and breeding experience.

In evaluation of a stallion, behavioral causes of ejaculatory dysfunction should be considered. Sexual behavioral dysfunction, for instance, is associated with behavioral problems such as low arousal, apparent shyness, preference for certain mares or handling conditions, aggressiveness, or interruption of the copulatory sequence. The cause may be associated with a negative experience such as injury during breeding or inappropriate discipline.

Feeling for the urethral pulses ventrally at the base of the penis while the stallion is attempting to breed can provide valuable clinical information. If urethral pulses are consistent with ejaculation, conditions such as ampullary blockage, retrograde ejaculation into the bladder, and azospermia must be considered.

During semen collection attempts, it is common to achieve variable amounts of seminal fluid. When the fluid is devoid of spermatozoa, it becomes necessary to differentiate between ejaculatory failure and testicular origin azospermia or oligospermia. Turner (2003) presented the following parameters for measuring alkaline phosphatase in the ‘ejaculate’ as a marker for testicular or epididymis derived fluid:

- Alkaline phosphatase concentration in pre-ejaculatory fluid: 10-90 IU/L
- Alkaline phosphatase concentration in ejaculate: 1640-48,700 IU/L
- Total alkaline phosphatase in ejaculate: 293-3409 U

Other parameters to evaluate include color, volume, pH, sperm concentration (using a hemacytometer or nucleocounter versus a densimeter if the concentration appears low), cytology, motility and sperm morphology. Morphologic evaluation of sperm should be performed on serial ejaculates obtained from a stallion presenting for ejaculatory dysfunction.

Evaluation of the scrotum, testes and epididymides is performed with manual palpation and ultrasonography. Aspects of this examination to note include
testicular tissue parenchyma consistency (both physical palpation and echotexture), testicular volume, epididymal anatomy and tubular distension, presence of cysts, presence of hyperechoic concretions, spermatic cord anatomy and blood flow, and any peritesticular fluid (e.g. hydrocele). Testicular abnormalities may be found in stallions with azo- or oligospermia while epididymal cysts or concretions may be found in a stallion with relatively lower alkaline phosphatase in the emitted fluid.

Transrectal ultrasonography of the internal genitalia including the accessory sex glands, urethra, and caudal aorta can also provide valuable insight as to causes of ejaculatory dysfunction. The ampullae are typically easy to identify with palpation and their location, diameter, luminal diameter, consistency and sensitivity to palpation should be noted. The seminal vesicles may be fluid distended and thus relatively easier to identify if the stallion receives mare stimulation prior to the examination or if there is a distal obstruction to ejaculation. Small cysts of the uterus masculinis (embryological remnant of the Müllerian duct) may be present in many stallions. Larger, caudal cysts of the uterus masculinus have been associated with ejaculatory dysfunction. Aortoiliac thrombosis can present as hind limb lameness with ejaculatory dysfunction and can be detected with ultrasonography of the arterial branches.

Optimizing the breeding environment is a critical component of managing a stallion with ejaculatory dysfunction. These include enhancing sexual arousal, making accommodations for or establishing a treatment program for underlying diseases, and increasing positive stimuli. In some cases, the stallion’s book size and breeding frequency might need to be adjusted.

Enhancing sexual arousal can include prolonged teasing, providing mares that are in natural estrus, minimizing environmental distractions, establishing a routine, and voicing positive reinforcement with an absence of negative reinforcement (such as human impatience).

In a study designed to assess the behavioral effects of diazepam on aversively suppressed sexual behavior in pony stallions, diazepam (0.05 mg/kg slow IV) was found to attenuate the suppressive effects of aversive conditioning on sexual behavior. Diazepam can be a useful tool in clinical practice with careful monitoring for ataxia from sedation.

GnRH (gonadotrophin releasing hormone) can increase sexual arousal and is associated with a rise in resting testosterone levels. Many protocols have been used; an example is administration of 50 micrograms of GnRH (Cystorelin®) SQ two and one hour(s) before breeding. Testosterone and other androgens have also been used to increase sexual arousal. Monitoring of systemic testosterone levels periodically is important to mitigate negative feedback of exogenous androgen therapy.
Accommodating for musculoskeletal deficits might include altered footing, a mount mare of a different height, adjusting the height or angle of the phantom (often increasing phantom height is successful in stallions with back and pelvic pain), placing the mare downhill from the stallion, collecting semen from the stallion while all four of the stallion’s feet are on the ground, and providing lateral stability. Targeted treatment for underlying musculoskeletal treatment in addition to systemic non-steroidal anti-inflammatory treatment can yield marked improvement.

In some instances such as with sperm accumulation, increased breeding frequency becomes beneficial. This may become challenging in stallions with both sperm accumulation and significant musculoskeletal disease. If blocked ampullae are suspected, transrectal massage of the ampullae prior to ejaculation can be useful. Oxytocin (10-30 IU IV) can be administered prior to semen collection attempts.

Pharmacologically induced ex-copula ejaculation can be used 1) to obtain a semen sample for evaluation or breeding when in-copula methods fail, and 2) to demonstrate that the stallion is physiologically and anatomically able to ejaculate. Various protocols have been published using agents such as imipramine, xylazine, detomidine and prostaglandin F2alpha. McDonnell (2001) published the use of imipramine (3 mg/kg PO) followed 2 hours later by xylazine (0.66 mg/kg IV). In this study, ejaculates were obtained from 68% of attempts, and time to ejaculation was within 14 minutes. In clinical practice, time to ejaculation can be considerably longer, potentially due to pharmacokinetics of drug absorption and individual variations. Semen produced from this method of ex-copula ejaculation tends to be of low volume and high sperm concentration.

Recommended Reading


