The Case Against the Use of Acepromazine in Male Horses

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1. Introduction
Acepromazine is known to cause penile prolapse in male horses, which is why it is frequently administered to facilitate cleaning the sheath. A study of acepromazine in geldings showed that the degree and duration of penile protrusion is dose dependent, with 0.01 mg/kg, IV (~5 mg in a 500-kg horse) causing 40% protrusion of the penis for <30 min, 0.04 mg/kg, IV (~20 mg in a 500-kg horse) being associated with 80% protrusion of the penis for ~1 h, and 0.1 mg/kg, IV (~50 mg for a 500-kg horse) being associated with 90% protrusion for nearly 4 h. Other phenothiazines such as chlorpromazine and propranolol have also been reported to cause penile paralysis. Unfortunately, in rare cases, penile prolapse can result in permanent paraphimosis, particularly if the penis is allowed to become edematous or congested or develops a hematoma. This condition can lead to serious and permanent consequences, most particularly in breeding stallions. It has been speculated that the presence of circulating testosterone at the time of acepromazine administration might significantly increase the risk of priapism. Even stallions that have been previously tranquilized with acepromazine without problem may develop either flaccid prolapse of the penis or priapism on a subsequent administration of acepromazine. The exact mechanism for this complication is unknown, although it has been speculated that α-adrenergic nerve fibers supply motor innervation to the retractor penis muscle, and therefore, the α-adrenergic blockade induced by acepromazine blocks this motor function. Treatment is supportive: protecting the penis from injury and preventing or minimizing swelling. There is one report of successful treatment by administration of the anticholinergic agent benztropine to a gelding with priapism in which only the corpus cavernosum penis, not the glans penis, was engorged. In severe cases where the penis remains prolapsed, amputation may be required.

In past years, the author administered relatively low doses of acepromazine (0.03 mg/kg, IV) as a pre-anesthetic to numerous male horses (colts, stallions, and geldings) without complication. However, two intact males developed paraphimosis. One of the cases resolved with symptomatic treatment, but the other, a cryptorchid presented for castration, did not respond to medical therapy and eventually required a partial penile amputation. This unfortunate outcome suggested use of acepromazine as a pre-anesthetic is contraindicated.
in intact colts and stallions but perhaps not contra-indicated in geldings.

2. Case Report

In September 2008, a 12-yr-old, 500-kg Quarter horse gelding was referred to Colorado State University’s Veterinary Teaching Hospital for penile paralysis. The history stated that, 2 wk earlier, the referring veterinarian had administered acepromazine (15 mg or 0.03 mg/kg, IV) to float the teeth. The day after sedation, the horse’s penis was dropped (it was unclear whether it had been prolapsed continuously since the procedure or not). Two days after sedation, the veterinarian was called back, and treated the horse for paraphimosis with dimethylsulfoxide (DMSO), flunixin meglumine, isoxsuprine, and trimethoprim sulfadiazine. The corpus cavernosum was drained and flushed, and the penis was wrapped for 2 h/day. After 2 wk of treatment, the horse still could not retract his penis, although he was able to urinate. At that time he was referred to CSU, and the penis was amputated.

3. Conclusion

In the author’s personal experience, acepromazine can be a useful tranquilizer in certain horses and can be safely administered in very small doses (3 or 4 mg total) to females or castrated males near the end of inhalation anesthesia, before they are moved to the recovery stall. However, after observing three cases of paraphimosis or persistent penile prolapse after acepromazine administration (~0.03 mg/kg) in both stallions and geldings, this author would not recommend acepromazine (or other phenothiazines) in intact male horses. Acepromazine may be administered to geldings before anesthesia recovery, but never exceeding 4 mg (~0.008 mg/kg), because this dose seems to be too low to cause penile protrusion. Although the incidence of paraphimosis after acepromazine has been estimated to be <1 in 10,000, the consequences, particularly for a breeding stallion, can be devastating. There are many other alternative tranquilizers and sedatives, such as α-2 agonists, with or without butorphanol, that can be used to sedate male horses.

References