Monochorionic twin pregnancy reduction via trans-abdominal ultrasound-guided cardiac puncture in a mare
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Twin pregnancy is a pathological and undesirable condition in the equine species, occurring in 1 to 2% of the population, and which accounts for 6 to 30% of abortions. If not addressed, it may result in poor neonatal viability, dystocia, and reduced fertility of foaling mares. Equine twin pregnancies predominantly originate from the fertilization of two oocytes originating from two follicles (dizygotic), but monozygotic pregnancy may result from cleavage of an embryo resulting from a single ovulation. This is reported as a rare condition in the horse. In humans an increased incidence of monozygotic twins has been attributed to assisted reproduction techniques.

A single late morula grade one embryo was transferred to a 4 year old Quarter Horse cross, recipient mare. The mare was maintained on altrenogest (0.044mg/kg) once daily for 120 days beginning on the day of embryo transfer. A single embryonic vesicle was identified by transrectal ultrasound at 11, 14, 20, and 25 days of gestation. At 34 days of gestation, two distinctly separate embryos with detectable heartbeats were visualized within a single chorion (monozygotic). Ultrasound evaluation was subsequently performed once a week to determine the progression of both fetuses. Both fetuses had normal heart rates and increased in size at each examination, however one was approximately two times larger than the other. On day 126 of gestation successful transcutaneous ultrasound-guided reduction was performed by injecting potassium chloride into the heart of the smaller fetus. The mare was treated with sulfamethoxazole/trimethoprim, flunixin meglumine, and altrenogest. On subsequent repeated examinations through day 206, a single viable fetus with a normal heart rate and activity level was observed. Anatomical examination of the placenta and mummified fetus will be performed, and samples will be collected for DNA testing at the time of foaling.

Keywords: Twin pregnancy, monochorionic, transabdominal reduction.

References