

## **ADVANCED EQUINE THERIOGENOLOGY COURSE**

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### **TWIN MANAGEMENT IN THE EARLY PREGNANT MARE**

**Question:** I ultrasounded a mare with 17 day twin embryos this afternoon, located right next to each other just left of the uterine body. I am planning to recheck her tomorrow hoping that they will have separated enough that I can eliminate one of them. (almost identical size) I am wondering if any treatment for the mare is recommended? (ie Regumate, Banamine, etc.) I will appreciate any suggestions.

**Response:** Initially I would like to check the records to see when the mare ovulated. This is important because we want to be sure that the twin embryos are indeed 17 day old embryos. For the first 16 days of pregnancy the embryos are mobile and move around throughout the uterus to signal pregnancy. After day 16, the embryos undergo fixation and become implanted in the uterus. When this occurs, the embryos are no longer mobile and our client should not expect the embryos to be separated when the mare is rechecked tomorrow.

At this point, the two embryos should be mapped, measured and the information recorded and brought to the recheck. We must make sure that we are following two 17d embryos and not a 17d embryo and a 17d old sized endometrial cyst. When we recheck the mare, if both are embryos, we should see an increase in size in both embryos. If one is a cyst, it will not change in size and we can rest easy knowing that our mare is pregnant with one embryo. If this is the case, the mare should be recheck after 28d for a viable heartbeat.

Assuming that the embryos are indeed two 17d old embryos, the owner must decide how they want to handle the situation. The owner has the choice of allowing the twins to progress on their own and hope that one will spontaneously regress, attempt to abort one or both of the embryos. Several factors that the owner must consider are; the time of season, possible complications such as retained fetal membranes post twin foaling, the subsequent fertility of the mare post twin foaling, and the survival rate of twin foals carried to term.

The owner's first choice is to leave the twins alone and hope for spontaneous regression of one of the twins. According to Dr. Ginther's Twinning tree, there is an 83% probability that one of the adjacent unilaterally post fixation twins will spontaneously

regress leaving one healthy fetus. If the owner elects to do this, the mare should be rechecked at 28d for fetal heartbeats and at 40d to determine if spontaneous reduction has occurred. At this point, if twins are still present, the owner may want to reconsider their decision.

The owner's second choice is to attempt to manually separate the embryos and crush one of them with the ultrasound probe. This will most likely not be an option because the embryos are probably 17d old and are fixed into the endometrium. It may be possible to crush one of the twins without separating them but this will usually result in death of both embryos. The fluid from the crushed twin can come into contact with the healthy twin and the resultant inflammatory reaction to the fluid can cause abortion of the healthy twin. If for some reason, this is the course of action chosen, the mare should be pre-treated with Banamine and Regumate prior to the abortion of one embryo. Another drug, Propanthelene can also be given to help decrease rectal muscle tone to make manipulation easier. Manual manipulation of the adjacent twin embryos is not a good idea at this time.

The owner's third choice is to cause abortion of both embryos and rebreed the mare on her next cycle. One must consider the time remaining in the breeding season and when the mare will foal. This is dependent on breed registries etc. The mare can be aborted with a prostaglandin F2alpha, allowed to recycle and then rebred. This choice can be made at anytime from 17d to 28d. However, the decision should be made prior to 35d because at this time the endometrial cups are formed and this decreases the likelihood of spontaneous regression. If endometrial cups are formed the mare will probably not recycle for rebreeding until after 120d and the breeding season may be over by then.

Personally, I recommend the owner measure the size of the embryos and recheck to make sure both are embryos. If time allows, I would then wait until 28d and recheck for spontaneous regression of one embryo. If this has not occurred at day 28, I would administer PGF2alpha and abort both embryos, allow the mare to recycle and rebreed her. I would also recommend to the owner to check mares for pregnancy before 16d.

That way if twins are detected, they have not undergone fixation and can be more easily manipulated

**References:**

McKinnon & Voss, Equine Reproduction Textbook

Ginther, Reproductive Biology of the Mare