

into the right uterine horn. Uterine lavage was performed to aid in the removal of these structures with no success. A repeat uterine culture and cytology revealed moderate inflammation and a light growth of *Escherichia coli*. Hysteroscopy revealed several bony fragments within the right uterine horn and were extracted. There were in total 7 fetal bones, ranging from 1.5 to 2 cm consistent with 2 scapula, 2 pelvic bones, and 3 long bones. Mare was given a dose of broad-spectrum systemic antibiotics, the uterus was lavaged, and acetylcysteine was infused. Uterine lavage was continued for 3 more days. Two weeks later, a culture and cytology were performed and were negative. Mare was bred over 2 estrous cycles (~ 30 and 55 days after the procedure) and became pregnant with twins after the second estrus. One embryonic vesicle was successfully reduced and the mare was confirmed in foal with 1 fetus at 49 days of pregnancy. Due to the low prevalence of fetal mummification in the horse, the underlying cause of this phenomenon has been difficult to discern. When twins are present, placental insufficiency is typically the cause of fetal demise of 1 fetus followed by fetal fluid resorption. In singleton pregnancies, there has been no established cause for fetal mummification and why they are retained within the uterus. This case demonstrated the future fertility of mares after fetal mummification treatment.

Keywords: Mare, fetal mummy, uterine foreign body, endometritis

Reference

1. Lefebvre RC: Fetal mummification in the major domestic species: current perspectives on causes and management. *Vet Med (Auckl)* 2015;6:233-244.

Intra-uterine injection of amnion-derived acellular bioscaffold product in mares: systemic and intra-uterine effects over 21 days

Nathaniel Newton,^a Stephanie Walbornn,^a Christine Bartley,^a Jamie Kaczor,^a Lauren Moshier,^a Holly Hersey,^a Dale Kelley,^b Robert Holland,^c Maria Schnobrich^a

^aRood & Riddle Equine Hospital, Lexington, KY; ^bOklahoma State University, College of Veterinary Medicine, Stillwater, OK; ^cHolland Management Services Inc., Lexington, KY

Amnion-derived acellular bioscaffold product (ADABP) has been used as an antiinflammatory agent to promote healing in human and veterinary medicine. Proteins and cytokines present in ADABP are reported to decrease fibroblast formation and fibrosis.¹ Thus, ADABP may be beneficial in the treatment of uterine adhesions, uterine cyst ablations and remodeling of scar tissue. The safety of uterine injection of ADABP is unknown. We studied the systemic and uterine effects after uterine injection. Twelve clinically healthy light-breed mares (mean age 11.5 years; range 5 - 22) were the subjects. Rectal temperature and behavior were recorded for the duration of the study. On day 0, all mares underwent a hysteroscopic examination, control

mares (n = 3) received 3 ml injection of sterile saline in the base of 1 uterine horn, and AniCell mares (n = 9) received 3 ml of ADABP (EquusCell StemWrap D™, AniCell Biotech, Arizona) in the base of 1 uterine horn. Blood (for serum amyloid A [SAA], fibrinogen [FIB], and white blood cell count [WBC]), endometrial cytology and aerobic cultures were obtained prior to hysteroscopy. Four days (day 4) after injection, mares were evaluated via transrectal ultrasonography and blood was obtained. Twenty-one days (day 21) after injection, endometrial cytology, aerobic culture, and hysteroscopy were performed. Continuous data were analyzed to determine the main effects of group, day and their interaction using the SAS MIXED procedure with a repeated statement. Categorical data were analyzed using the SAS LOGISTIC procedure. No mares experienced an elevation in rectal temperature during the 21 days after injection. There were no differences in bloodwork for markers of inflammation (SAA, FIB, WBC) from day 0 to day 4 either in the control or AniCell group. Similarly, there were no differences in uterine cytology and culture results between groups or among days within groups. Hysteroscopy following injection demonstrated no gross evidence of detrimental effects in any mare examined. In 1 mare that received a saline injection, a small 1 cm bleb of fibrous tissue was noticed and that remained for 21 days after injection. This study demonstrated that ADABP had no detrimental effect on the systemic health of the mare and it is as safe as hysteroscopy and saline intrauterine injection up to 21 days after injection. Further work is continuing, evaluating histological changes in the mares' endometrium after injection and in clinical cases where injection is performed into uterine tissue, as ADABP may be a useful tool to promote endometrial healing in the mare.

Keywords: Amnion-derived cell product, endometritis, hysteroscopy, uterine injection

Reference

1. Mamede AC, Carvalho MJ, Abrantes AM, et al: Amniotic membrane: from structure and functions to clinical application. *Cell and Tissue Res* 2012;349:447-458.

Luteal blood flow and side effects of luteolytic doses of dinoprost tromethamine and cloprostenol sodium in jennies

Humberto Magalhaes,^{a,b} Felipe Medrado,^b Jose Dell-Aqua Jr,^b Igor Canisso^a

^aDepartment of Veterinary Clinical Medicine, University of Illinois, Urbana, IL; ^bDepartment of Animal Reproduction, São Paulo State University, Botucatu, Brazil

Exogenous prostaglandin F_{2α} (PGF_{2α}) treatment revolutionized the breeding management of livestock and horses. However, despite 4 decades of its continued use in theriogenology, the optimal luteolytic dose for donkeys has not been determined.