Society for Theriogenology
Veterinary Professionals Dedicated to Animal Reproduction

EQUINE SESSION

Low volume uterine lavage: advantages for use in problem mares

Christina Divine, Christian Bisiau, Julie Storme, Melissa Prell, Jennifer Morrissey, Jennifer Hatzel, Patrick McCue

College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, CO

Infectious endometritis is a leading cause of subfertility in broodmares. The standard sample collection technique for diagnosis of bacterial and fungal endometritis is a guarded swab for uterine culture and a guarded swab or brush for uterine cytology. However, these methods only sample a very small area of the uterus and may not always yield microbial growth in mares with infectious endometritis. Low volume lavage (LVL) is an alternate diagnostic technique that samples the entire uterine lumen. Aim of this study was to compare the results of microbial culture and cytologic evaluation from samples collected using a guarded swab and brush versus samples subsequently collected using a LAL technique in mares suspected with infectious endometritis. Reproductive records from 27 mares managed at Colorado State University were analyzed retrospectively. Transrectal ultrasonography examination and a standard uterine swab/brush were performed prior to LVL procedure. Low volume lavage was performed using 250 ml of sterile lactated Ringer's solution and the effluent fluid was then transferred into a pair of 50 ml conical tubes for centrifugation. Microbial culture was performed on swabs and LVL pellets using Spectrum™ 4-Part (Colorado) microbial agar plates (Vetlab Supply, Palmetto Bay, FL). Glass slides for cytologic evaluation were stained with a modified Wright-Giemsa stain (MWI Animal Health™, Boise, ID) and evaluated under 400 and 1000 x microscopy. Percentages of mares with microbial growth of a uterine pathogen and presence of white blood cells on cytologic evaluation were compared by Chi Square analysis; data were considered different at $p < 0.05$. Initial examination results determined that all mares were in estrus at reproductive evaluation based on the presence of mild to moderate uterine edema and a dominant follicle. An increased volume (> 2 cm depth) of uterine fluid was noted in 13 of the 27 mares (48.1%) and increased echogenicity of uterine fluid was noted in 12 of the 27 mares (44.4%) on initial transrectal ultrasonography examination. Cytologic evaluation of the guarded brush sample revealed the presence of white blood cells and/or the presence of increased background debris in 12 of the 27 (44.4%) mares. Microbial growth of 1 or more pathogenic bacteria was detected in the culture of guarded swabs collected from 4 of 27 mares (14.8%). Overall, 21 of 27 mares (77.8%), had 1 or more factors that were suggestive of endometritis. Culture from LVL pellets yielded growth of pathogenic bacterial in 15 of the 27 samples (55.6%) that was higher ($p = 0.002$) than guarded uterine swabs. Cytology samples from LVL pellets had white blood cells in 24 out of the 27 mares (88.9%) that was higher ($p = 0.005$) than guarded uterine brushes. In summary, the LVL technique is a valuable procedure in the detection of uterine inflammation and microbial infection in problem mares.

Keywords: Mare, uterus, low volume lavage, problem mare, endometritis

Use of progesterone and estradiol-17ß prior to transvaginal aspiration of oocytes

Peyton Draheim,[a] Cory Anderson,[b] Paul Dyce,[c] Candace Lyman[a]

[a]College of Veterinary Medicine, Auburn University, Auburn, AL; [b]Countryside Veterinary Clinic, St. Anthony, ID; [c]Department of Animal Sciences, Auburn University, Auburn, AL

This pilot study assessed the impact of progesterone and estradiol-17ß treatment on ovarian follicle number. Objective was to determine whether 150 mg/ml progesterone + 5 mg/ml estradiol 17ß (BioRelease P&E; BET Pharmacy, Lexington, KY) treatment can impact mare ovarian follicle numbers to increase the odds of having more ovarian follicles on a predicted day. To increase foal production, transvaginal aspiration (TVA) of mare oocytes is followed by in vitro maturation, fertilization (via intracytoplasmic sperm injection), and embryo culture. In efforts to aspirate several oocytes during 1 TVA, common practice is to repeat ultrasonographic examinations of the ovaries on multiple sequential days and schedule the procedure on the day when the mare is expected to have her 'peak' number of suitable follicles. Such a high maintenance management routine increases mare owner costs on a per foal basis. It also allows only ~ 1 - 2 days' advance notice to the practitioner performing the TVA procedure, due to the variability in follicular growth dynamics. Currently, there are no accepted treatment regimens for advanced scheduling/planning of oocyte collection via TVA in the mare. A validated estrous cycle management protocol would allow practitioners and mare owners to