



Technical Bulletin

Focus on Equine Medicine



Uterine Screening: Optimizing Your Results

Spring is in the air at Phoenix Central Laboratory and we are seeing our annual increase in equine uterine screens, cultures, and cytologies. Culture and cytological examination of endometrial specimens are important diagnostic tools for evaluation of endometritis, an inflammatory response in the uterus that can severely reduce the fertility of mares. Aerobic culture of the uterine lumen is important to identify potential pathogens. In our laboratory, the most frequently isolated bacteria from the uterus of mares are β -hemolytic streptococci and coagulase positive staphylococci with occasional coliform bacteria and small colonies of mixed flora. As bacterial contamination from the lower genital tract may mask organisms, such as β -hemolytic streptococci and coagulase positive staphylococci, our laboratory uses selective media and subcultures to isolate these organisms. *Candida* spp., associated with yeast endometritis, is also occasionally isolated.

Cytology is useful to document the presence of neutrophils and lymphocytes indicative of an endometrial inflammatory process, although the lack of inflammatory cells on cytology does not rule-out underlying infectious or inflammatory processes. Bacterial organisms may occasionally be seen on cytological samples. However, cytological specimens from swabs frequently contain granular and cellular debris that hinder visualization of organisms. Also, certain pathogens, such as β -hemolytic streptococci, are small and present in low numbers and are difficult to identify on cytological exam. For optimal results, we recommend culture with cytology to determine if infectious organisms are present. Culture and cytology results should be interpreted in conjunction with history and clinical findings for most accurate evaluation of the mare.

The equine uterine screen (PCLV test code #862) is a useful diagnostic tool for evaluation of the uterus. This panel includes uterine culture and cytology and is designed to be an economically feasible method for uterine evaluation. A guarded uterine swab should be used when collecting the uterine culture specimen to prevent contamination from the lower reproductive tract. When placing the swab into transport

culture tube or specimen tube, please leave 4 inches of the swab shaft for ease in laboratory handling. Also, if using a transport culture tube, be sure to place the swab into the gel for best preservation of specimen. Cultures may also be taken from endometrial tissue samples (not in formalin).

Samples submitted for the equine uterine screen should include 1-2 culture swabs and, ideally, 1-2 air-dried smears. Uterine smears should be prepared by gently rolling the swab, preferably a swab separate from the one submitted for culture, over a glass slide and allowing the slide to dry completely. Keep slides away from formalin fumes and do not refrigerate the slides. For best cellular preservation, smears prepared in-clinic (patient side) are preferred. However, smears can also be prepared from submitted swab(s) at the laboratory. In place of swabs, a uterine saline flush may be submitted in a no-additive, sterile container, such as our clear-top plastic tube. From this sample, both cytopsin cytological preparation, which can provide good cell interpretation, and culture can be obtained. Cytology results are reported within 24 hours (48 hours if submitted on Saturdays) and culture results are reported within 72 hours.

Please feel free to call the laboratory with any questions regarding uterine sampling or screening. – *Kristin Henson, DVM, MS, Dip ACVP, ClinPath*

The Uterine Biopsy

A uterine biopsy is often useful, especially in conjunction with cytology, culture, palpation and ultrasound in breeding soundness exam, in cases of infertility, or in the diagnostic work-up of any nonpregnant mare in which there is suspicion of uterine disease or failure to become pregnant. Endometrial morphology, specifically density and tortuosity of glands can vary seasonally and during different stages of the estrus cycle. The degree of glandular nesting or periglandular fibrosis is often patchy and specimens taken from different areas of the uterus can vary by as much as an entire category. Ultrasound examination may help guide sampling to areas which may be abnormal, in which case biopsies from more normal appearing areas can also be taken. Biopsies from near the cervix should be avoided as glands can be fewer or less dense in this area. Biopsy results are interpreted using the Kenney-Doig scale which helps predict the chances of a successful pregnancy based on morphology of the endometrium as well as the presence or absence and degree of inflammation.

Biopsy results are reported within 24-48 hours. – *Audrey Baldessari, DVM, Dip ACVP, Anatomic Path*