

Severe fibrosis and squamous metaplasia in a 14-year-old Thoroughbred mare

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Hysteroscopy is a useful diagnostic tool in evaluation of the subfertile mare. In a clinical study of hysteroscopic examinations for breeding soundness, 39% (45/108) revealed uterine pathology.¹ This abstract describes the history and clinical findings in a mare that hysteroscopy was integral in determining the mare's future prognosis for breeding. A 14-year-old, barren Thoroughbred mare was presented for reproductive evaluation with a history of chronic endometritis (3 years) that had been treated by various methods, including intrauterine kerosene. In 2016 the mare became pregnant on the third cover and foaled a very small foal after prolonged gestation (377 days). The mare was not bred in 2017. A reproductive evaluation was requested to determine the mare's future prognosis for breeding. Transrectal palpation and ultrasonography revealed inactive (anestrus) ovaries, no uterine edema, 3 cm of echogenic fluid in the uterine lumen, and a moderately toned cervix. Vaginoscopy revealed hyperemic vaginal mucosa and viscous yellow to white fluid on the vaginal floor. The vaginal fluid did not have evidence of urine contamination (creatinine concentration (0.5mg/dL)). Visual and digital examination of the cervix revealed no abnormalities. A small volume uterine lavage was performed and cytological examination of the recovered efflux revealed severe neutrophilic inflammation and cocci were seen. Aerobic culture of the efflux recovered a beta-hemolytic *Streptococcus spp.* Hysteroscopic examination revealed numerous (>15) multifocal, small (3-10mm), white sub-epithelial structures distributed throughout the endometrium. At the base of the horns circumferential, white-tan, spider-web lesions covered the endometrium and several were surrounded by small aggregates (1cm) of multiple black pinpoint lesions. Biopsy of the most normal appearing endometrium revealed a category III endometrium due to extensive neutrophilic, lymphocytic and eosinophilic endometritis with moderate fibrosis and gland atrophy. Notable was the periglandular inflammation and diffuse presence of hemosiderophages. Histologic evaluation of a single white focal lesion revealed a markedly abnormal endometrium. There was near total loss of glandular structures, with replacement by dense fibrous connective tissue. The overlying epithelium demonstrated marked squamous metaplasia, without evidence of normal, pseudostratified columnar endometrial epithelium. Immediately subjacent to the abnormal epithelium the tissue was infiltrated by large numbers of lymphocytes, plasma cells and neutrophils, with transmigration of inflammatory cells through the epithelium. The gross appearance of the mare's endometrium, in addition to the mare's history gave the mare a poor to grave prognosis for producing commercially viable offspring and the owner decided to retire the mare from breeding. This case of severe uterine fibrosis and endometrial squamous metaplasia highlights the benefit of hysteroscopy as a diagnostic and prognostic tool in determining the extent of uterine damage and recommendations for further breeding management.

Keywords: Mare, hysteroscopy, endometritis, fibrosis, metaplasia

Reference

1. Bradecamp EA, Schnobrich MR, Sheerin PC, et al: Results of hysteroscopic examinations performed as part of breeding soundness evaluations on mares presented for infertility-a retrospective study. Clin Therio 2016;8:331.