ABSTRACTS

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Diseases of the canine uterus

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Diseases of the canine uterus fall primarily into two categories: abnormalities of endometrial growth (hyperplasia/atrophy) and repair (such as post-partum involution) or uterine infections with associated inflammatory changes (1). Neoplastic conditions of the tubular genitalia of the bitch, with the possible exception of leiomyomas, tumors that arise from smooth muscle cells, are uncommon (2). The transmissible venereal tumors of dogs that grow in the vagina and vulva of bitches and are sexually transplanted by coitus, do not involve the uterus.

The clinical manifestations of various uterine disease range from none to life threatening. Examples of lesions that cause little or no impact on the health or fertility of the bitch include: serosal inclusion cysts, small leiomyomas, cycle-related atrophy, mild adenomyosis, mild cystic endometrial hyperplasia (CEH), or transient pseudo-placentational endometrial hyperplasia (PEH) (1).

Lesions that are associated with subfertility without systemic illness include marked CEH, and mild chronic lymphoplasmacytic endometritis. In a retrospective study of nearly 400 uterine biopsies taken from subfertile bitches as part of the clinical diagnostic assessment done on these bitches, the most common lesions we found were mild chronic endometritis and CEH (unpublished data, Schlafer and Gifford). The pathogenesis of the subfertility associated with some of these conditions likely involves alternation of the uterine luminal environment. Uterine lesions that are likely to manifest as systemic illness of the bitch, or bu the presence of vaginal discharge, include suppurative endometritis (which may lead to pyometra, endotoxemia or possible uterine rupture), subinvolution of placental sites (SIPS), placenta percreta (abnormal deep growth of placental tissues during pregnancy), uterine horn torsion, or malignant neoplasm (multisystemic or metastatic). The latter conditions are rare.

Endometrial biopsy, collected either by wedge biopsy taken during surgery or by transcervical biopsy (TCB) using fiberoptical systems are in increasing use to detect endometrial lesions. Endometrial biopsy has been used in mares for over 40 year and has become a standard procedure for assessment of uterine health in the mare (3). There is hope that uterine or endometrial biopsy will prove as valuable in the bitch and there have been an increasing number of articles published recently.

The TCB technique is only in limited use. The small size of endometrial tissue that can be collected limits the ability of pathologists to render as accurate an interpretation than is possible with a full thickness wedge biopsy. The uniformity of lesions along the uterine horns has not been carefully studied, so interpretation of findings will only be improved with additional research. Complications from the biopsy procedure itself can include perforation of the uterine wall or introduction of bacteria resulting in endometritis or possibly pyometra.

Recently, endometrial assessment by collection of samples for cytological assessment by trans-cervical vaginal endoscopic methods has been published (4). The fact that general anesthesia and invasion of the abdominal cavity is not necessary is a tremendous advantage. These authors reported detection of bacterial endometritis in 70% of a group of 26 infertile bitches they studied. Other endometrial conditions we have diagnosed though endometrial biopsy include “cyclical miss-matches” between cycle stage and endometrial (target tissue) response, embryonic loss induced eosinophilic endometritis, endometrial fibrosis, arterial degeneration and unexplained lymphocytis arteritis, and trophoblast persistence and accreta.

We are preparing a classification scheme, similar to those used in the mare and llamas to grade the health or severity of lesions identified through histopathology. This is based on assessment of of over 500 uterine or endometrial biopsies. Any such scheme will need to be validated through prospective clinical studies to determine if the assessment has prognostic value.

(1) Schlafer DH and Gifford AT. Cystic endometrial hyperplasia, pseudo-placentational endometrial hyperplasia, and other cystic conditions of the canine and feline uterus. Theriogenology 2008; 70:349-58.
(3) Schlafer, D H. Equine endometrial biopsy: enhancement of clinical value by more extensive histopathology and/or application of new diagnostic techniques? Theriogenology 2007; 68:413-22.