ABSTRACTS

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Diagnostic value of transcervical endometrial biopsies in domestic dogs compared to full thickness uterine sections

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OBJECTIVES AND METHODS: Cystic endometrial hyperplasia is a common condition in female canids and predisposes affected animals to develop pyometra, a life-threatening condition[1]. Ultrasound has been shown to be a valuable tool in experienced hands for diagnosing cystic endometrial hyperplasia[2], but is not useful for diagnosing other pathological conditions, such as endometritis. Transcervical biopsy is useful in diagnosing a number of endometrial pathological conditions in other species, but has been reported as not effective in the bitch[3]. The purpose of this study was to compare the pathological findings in transcervical endometrial biopsies from the domestic bitch to pathological findings in full thickness sections from the same uteri. Using transvaginal endoscopy, three separate endometrial biopsy samples were taken from 20 adult dogs using a five French biopsy instrument passed transcervically. Vaginal cytological samples and serum for progesterone analysis were taken. Between one and five days later each bitch was euthanized, the reproductive tract grossly evaluated, and a full thickness section from midway along each uterine horn was retrieved. Samples were fixed in paraformaldehyde and stored in 70% ethyl alcohol. The same pathologist, who was blinded as to the origin of each sample, evaluated each biopsy and full thickness sample for presence or absence of pyometra, inflammation, cystic endometrial hyperplasia, fibrosis, vascular distention, and lymphatic distention. McNemar’s test was performed to detect the differences in positives between biopsied samples and full thickness samples for each pathological finding.

RESULTS: Diagnostic results were obtained from 54 of 59 biopsy samples (91.5%). Many biopsy samples went deep into the tissues and recovered basal glands and myometrium. This is in contrast to a previously reported trial in which only 31.1% of biopsies were considered diagnostic and no basal glands or myometrium was observed[3].

Five dogs were in anestrus, eight in proestrus, and seven in diestrus. Pyometra was not detected in any of the biopsy tissue sections, nor on any of the full thickness sections of dogs in anestrus, proestrus, or early diestrus; pyometra was, however, detected on the full thickness sections in five out of the six dogs biopsied in mid to late diestrus, all of which had full thickness sections harvested four or five days after the biopsy procedure. The remaining dog in late diestrus had full thickness sections harvested within 24 hours of the biopsy procedure.

There was no evidence of a difference between biopsy samples and full thickness samples for inflammation, cystic endometrial hyperplasia, fibrosis, vascular distention, or lymphatic distention. The difference in proportion of positive results between biopsy and full thickness was 5% for inflammation (75% and 80%, respectively; \(P = 1.00\)), 5% for cystic endometrial hyperplasia (15% and 20%, respectively; \(P = 1.00\)), 5% for fibrosis (10% and 15%, respectively; \(P = 1.00\)), 10% for vascular distention (15% and 25%, respectively; \(P = 0.73\)), and 15% for lymphatic distention (0% and 15%, respectively; \(P = 0.25\)).

CONCLUSION: Transcervical endometrial biopsy in the bitch seems to be as reliable a method of detecting inflammation, cystic endometrial hyperplasia, and fibrosis as full thickness sections. This method may not be very sensitive for detecting vascular and lymphatic distention. Care must be taken when performing transcervical endometrial biopsy in the bitch to avoid the mid to late diestrus period, as these animals seem predisposed to development of pyometra following this procedure.

(1) Schlafer DH, Gifford AT. Cystic endometrial hyperplasia, pseudo-placental endometrial hyperplasia, and other cystic conditions of the canine and feline uterus. Theriogenology 2008;70: 349-358.