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Histopathologic and bacteriological findings in uterine biopsy samples and concentrations of C reactive protein as a serum marker in bitches with subclinical endometritis

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The aim was to study the prevalence of endometritis, the serum concentrations of C reactive protein and the bacterial population isolated from the uterus in the bitch. Fifty-six privately-owned intact mixed breed, clinically healthy bitches, in diestrus, aged between 2 and 7 years old and weighing between 5 and 27 kg were used in this study. Bitches were included in a program for breeding control at a municipal pet public shelter. The diestrus was determined based on the history provided by the owner and confirmed in each bitch based on serum progesterone and vaginal cytology. After anesthetized and before ovarian-hysterectomy (OVH), uterine biopsies were taken from both horns. Histologic examination was performed to confirm the uterine condition. For histological study, uterine tissues were fixed in10% buffered formalin solution, paraffin embedded, sectioned, stained with hematoxylin and eosin, and then examined using a microscope at 100 X and 400 X. Before OVH, vaginal cytology samples were taken in all bitches, and blood samples were taken in 28 animals to measure Progesterone (P\textsubscript{4}) and C reactive protein (CRP). All samples were centrifuged and stored at–20 °C until P\textsubscript{4} (chemiluminescence immunoassay, (Elecsys\textsuperscript{R}, Progesterone II; Roche, Mannheim, Germany) and CRP (Latex agglutination, C-Reactive Protein\textsuperscript{S}, BioSystems, Barcelona, Spain) were measured. Samples for bacteriological culture were collected from the uterus using sterile swab in eleven bitches, three from normal uterus and eight from uterus with endometritis. All swabs were placed into Stuart’s transport medium and used for culture. On histopathologic examination, the most common observation was endometritis (33/56), followed by normal uterus (17/56), cystic endometrial hyperplasia (6/56), and fibrosis with degeneration of the endometrial glands (2/56). Concentrations of CRP were higher in bitches with endometritis compared to the bitches with normal uterus (mean concentrations 5 vs. 7,5± 1,6 mg/L, P<0.05, respectively). Bacteriological cultures were positive to bacterial growth in only one sample taken from a uterus from a bitch with endometritis. The other ten samples were negative to bacterial growth. In agreement with previous findings, our result show that endometritis is a common disease in the bitch\textsuperscript{[2]}.

Furthermore, our findings are in agreement with those from Watts et al who observed not bacterial growth in uterine samples during diestrus\textsuperscript{[3]}, and therefore, bacteria appear not to be relevant in endometritis pathogenesis. Furthermore, like in pyometra, in endometritis CRP could be useful as a marker for diagnosis and prognosis\textsuperscript{[1]}