

SPECIAL FORM OF ENDOMETRITIS OR MUCOSA-ASSOCIATED LYMPHOID TISSUE IN THE GENITAL TRACT OF DROMEDARY CAMELS

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There is limited information on normal uterine histology, endometritis and evaluation of uterine biopsies in camelids. Chronic lymphoid granulomatous endometritis has been described in dromedaries in Africa [Gimbo A, Zanghi A. Schweiz Arch Tierheilkd 1981;123:249–61; Tibary A, Anouassi A. In Theriogenology in camelids. Rabat, Maroc: Institute Agronomique et Veterinaire Hassan II; 1997. p. 243–316; Wernery U, Kaaden OU. In Infectious diseases in Camelids. Berlin, Germany: Blackwell Wiss.-Verl.; 1992. p. 109–33]. The etiology of this condition remains unknown.

Uteri were collected at a local slaughterhouse and transported to the laboratory for evaluation. Based on history and pre-mortem clinical examination, dromedaries were classified into one of four groups: young, maiden (<5 years); middle age (5–10 years) with or without lactation; old (>10 years), lactating; old (>10 years), barren. Uteri were examined macroscopically, swabs were taken for aerobic and anaerobic culture and tissue samples were collected from four consistent locations, fixed, sectioned, and stained with haematoxylin and eosin (HE). Selected samples were also stained with periodic acid Schiff (PAS) and Ziehl-Neelsen and were used for immunohistochemical examination. For the detection of T and B cells, rabbit anti-human CD3 antibody (A0452, DAKO) and mouse anti-human CD79 α cy antibody (M7051, DAKO) were used, respectively.

Lymphoid follicles similar to those found in lymphoid tissues (e.g. tonsil or Peyer's patches) were observed in 12 of 44 genital tracts (27.3%). There was a difference in the incidence of this structure among groups ($p < 0.001$). No lymphoid follicles were observed in young, maiden and in old, barren dromedaries. However, the structure was detected in most of the genital tracts (9 of 11, 82%) from middle age camels and in half (3 of 6) of old, but lactating animals. Some camels had lymphoid follicles both in the endometrium and in the cervix, whereas others had them in only one of these locations. There was no correlation between bacteriological findings and the presence of lymphoid follicles. These lymphoid follicles were located in the sub-epithelial region and varied largely in size (200–400 μ m). The germinal center consisting of macrophages, lymphoblasts and FDCs, was surrounded by numerous layers of mononuclear cells that stained positive for CD3, indicative of T cells. Only a few of these cells were positive for CD79 (B cells). In some cases, the center of the follicles contained a PAS positive amorphous structure surrounded by mononuclear cells and few giant cells. No acid-fast rods (mycobacteria) were observed in or near the lymphoid follicles.

We inferred that these lymphoid structures were not a result of chronic endometritis. In contrast, these structures seemed to be an integral part of the normal uterine defense mechanism in camelids and were only present after certain reproductive events (i.e. parturition, mating). This hypothesis needs to be elucidated in further studies.

Keywords: Dromedary camel; Uterus; Lymphoid follicle; T lymphocyte; Uterine defense