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Secretory activity of the endometrial glands from prepubertal bitches with partial ablation of their development


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The endometrial glands are structures that are present in the uterus of all mammals, which have functions to synthesise, secrete and transport a complex mixture of substances necessary for embryonic development and maintenance before placentation. Inadequate exposure of the female dog reproductive system to progestagen during periods of uterine development can partially inhibit the development of endometrial glands. However, the effects of this steroid on the functionality of the developed glands is not known, as well as the possible occurrence of endometrial fibrosis. This study aimed to evaluate the secretory activity of the endometrial glands of prepubertal bitches undergoing protocol for partial ablation of uterine adenogenesis. All procedures were performed following the Brazilian College of Animal Experimentation (COBEA) principles. Sixteen mongrel females were distributed in the MPA group (n = 8), females who received medroxyprogesterone acetate (10 mg / kg / SC) applications, every 3 weeks, and C (n = 8), control females not treated. At 6 months old, ovariohysterectomy was performed in all animals and the uterine horns were evaluated by histology and histochemistry. To evaluate the intensity of secretion (1-4 degrees), Periodic Acid Schiff (PAS), and alcian blue (AB) pH 2.5 were used. For histological evaluation Trichrome Masson and toluidine blue were used. The histological data were evaluated by descriptive analysis. To analyze the intensity of secretion by different colors, it was applied the non-parametric Wilcoxon test for independent samples. Data analysis was carried out in the computer program of free access R. The analyzes were considered significant when the p value was ≤ 0.05.

Serial injections of MPA from birth until the age of 6 months caused a decrease in the development of endometrial glands by approximately 35% in bitches. Besides, only markings grades 1 (absent) and two (discrete) for PAS were observed in both groups, with no difference in the intensity of uterine secretion between groups with respect to the degree found. However, the MPA group showed greater intensity of uterine secretion (grade 2) than in group C (p < 0.05). With respect to AB pH 2.5, in both groups only degrees 1 (absent) and 2 (mild) were also found, without significant differences between groups. No markings for Masson's Trichrome staining at periglandular region in both groups were observed. Greater amount of mast cells present in the uterus was observed in the myometrium region in both groups. We conclude that prepubertal bitches treated with serial injections of MPA from birth until the age of 6 months present a decreased uterine adenogenesis (35%), have minimal uterine secretory activity, no periglandular fibrosis and increased presence of mast cells in the myometrium in relation to the endometrium.

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