ABSTRACTS

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Effect of deslorelin acetate (Suprelorin®) in domestic cat testicular morphology

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OBJECTIVES AND METHODS: This study aimed to evaluate the effect of deslorelin acetate on testicular morphology of domestic cats during and after treatment contraceptive. Five tom cats, 2 to 3 years old were used. Spermatogenesis in these animals was confirmed by andrological examinations and concentration of plasma testosterone. After this, all cats were submitted to anesthetic association and one implant of deslorelin acetate (Suprelorin®, Peptech Animal Health Pty Limited, Australia; 4.7 mg/animal; sc) was introduced in the subcutaneous tissue of the interscapular region. Ninety days from the application of contraceptives, the animals were anesthetized again and the implants were removed through a skin incision and then unilateral orchietomy was performed. Sixty days after the end of treatment, the remaining testicle was removed. Both testicles were fixed in 10% formalin, after this the organs were embedded in paraffin and sections of 5mm were cut and stained with hematoxylin-eosin.

RESULTS: There were no difficulties in the application and subsequent removal of deslorelin acetate. The use of GnRH agonists in male felids has been described for over 10 years (1), however there are no studies about the histological modifications after the use of this contraceptive. This is the first report of testicular morphology analysis in domestic cats after treatment with GnRH agonist. Histological examination of the testes removed after 90 days of treatment revealed a marked atrophy of the germinal epithelium and in tubule diameter. Most tubules had lined up only for one to two layers of spermatogonia and / or primary spermatocytes, sometimes presenting necrotic cells. The lumen of some tubules showed spermatids instead of sperm. In other tubules in the same animal, however, all the sperm cell line was observed, indicating the presence of active spermatogenesis. Levy et al. (2) observed similar results in cats after administration of a GnRH antagonist. Epididymal ducts contained rare spermatooza in lumen. The Leydig cells were easily identifiable, in contrast to the described by Junaidi et al. (3) who found marked atrophy of Leydig cells in dogs treated with GnRH agonists contraceptive. These authors described atrophy of the tubules and the epididymal sperm counts were similar to those observed in our work. In histological evaluations of the remaining testicle, 60 days after implant removal we observed that most of the seminiferous tubules showed up completely covered with germinal epithelium and the lumen had higher sperm content. The epididymal duct lumen had a higher sperm content compared to the epididymal duct removed during contraception treatment. The available literature on the subject does not provide data time of spermatogenesis return in the species studied. However the histological analysis performed revealed normal testes with spermatogenic activity, indicating that the atrophy observed during contraceptive treatment was reversed and the animals recovered spermatooza production.

CONCLUSION: Deslorelin acetate causes atrophy in seminiferous tubules, lineage sperm depletion and decrease of epididymal content, indicating partial suppression of spermatogenesis. After termination of treatment the recovery of spermatogenesis was observed through the recovery of spermatooza lineage in the seminiferous tubules and increase of sperm content in epididymal lumen. Financial support: FAPESP.

Figure 1: Atrophic seminiferous tubules with necrotic cells in a cat 90 days after initiation of contraceptive treatment with deslorelin acetate (400 x increases).

Figure 2: Seminiferous tubules with complete spermatogenesis in a cat 60 days after end of contraceptive treatment with deslorelin acetate (400 x increases).