

CALCIUM CHLORIDE ASSOCIATED WITH DIMETHILSULFOXIDE TO CHEMICAL STERILIZATION OF THE DOGS

Renata Cristina Alves da Silva¹, Leandro Guimarães Franco^{1,2}, Cristiane Sella Paranzini³;
Fabiana Ferreira de Souza^{1,3*}

¹Veterinary Medicine, Universidade de Franca, UNIFRAN, Franca, Brazil

²School of Veterinary and Animal Science, Universidade Federal de Goiás, UFG, Goiânia, Brazil

³School of Veterinary Medicine and Animal Science, Universidade Estadual Paulista “Júlio de Mesquita Filho”, UNESP, Botucatu, Brazil

*Corresponding author

The aim of the study was to evaluate the effect of calcium chloride (CaCl₂) intratesticular injection associated with dimethylsulfoxide (DMSO) as chemical castration in dogs. Twelve dogs were divided into two groups: treated (n = 6), in which 15 mg/kg of 7.5% CaCl₂ solution associated with 0.5% DMSO was injected into each testicle (1.0 to 4.76 mL); and control group (n = 6), that was injected 0.9% sodium chloride solution. Sperm production pre- and post-treatment was evaluated. Semen was collected by manual manipulation and seminal characteristics were assessed (volume, sperm motility, vigor, concentration and morphological defects). Serum testosterone concentration was determined before (D-1), at 15 (D15), 30 (D30) and 60 (D60) days after intratesticular injection. Testicles size and local pain were evaluated at the same periods and for 7 consecutive days and at 15, 30 and 60 days (D1 to D7, D15, D30 and D60) after CaCl₂ injection. At D60, orchietomy was performed and testicle histological evaluation was performed. The variables were analyzed by Shapiro-Wilk to normality. Differences between the groups were verified using Kruskal Wallis test and Student-Newman-Keuls to multiple comparison (p≤0.05) by SigmaPlot software version 11.0. No pain was noticed at testicular palpation, with the exception of one dog in the treated group. At D30, this same dog presented protective reaction to touch and ulceration in one testicle, when was possible to observe scrotal adhesion to the adjacent tissue with extensive circumscribed areas of a yellowish, caseous and friable lesion, which was later diagnosed by histology as a pre-existing mesenchymal neoplasm. Testicular volume increase was evident within the 24 hours after treatment, followed by gradual reduction into 3 weeks. Five of the treated dogs presented azoospermia at D15, except one that presented at D30. There was no significant difference in testosterone concentrations in the treated group during experimental period. Histological evaluation showed testicular degenerative lesions, especially at proximal and middle portion. The results indicated that one injection of 7.5% CaCl₂ associated with 0.5% DMSO into each testis, is a viable alternative for dogs' castration.