INTRATESTICULAR INJECTION OF A CALCIUM CHLORIDE TINCTURE IN THE DOG

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Chemical castration is an alternative non-surgical approach to male dog contraception. The technique is not challenging; it is also inexpensive and suitable for large-scale sterilization programs. Advantages of nonsurgical chemical sterilization are apparent reduction of pain and stress, and elimination of hemorrhage, infection and other surgical *sequelae.* An ideal chemical sterilizing agent for male domestic animals would be one that effectively arrests spermatogenesis and androgenesis as well as libido, and lacks toxic and untoward side effects. Intratesticular injections have been investigated as a method of inducing aspermatogenic orchitis and male contraception for more than five decades. Unfortunately the ideal chemical agent has not been found, yet. Although a tincture of calcium chloride seems a promising compound.

The aim of this trial was to evaluate the efficacy of 20% calcium chloride in pure alcohol solution, injected into the testicular parenchyma, as a method for chemical castration in male dogs.

Twenty-one dogs of mixed breed, 4.7±1.23 years old, 20±5.84 kg of body weight, in good clinical condition and normal reproductive parameters, were lightly sedated and injected into the dorso-cranial portion of both testes with a solution of 20% calcium chloride dihydrate in ethanol (95%). The dose injected corresponds with the testicular width (19-22 mm receive 0.8 ml; 23 and above 1 ml). Semen evaluation was performed by CASA (Computer Assisted Sperm Analysis) system at days 0, 30, 60 and 90. Blood testosterone levels were measured at days 0 and 90.

Forty-eight hours after the injection, dogs showed very light discomfort at palpation and light testicular tumefaction, which regressed within 3 days. At day 30, testicular ultrasonography revealed bilateral more dense nodular lesions; prostatic volume and parenchyma were normal. Semen evaluation showed azoospermia at days 30, 60 and 90. At day 90 testicles were shrunk at palpation. Testosterone was statistically reduced at day 90 (baseline 454.6±159.9 compared to day 90 215.2±31.6, $p<0.1$).

An intratesticular injection of 20% calcium chloride in pure alcohol solution, as a method for chemical castration, was effective and economical for the sterilization of male dogs. These results suggest that this intratesticular injection can contribute to a simple alternative method to surgical castration.