

INFRARED THERMOGRAPHY TO EVALUATE THE INFLAMMATORY REACTION AFTER TESTICULAR INJECTION OF 20% CaCl_2 ASSOCIATED TO LIDOCAINE 1% OR 0.5% DMSO, AND TREATMENT EFFECTIVENESS, IN TOMCATS.

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Infrared thermography is a simple, objective, effective and non invasive medical tool, to detect and measure superficial skin temperature variation due to pathological processes on its underlying tissue. It can be used to monitor the inflammatory reaction caused by intratesticular injection of sclerosing agents used as an alternative method for mass animal's population control. In this view, the aim of this study was to evaluate the inflammatory reaction caused by intratesticular injection of 20% calcium chloride (CaCl_2) with 1% lidocaine or 0.5% dimethylsulphoxide (DMSO) in tomcats, by infrared thermography, and evaluate the treatments effectiveness. 18 stray male cats, divided into three groups (n=6), were used: control group, which received 0.25mL injection of 0.9% NaCl solution in each testis, LIDO group, 0.25 mL of 20% CaCl_2 with 1% lidocaine and DMSO group, 0.25 mL of 20% CaCl_2 with 0.5% DMSO. Testicular biometry, sperm collection, penile spine evaluation were performed before (D0) and 60 days (D60) after testicular injection for control and LIDO group, and, 80 days (D80) for DMSO group. Thermographic measurements and pain related behaviour evaluation, were done before the treatments (D0), 10 minutes (10 min), 1 (1h) and 6 hours (6h) after injection and for 7 consecutive days (D1-7). Testicular temperature mean of each group and moment are described on Figure 1. The thermographic measures were similar in the three groups with discrete variation between moments. Testicular total volume (TTV) mean and SD at D0 vs D60 in cm^3 for control group was $1,7 \pm 1$ vs $1,3 \pm 0,2$ and for LIDO group was $1,3 \pm 0,5$ vs $0,8 \pm 0,4$. The DMSO group showed significant reduction at D80 ($1,4 \pm 0,4$ vs $0,7 \pm 0,3$). The cats in the LIDO group had 20% reduction on TTV, 70% showed seminal subfertility parameters and penile spine reduction, while the cats in the DMSO group had 50% reduction on TTV, were azoospermic and showed total absence of penile spine by the end of the study. None of the cats had behavioral change related to pain. By this study we concluded that infrared thermography is efficient to diagnose and monitor inflammatory processes in cats testes. The cats suffered mild inflammatory reaction due to the mechanical act of intratesticular injection, but it did not compromised the welfare. The CaCl_2 association with DMSO is more effective to promote infertility in male cats, than with lidocaine.

Figure 1. Mean of testicular area temperature of the cats from control, LIDO and DMSO groups, measured in Celsius degree, by infrared thermography.

