

EXPERIENCE USING CALCIUM CHLORIDE DOG NEUTER INJECTION IN ECUADOR

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The goal of the study was to evaluate calcium chloride dihydrate in alcohol (calcium chloride) as a method of population control in three poor communities of Cotacachi in Ecuador. The dogs were given calcium chloride intratesticular injection by licensed veterinarians using standard protocols. Testicular measurements were made on days 0, 3 and 30, and a questionnaire was administered to the owners on days 3 and 30. A human chorionic gonadotropin (hCG) testosterone stimulation test was performed prior to calcium chloride administration and again on day 30. Injections and day 3 follow up data were obtained for 33 dogs, and a subgroup of 16 dogs was evaluated on day 30 post-injection. This study group was part of approximately 100 male dogs presented for chemical sterilization during this campaign.

As expected, most dogs in the study group showed a mild increase in testicular size (swelling) from an average of 23.1 mm (SD=4.9) at baseline to 29.7 mm (SD=7.5) on day 3. This increase was significant [$t(1,34)=-6.95$, $p < 0.01$]. By day 30 the testicular size was significantly decreased to 22.3 mm (SD=5.0) on average [$t(1,16)=4.25$, $p < 0.01$]. Testosterone levels post hCG stimulation were not significantly different at day 30 ($n=16$, baseline average 1.58 ng/ml (SD=1.68) vs. day 30 average 2.16 ng/ml (SD=3.27)). Based on the survey on day 3, only two (6%) of owners indicated that their dog was eating less or licking his testes and 14 (41%) of owners noticed some swelling. No owners reported behavioral changes in the study group by day 30.

Of the 34 dogs in the study, six showed swelling; most were not receiving anti-inflammatory medicine. Complications ranged from moderate tissue irritation to complete scrotal sloughing in two dogs. All dogs with known complications received veterinary care and recovered fully. The complications were more common in dogs younger than 1.5 years.

In conclusion, there was a reduction in testicular size but not testosterone production by 30 days post-calcium chloride injection in our study dogs. Unfortunately, due to cultural influences, our test group and follow-up size was smaller than hoped. Dog owners did not indicate that there was any change in the dogs' behavior, however this is positive in our culture because some owners were afraid of a behavior change after neuter. Reducing complications is a goal in further use of calcium chloride neuter injection.