Canine tin-117m colloid intra-articular injection release guidance

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Abstract

Radiosynoviorthesis using a tin-117m (Sn-117m) colloid is proving to be an effective treatment of osteoarthritis of the canine elbow. This study used clinical measurements of external exposure and Monte Carlo simulations in order to develop guidelines for the release of treated dogs from radiation safety isolation based upon the public dose limit of 100 mR (1 mSv).

Methods

Twelve adult client owned dogs were treated with the tin-117m colloid for Grade 3 osteoarthritis of the elbow. The nominal dosage of 1.75 mCi to an elbow of a 50 pound dog was adjusted by weight-based body surface area and capped at 3 mCi. Nine dogs were treated in both elbows and three were treated in just one. They weighed 73.8±16.4 [50-101] pounds and received 3.7±1.3 [1.6-5.6] mCi in all.

Results

All actual exposure measurements (Figure 4) were below 500 µR/hr at 1 meter which allowed for immediate release. These findings agreed with the model results.

Figure 1 Injection of a canine elbow with Sn-117m colloid.

Dogs that have been treated by radiosynoviorthesis using tin-117m colloid may be released from radiation safety isolation immediately after treatment with tolerable restrictions on human interactions.

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