Avoiding Feline Injection Site Sarcoma

Feline injection site sarcomas (FISSs) can be associated with vaccination sites as well as sites of other injection types (eg, antibiotics, long-acting corticosteroids, insulin). The reported incidence varies from 1.3/1,000–1/10,000 vaccinations. Risk factors include number of injections at a site and administration of cold versus room-temperature vaccines. Administration of 3–4 interscapular vaccines can double risk for sarcoma when compared with administering only 1 vaccination in that region. Sarcoma development is related to the presence of multiple growth factors, cytokines, and oncogenes.

Staging and treatment of FISSs involves imaging (eg, radiography, CT) for gross metastasis and/or the ability to achieve lateral surgical margins of 3–5 cm and 2 muscle layers deep. Outcome greatly depends on first surgery success. Patients often need 4–7 days of hospitalization for multimodal pain management. Heavy sedation is sometimes recommended for 24–48 hours postsurgery. Active suction drains and assisted feedings via esophagosotomy tubes may assist recovery. Some specialists suggest following surgery with radiotherapy, but evidence of its benefits is inconsistent. Ongoing investigations include chemotherapy and immunomodulation.

 Commentary
FISSs have changed vaccination practices and continue to challenge cautious practitioners to consider relative risk for a preventable disease, where on the body to administer vaccines, and how frequently we should vaccinate. We now must decide if more prudent vaccine protocols fit with both fiscal and practice standards. We should at least consider that vaccines be placed in separate locations on a cat’s body and emphasize the extremities for adjuvanted injections. Current recommendations suggest that no adjuvant injection should be given in the scruff of the neck, the most difficult place to surgically remove a tumor.—Heather Troyer, DVM, DABVP, CVA

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Research Note: Snakes & Laser Surgery

CO2 laser produces infrared light absorbed by intra- and extracellular water molecules. Radiowave radiosurgical (RWRS) instruments use electron waves to cause ionic agitation in cells at the tip of the electrode, where it contacts tissue. Both vaporize intracellular water to cut and coagulate tissue. The thermal energy produced also dissipates into surrounding tissues as heat, potentially delaying healing and increasing risk for dehiscence.

A study was conducted to evaluate first-intention healing of CO2 laser (4.0-MHz RWRS) and scalpel incisions in ball pythons. Wound healing in reptiles is slower than in mammals or birds and is affected by wound orientation, nutrition, health and immune status, and provision of species-specific environmental conditions. A skin biopsy sample was collected and 2-cm skin incisions (4 per modality) were made in each of 6 snakes, then closed with surgical staples. One skin biopsy sample per incision type per snake was obtained on days 2, 7, 14, and 30. Samples were assessed and scored for total inflammation, histologic response, and other variables. Based on histologic response scores, use of a scalpel was preferable, followed by RWRS, then laser. Greater wound edge separation was noted for laser incisions than for RWRS and scalpel incisions. Less necrotic tissue was noted in incisions made with a scalpel compared with CO2 laser and RWRS incisions. Results suggested no substantial benefit to using CO2 laser and RWRS over using a scalpel when making incisions.

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