



CAPITAL CITY SPECIALTY & EMERGENCY ANIMAL HOSPITAL

SURGERY NEWSLETTER

AUGUST 2024



Tumor-Specific Electroporation

Tumor-specific electroporation (TSE) is an emerging technique in veterinary oncology that utilizes electric pulses to enhance the treatment of tumors. Electroporation can enhance the delivery of therapeutic genes or drugs directly into tumor cells, significantly improving the efficacy of cancer treatments such as gene therapy and chemotherapy. For example, electrochemotherapy combines electroporation with chemotherapy to increase drug uptake by tumor cells, resulting in higher rates of tumor cell death. This technique has been particularly promising in treating hard-to-reach or otherwise inoperable tumors in animals. The use of TSE in veterinary medicine not only allows for targeted tumor ablation but also helps to stimulate the immune system's response, which can further aid in controlling the spread of cancer.



Ideal TSE Cases

- Incompletely excised mast cell tumors (MCTs)
- Multiple cutaneous or subcutaneous MCTs
- Cutaneous or subcutaneous MCTs in difficult locations
- Nasal planum squamous cell carcinoma (SCC) in cats
- Sublingual SCC in cats
- Palliative management of oral tumors in dogs and cats
- ± Incompletely excised soft tissue sarcomas
- ± Anal sac carcinomas

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CASE OF THE MONTH

Wide Surgical Resection of a Cutaneous Squamous Cell Carcinoma and Reconstruction with Double Axial Pattern Flaps

Dr. Lea Mehrkens, DACVS

History

A 14-year-old, male neutered, domestic shorthair cat presented with an ulcerated ventral mandibular lesion that had been present for 4 months. Aspirates obtained from his primary care veterinarian were consistent with suppurative inflammation and atypical squamous cells. The lesion did not resolve with a Convenia injection or topical cleanser.



Physical Exam

The lesion measured 1.5 cm in diameter, occupying the majority of skin on the rostral ventral mandible.

The lesion was deeply ulcerated with raised peripheral margins and foul-smelling central discharge. No significant lymph node enlargement was noted.

Work Up

Based on the appearance of the mass and aspirate results, squamous cell carcinoma (SCC) was the most likely diagnosis. Other differential diagnoses included fungal disease, other neoplasia, or penetrating foreign material. A sedated biopsy of the lesion was recommended, which confirmed SCC.

Three-view thoracic radiographs showed no evidence of lung metastasis. A preanesthetic bloodwork panel was unremarkable.

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Surgery

The goal for this patient was to obtain 1 cm lateral margins around the mass and one tissue plane deep to the mass. This cat's lesion occupied the majority of the underside of the chin, which was anticipated to leave a large defect. Options to close the defect included an axial pattern flap, rotational flaps, and free skin grafting. The axial pattern flap, which by definition incorporates a direct cutaneous artery, was selected as the preferred method of closure due to ready availability of excess skin around the neck and due to the robust blood supply and lower reported complication rate. The facial artery flap, also known as the angularis oris flap, was elected as the primary method of closure and the caudal auricular axial pattern flap was elected as a "plan B".

A sterile marker and ruler were used to outline 1 cm margins circumferentially as well as the outline of the two potential flaps.



The mass was then resected with 1 cm lateral margins and a fascial plane for deep margins.





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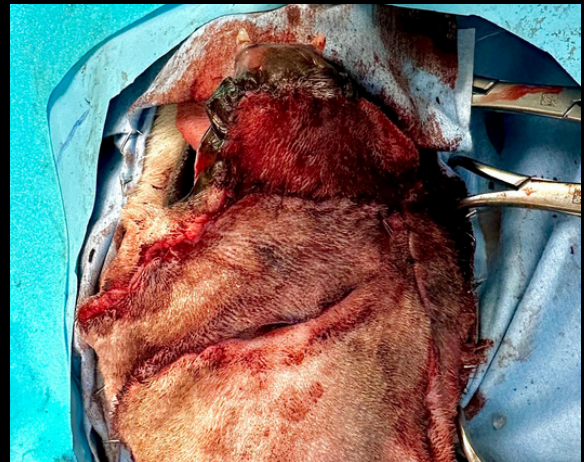
After mass excision, the facial artery flap was found to be insufficient for full closure of the wound. As a result, the defect was closed with both a facial axial pattern flap and a caudal auricular axial pattern flap. The flaps and wound beds were closed with 3-0 PDS buried interrupted sutures in the subcuticular layer and 4-0 Monocryl simple continuous sutures.

Postoperative Recovery

The cat recovered from surgery uneventfully with complete healing of both flaps.

Histopathology revealed complete histologic excision of a cutaneous SCC.

There is nothing published on the outcome of cats with cutaneous SCC following surgery. Based on the high cure rates for cats with solar-induced SCCs and for dogs with solar and non-solar-induced SCCs, the prognosis should be very good for this cat.



A note about flaps: Postoperatively, icing of the surgery site is contraindicated. Vasoconstriction secondary to cool compressing can result in flap death.

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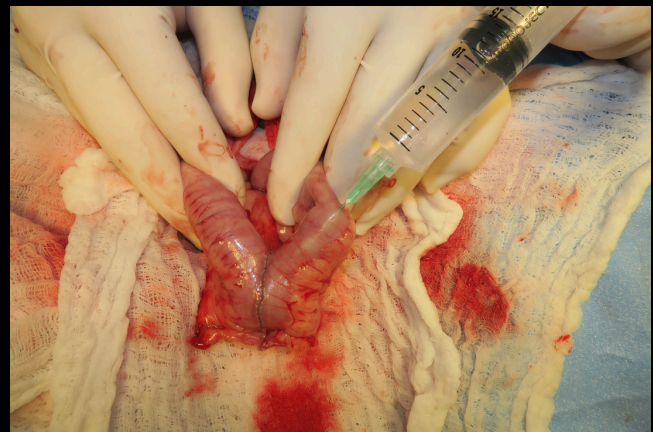
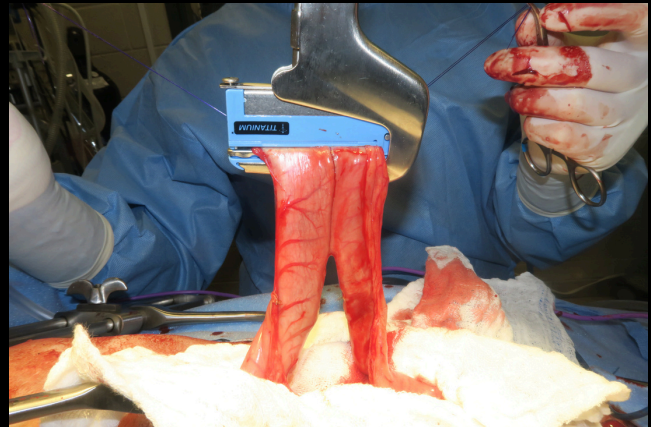
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DID YOU KNOW

Stapled intestinal anastomosis have a number of advantages over sutured intestinal anastomosis?

In one study, stapled intestinal anastomoses were superior to sutured anastomoses because they were faster to complete, resulted in less tissue trauma and quicker resumption of gastrointestinal motility, and were associated with reduced hospital stay duration.

In another study, the dehiscence rate was less with stapled intestinal anastomoses (5%) compared to sutured anastomoses (13%).



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MEET OUR TEAM

Jenn Abbott

Specialty Surgery Administration

Hello! My name is Jenn.

I am the Specialty surgery admin for Capital City Specialty & Emergency Animal Hospital. I have been working in this industry for over 14 years, with 6 of those years working within a specialty practice setting.

I was fortunate to have started working with Dr. Liptak in 2022, and then followed him when he opened Capital City Specialty & Emergency Animal Hospital in March 2023.

Client and referring veterinarian relationships are very important to us. As a first point of contact, I take extra care in informing your clients on our process for seeing our specialty surgeons. I review what to expect during their first consultation, and answer any questions that they may have about our hospital. I try to provide them with as much information as possible, as I find this allows your clients to be well informed and feel more at ease during their first visit with us.



Our communication does not stop there; we follow up with each of our surgical patients to ensure a smooth recovery process at home and can address any concerns they may have as soon as possible! Being able to help streamline our surgical service's referral process has been a highlight for me and I love being a part of your patient's treatment success. I look forward to receiving your referrals.

Warm regards,
Jenn
Specialty Surgery Administration

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REFERRALS

As the largest specialty hospital in the National Capital region with four, and soon to be five, small animal surgery specialists, we are able to offer the complete range of surgeries to our referring veterinarians and owners. From TPLOs to total hip replacements, from basic to complex fractures and luxations repairs, from hemilaminectomies for dogs with IVDD to brain tumor resections, from cystotomies to portosystemic shunt attenuations, from laparoscopic spays, gastropexies and cholecystectomies to

subcutaneous ureteral by-pass and thoracoscopic lung lobectomies, and from cutaneous tumor resections to limb-sparing surgery and oral and maxillofacial tumor resections, we do it all. Not only do we do it all, but we do it all on weekdays for elective and emergency cases and after hours on weekends for emergency surgeries. We also have 24/7 support from our emergency team as well as specialists in anesthesia, emergency and critical care, and internal medicine.

To refer cases to our surgeons, go to our website at <https://capcityvet.com/surgery-referral-form/>, or call or email Jenn at (613) 244-7387 or surgery@capcityvet.com.



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