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Chronic feline stomatitis? Try extraction, CO₂ laser

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For The Education Center

Stomatitis is the inflammation of the mucous lining of any of the structures in the mouth. In clinical use, the term should be reserved to describe widespread oral inflammation (beyond gingivitis and periodontitis) that may extend into sub-mucosal tissues (e.g., marked caudal mucositis extending into submucosal tissues may be termed caudal stomatitis).

Feline chronic gingivitis, stomatitis (FCGS) is an umbrella term used to describe the chronic stomatitis syndrome in cats. The disorder can be further characterized as Type 1 with only alveolar, labial/buccal mucositis/stomatitis rendering a better prognosis (**Figure 1**) and Type 2 with caudal mucositis (with or without alveolar and labial/buccal mucositis/stomatitis). (**Figure 2**)

FCGS inflammation is believed to occur secondary to a hyperimmune response to a multifactorial mechanism combining sensitizing antigens from plaque and viruses. Acute episodes of caudal mucositis/stomatitis can be induced experimentally by infection with virulent caliciviruses, but not the FCGS syndrome.

Herpes virus is not thought to play a significant role in the etiology FCGS. Immunosuppression due to FIV or FeLV may adversely affect the cat's prognosis with or without surgery but is not thought to be an etiological agent.

Chronic stomatitis may appear similar to FCGS but differs from other gingival inflammatory diseases (i.e. feline juvenile and adult-onset periodontitis, feline eosinophilic granuloma complex) and other metabolic, nutritional and neoplastic diseases that may present with a clinical appearance of oral inflammation. By the time many veterinarians see the affected cats, the syndrome has progressed.

Medical Management of FCGS

Non-surgical management of FCGS may initially appear to be effective in some cases as evidenced by the resolution of inflammation. Unfortunately, the response often appears to be short-term and results directly from actions of antimicrobials and anti-inflammatories, which may decrease the signs of inflammation and infection but not alter the etiology or eventual progression of disease.

At best, medical care is a short-term approach to therapy, and at worst it can cause long-term side effects, resulting in a poor prognosis.

Surgical Management Starts With Extractions

Teeth are plaque-retentive surfaces. Supragingival and subgingival plaque appears to be one of the multifactorial initiating sources of the stomatitis oropharyngeal inflammation. Removing teeth decreases the plaque burden.

The treatment shown to have long-term positive results without the need for further medication in a majority of affected cats is extraction of teeth affected by gingival or mucosal inflammation. The decision whether all teeth are extracted or only some of the premolars and molars is based on clinical and radiographic examination findings.

If clinical inflammation, periodontal pockets or tooth resorption are noted around the canines or incisors, they also are extracted. Pulverizing or atomizing the root within the alveolus with a water-cooled, high-speed handpiece and dental bur may result in removing excess supporting bone, removing too little tooth or traumatizing adjacent anatomy. It should be avoided. Crown reduction and gingival closure are also not indicated in cases of FCGS.

For those patients with anorexia that present in poor condition, nutritional support via pharyngostomy, nasal-tube feeding or gastrostomy tube is indicated postoperatively until eating returns to normal.

Pain management in surgical patients is accomplished with preanesthetic opioid administration (buprenorphine), intraoperative local anesthetics (bupivacaine) and postoperative opioids given orally for five to seven days.

To evaluate the response to extraction in cases of

feline chronic stomatitis, a retrospective study of dental extractions in 95 FCGS cats was conducted at the University of Pennsylvania School of Veterinary Medicine. Median postoperative follow-up time was 231 days, with a range of 33 to 2,655 days. Six out of 95 cats, or 6.3 percent, had no improvement and 25, or 26.3 percent, had little improvement in stomatitis following tooth extraction and extended medical management (prednisolone).

Following tooth extraction, 37, or 39 percent of the cats, had substantial clinical improvement and 27, or 28.4 percent, had complete resolution of stomatitis. Of these 64 cats, 44, or 68.8 percent, required extended medical management for a finite period to achieve positive outcomes.

The extent of tooth extraction (full-mouth extraction vs. partial-mouth extraction) was not associated with overall response to treatment.

For the past 15 years, we have used the Aesculight CO₂ laser in most of our chronic stomatitis cases. The laser's ease of use and efficacy have proven the benefit of Aesculight in hundreds of cases. For example:

■ The CO₂ laser helps decrease the real estate of excessive inflamed tissues in the caudal oral cavity. These tissues are covered by plaque, which perpetuates the stomatitis syndrome. Cutting and ablation of the diseased tissue with the CO₂ laser beam is quick and virtually bloodless.

An added bonus is the laser's sanitizing effect. The 10.6-micrometer wavelength is best absorbed by water; dental plaque bacteria have exceptionally high water content (80 to 90 percent). CO₂ laser light is absorbed by the water inside bacteria, vaporizing it, and thus reducing bacterial load at the surgical site.

Figure 3 demonstrates excessive caudal stomatitis tissue excised using a CO₂ laser set to 10 W in the continuous wave mode with a 0.25-mm spot size tip.

■ For moderate caudal stomatitis, the CO₂ settings are 4 to 6 W continuous wave using a ceramic 0.25-mm spot-size tip or a wide ablation nozzle (**Figure 4-D**) to raster the inflamed caudal oral cavity tissues at the time of the initial surgery. After rastering the inflamed caudal oral cavity areas, we remove the ablated tissue and char with a chlorhexidine-soaked gauze sponge, and then repeat the rastering two more times.

Figures 4-A, 4-B, 4-C, 4-D and **4-E** show a FCGS case in a 4-year-old domestic short-haired cat. In **Figure 4-A**, the affected site is shown preoperatively.

First, all the mandibular and maxillary teeth were extracted (**Figures 4-B and 4-C**). Then the Aesculight laser in the continuous wave mode and fitted with the wide ablation nozzle was used to partially ablate the inflamed caudal oral cavity tissues (**Figure 4-D**). **Figure 4-E** shows the cured cat four months after surgery.

■ Laser treatments often are repeated monthly for three months and then quarterly, if needed.

For example, **Figure 5-A** shows a 6-year-old domestic short-haired cat with FCGS. The caudal aspect of the oral cavity was markedly inflamed (**Figure 5-B**). A recheck one month after surgery revealed the presence



Figure 1. Diffuse inflammation with minimal involvement of the caudal oral cavity

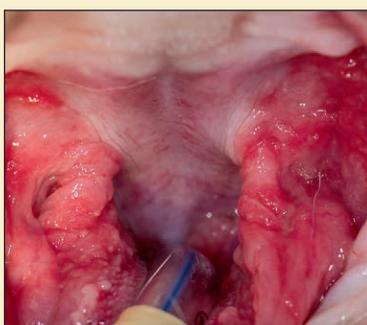


Figure 2. Marked caudal oral cavity stomatitis



Figure 3. Excessive caudal stomatitis tissue excised using the Aesculight CO₂ laser.

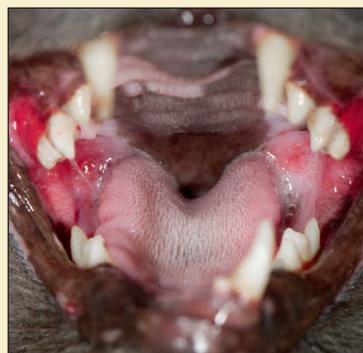


Figure 4-A. Preoperative view of a 4-year-old domestic short-haired cat with FCGS



Figure 4-B. Surgical site with all the mandibular teeth extracted



Figure 4-C. Surgical site with all the maxillary teeth extracted



Figure 4-D. An Aesculight laser was used to partially ablate the inflamed tissues. The wide ablation nozzle can be seen.



Figure 4-E. Four months post-op, the patient has no signs of FCGS.

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of moderate FCGS in the caudal oral cavity (Figure 5-C). The inflamed area was rastered in the 6 W continuous wave mode using a 0.4-mm ceramic tip (Figure 5-D). Two months after the second laser treatment, only minimal inflammation was still present (Figure 5-E). Six months after the second surgery, the patient was completely cured (Figure 5-F).

We have not found diode lasers to be usable in this fashion to care for the inflamed caudal oral cavity. We have used therapy lasers in the care of stomatitis, not to actively remove tissue, but to decrease postoperative swelling and patient pain.

In cases where oropharyngeal inflammation persists for months despite extractions and laser rastering caudal to the canines, extraction of all remaining teeth and root fragments is indicated.

If lesions still persist and the patient has been affected for months to years, the condition is termed refractory stomatitis. In these cases, prednisolone given orally every two to three days generally is effective to decrease inflammation and allows the cat to live a relatively pain-free, functional life. ●

Dr. Jan Bellows is board certified by the American Board of Veterinary Practitioners (canine and feline) and by the American Veterinary Dentistry College. He is past president of AVDC and the Veterinary Dental Forum, and current president of the Foundation for Veterinary Dentistry.



Figure 5-A. FCGS in a 6-year-old domestic short-haired cat (pre-op view)

Figure 5-B. Markedly inflamed caudal aspect of the oral cavity

Figure 5-C. At one month post-op, signs of moderate FCGS were present in the caudal oral cavity.



Figure 5-D. The inflamed area was rastered with the laser at 6 W (continuous wave mode) using a 0.25-mm spot-size ceramic tip.



Figure 5-E. Two months after the second laser treatment, minimal inflammation is noted.



Figure 5-F. Six months after the second laser treatment, no signs of FCGS are present.

RECOMMENDED READING

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This Education Center article was underwritten by Aesculight of Woodinville, Wash., the manufacturer of the only American-made CO₂ laser.

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