

Gingivostomatitis

Case Summary

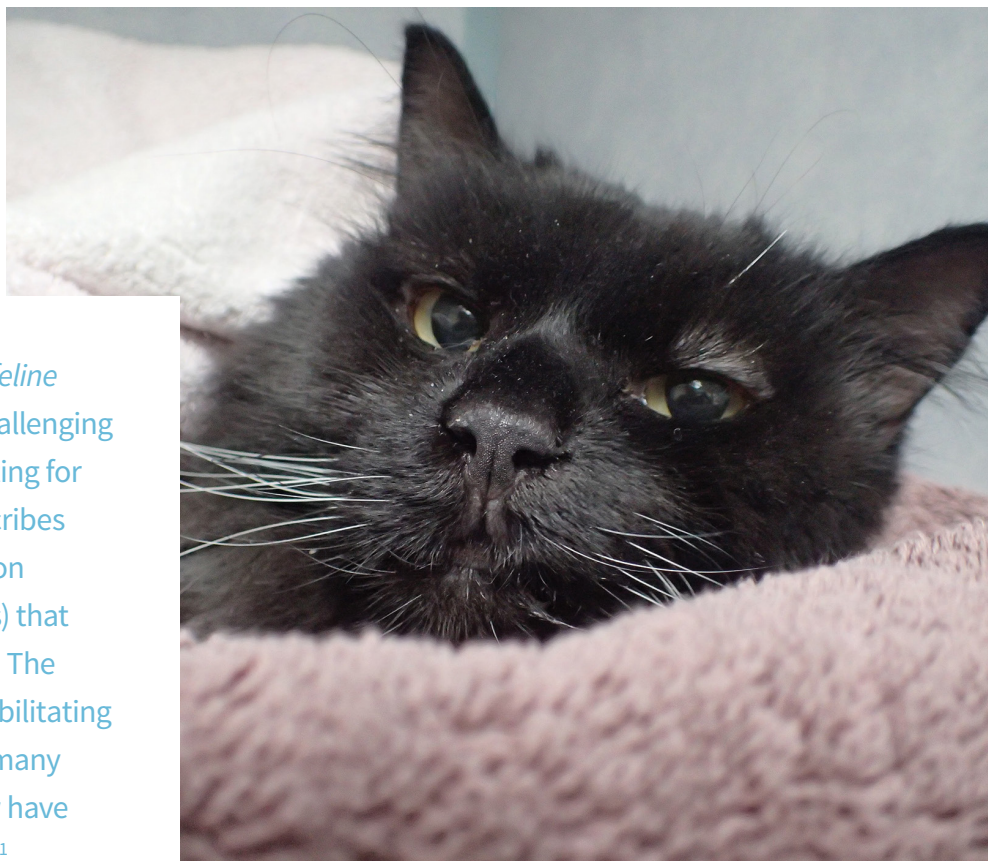
Donald E. Beebe, DVM, DAVDC

Apex Dog and Cat Dentistry
Englewood, Colorado

Stomatitis, more accurately called *feline chronic gingivostomatitis*, can be challenging for the veterinary team and frustrating for the client. Clinically, stomatitis describes widespread severe oral inflammation (beyond gingivitis and periodontitis) that may also extend into deeper tissue. The exact cause of this progressively debilitating disease is unknown, and although many therapies have been described, few have shown reliable, repeatable success.¹

Benny, a 4-year-old domestic longhair cat, was presented to Apex Dog and Cat Dentistry with chronic oral pain and inflammation. He was refractory to initial treatments but responded to a combination of traditional and novel therapies.

Benny's referring veterinarian had tentatively diagnosed stomatitis and tried multiple medical approaches, including repeated antibiotics, dental cleanings under anesthesia,



Benny, a 4-year-old domestic longhair, was presented with chronic oral pain and inflammation. All images courtesy of Apex Dog and Cat Dentistry.

analgesics, and methylprednisolone acetate injections (ie, Depo-Medrol). Benny's clinical signs always quickly returned, however, and the majority of his teeth caudal to the canines were eventually extracted, leaving only the mandibular 4th premolars. Biopsies of the oral mucosa showed diffuse lymphoplasmacytic inflammatory infiltrate. Benny improved immediately following surgery, but the improvement lasted only 2 weeks.

Benny's referring veterinarian had tentatively diagnosed stomatitis and tried multiple medical approaches.

Treatment Plan

Benny was presented to the dentistry referral center 6 weeks after surgery. His clinical signs had worsened and were consistent with the working diagnosis of gingivostomatitis: decreased appetite, weight loss, poor grooming habits, depressed demeanor, and lower activity levels. Alveolar mucositis was identified at all his remaining teeth, with radiating redness and bilateral ulceration to the adjacent alveolar mucosae, vestibules, and caudal areas lateral to the palatoglossal folds (see **Figure 1**).

Differential diagnoses included severe periodontitis, tooth resorption, immune-mediated disease, and neoplasia (eg, squamous cell carcinoma, epitheliotropic lymphoma).

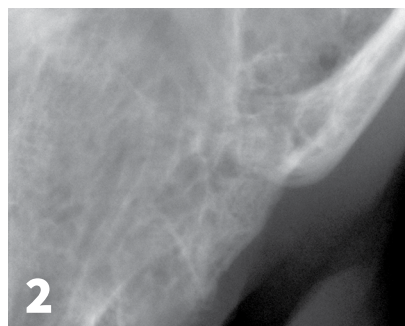
Full-mouth extractions offer the most predictable successful outcome for cats with gingivostomatitis, although extraction of the premolars and molars may offer a good outcome

when inflammation is limited to the caudal portion of the mouth.²⁻⁴ In Benny's case, 2 mandibular premolars had not been removed and the continual inflammation had progressed rostrally to the canines and incisors, so extraction of his remaining teeth was recommended. To improve the odds for a successful response, feline recombinant omega interferon (Virbagen Omega) was added to his treatment protocol. Interferon is thought to initiate a cytokine cascade when it contacts the mucosal cells, resulting in an immunomodulatory effect over a long period of time.⁵⁻⁹

Benny received preoperative buprenorphine and clindamycin and was anesthetized with sevoflurane. Buprenorphine was added to the traditional bupivacaine regional block in all 4 quadrants to extend the analgesia time.^{10,11} Radiography was used to rule out retained roots from previous surgeries and periodontitis, which may contribute to ongoing inflammation. Based on previous results and the symmetric inflammatory typical gingivostomatitis pattern, repeat biopsies were not performed.



1 Diffuse gingivitis and alveolar mucositis



2 Dental radiograph demonstrating the removal of all tooth structures

Novel Therapy

Apex Dog and Cat Dentistry has had success with the following extralabel protocol, used for Benny, for treating gingivostomatitis:

- Before anesthesia recovery, feline omega interferon 5 MU* (Virbagen Omega) was diluted with 0.9% saline into a 5-mL volume and administered via submucosal injection in 0.1 mL to 0.3 mL amounts throughout the inflamed tissues.
- The patient also received a sustained-release cephalosporin (Convenia) SC injection, transmucosal buprenorphine PO for 7 days, a tapering course of oral meloxicam, and topical 1-tetradecanol (TDC capsules).
- An additional 5 MU of omega interferon (Virbagen Omega) was diluted in 100 mL saline to 50,000 U/mL divided into 10 vials of 10 mL each and dispensed with instructions to freeze the unused portion and keep the active vial refrigerated.
- One mL (50,000 U) was also prescribed orally once daily to alternating sides of the mouth for 100 days.

*MU = million Units

Treatment Strategies for Oral Inflammatory Disease

MEDICAL MANAGEMENT

Medical management is aimed at plaque control and modulation of the inflammatory and immune response.

- Antibiotics administered long-term (ie, 6-8 weeks) or continuously may result in a decrease in oral inflammation and pain; however, inflammation usually recurs when antibiotics are discontinued, and long-term use is generally not recommended.¹
- Steroid treatment often results in significant improvement of oral inflammation, pain, and appetite; however, side effects with long-term use are problematic and effectiveness is lost with chronic use.^{1,12}
- Success with cyclosporine used as a single agent or combined with steroids has been reported,¹³ but close monitoring of blood levels is required. Because this disease is particularly painful, veterinarians should try to find medications that

can be administered as a transdermal gel to the pinnae.

ADVANCED OPTIONS

TDC capsules and Virbagen Omega, which modulate local inflammation, may contribute to a successful outcome.¹⁴⁻¹⁶

- TDC (ie, 1-tetradecanol, esterified fatty acid complex, cetylated fatty acid complex) is a monounsaturated fatty acid applied topically to inflamed oral tissue; the fatty acids suppress proinflammatory cytokines.¹⁷
- Virbagen Omega is a feline recombinant omega interferon. Interferons are naturally produced in the body that help regulate the body's immune system and have been shown to decrease inflammation and proliferation.⁹ Virbagen Omega is not commercially available in North America but is widely used in many

European countries. Although Virbagen Omega is not FDA-approved in the United States, a small quantity can be legally imported from an exporting pharmacist for personal pet use. Virbagen Omega and/or TDC capsule use can decrease inflammation and pain and should be strongly considered before, during, or following full-mouth extractions.

- Laser therapy is most often performed alongside or following extraction therapy. Intermittent laser ablation therapy (ie, every 2-6 months, as needed) can also decrease oral inflammation, bacteria, and pain.^{1,18}
- Cyclosporine treatment should be considered for cases refractory to surgery and Virbagen Omega.¹³
- Following relapse, rescue options include administration of an extended feline omega interferon course, adjunct laser ablation treatments, or immunomodulatory medications (eg, cyclosporine).^{1,13,18}



The patient at his 10-week postsurgical examination showing resolution of oral inflammation

Benny's remaining teeth were surgically extracted with quadrant flaps elevated, tooth structure completely removed and confirmed radiographically (see **Figure 2**), emptied alveoli debrided and lavaged, gingival edges freshened, and the flap closed without

tension with a resorbable monofilament suture. Following the surgery, Apex Dog and Cat Dentistry's nontraditional therapy was instituted (see **Novel Therapy**).

Conclusion

At his 10-week postsurgical examination, Benny showed dramatic improvement with no remaining inflammation at the edentulous (ie, toothless) sites and only scant injection at the caudal mucosa (see **Figure 3**). The client reported he was eating and drinking normally, grooming appropriately, and playing with housemates for the first time in

more than a year. Benny's stomatitis remained in remission after completing the 100-day Virbagen Omega course, and he was still in remission one year posttreatment.

References

- Lyon KF. Gingivostomatitis. In: Holmstrom SE, ed. *Vet Clin North Am Small Anim Pract*. 2005; 35(4):891-911.
- Hennet P. Chronic gingivostomatitis in cats: long-term follow-up of 30 cases treated by dental extractions. *J Vet Dent*. 1997;14(1):15-21.
- Bellei E, Dalla F, Masetti L, Pisoni L, Joechler M. Surgical therapy in chronic feline gingivostomatitis (FCGS). *Vet Res Commun*. 2008;32(Suppl 1):S231-S234.

Continued on page 63

Team Perspective

**Mary L. Berg, RVT,
RLATG, VTS (Dentistry)**

Beyond the Crown Veterinary Education
Lawrence, Kansas

The veterinarian is responsible for diagnosing gingivostomatitis; however, a veterinary nurse should be trained to recognize the disease signs. A thorough history and conscious oral examination help point the nurse or other team members toward the disease. Note that a conscious oral examination may be limited because of the patient's pain.

Team members should follow these steps:

- Ask clients about changes in the patient's behavior, particularly those associated with the mouth. Clinical signs include food dropping, growling or crying while eating, a lack of grooming, or severe halitosis. Cats with severe

cases may also display pawing at the mouth, crying when yawning, excessive drooling, and/or blood-tinged saliva. Some cats may change temperament and become aggressive or reclusive.

- Be aware that gingivostomatitis often traumatizes clients because their pet is in intense pain and because the treatment typically recommended (ie, extensive or full-mouth dental extractions) is expensive. Team members must be considerate, patient, and empathetic and should not pass judgment.
- Sit with the client, review the surgical protocol, and explain how the patient's pain and inflammation will be managed to help make the client more comfortable with the surgery recommendation and its cost. Offer clients all treatment options and explain that although oral surgery may be aggressive and expensive, it has the best chance for success for relieving pain and may even be the most cost-effective long-term option.
- Many clients may be concerned about such extensive oral surgery and the cat's ability to eat without teeth. Be prepared to assure them their pet will be happier, more comfortable, and likely pain-free. Share a story and photos of a patient treated successfully.
- Be familiar with the costs involved and the practice payment options available. When offering a treatment plan, do not show the total cost to the client at first to allow him or her to focus on the treatment rather than the expense.

TEAM TAKEAWAYS:



Veterinarians: Chronic gingivostomatitis can be refractory to many treatment options, including full-mouth extractions. Several novel treatment options are available for challenging cases.

Nursing Team: Full-mouth extractions can seem extreme to many clients; careful communication can allay fears and help clients provide their cat the necessary treatment.

Client Care Team: This chronic, painful condition can be very frustrating and overwhelming for pet owners to manage.

Training the team using role-play can put members at ease and provide helpful strategies and tips so that presenting treatment plans to clients already overwhelmed with the diagnosis and treatment options is less stressful. Role-play also helps ensure the team understands the need for surgery, the procedure, and follow-up care.

Confident team members help assure clients their pet is in good hands with an educated, compassionate veterinary team. ■

See handout

GINGIVOSTOMATITIS: TEAM MEMBER-CLIENT SCRIPT,
at veterinaryteambrief.com/gingivostomatitis-team-client-script