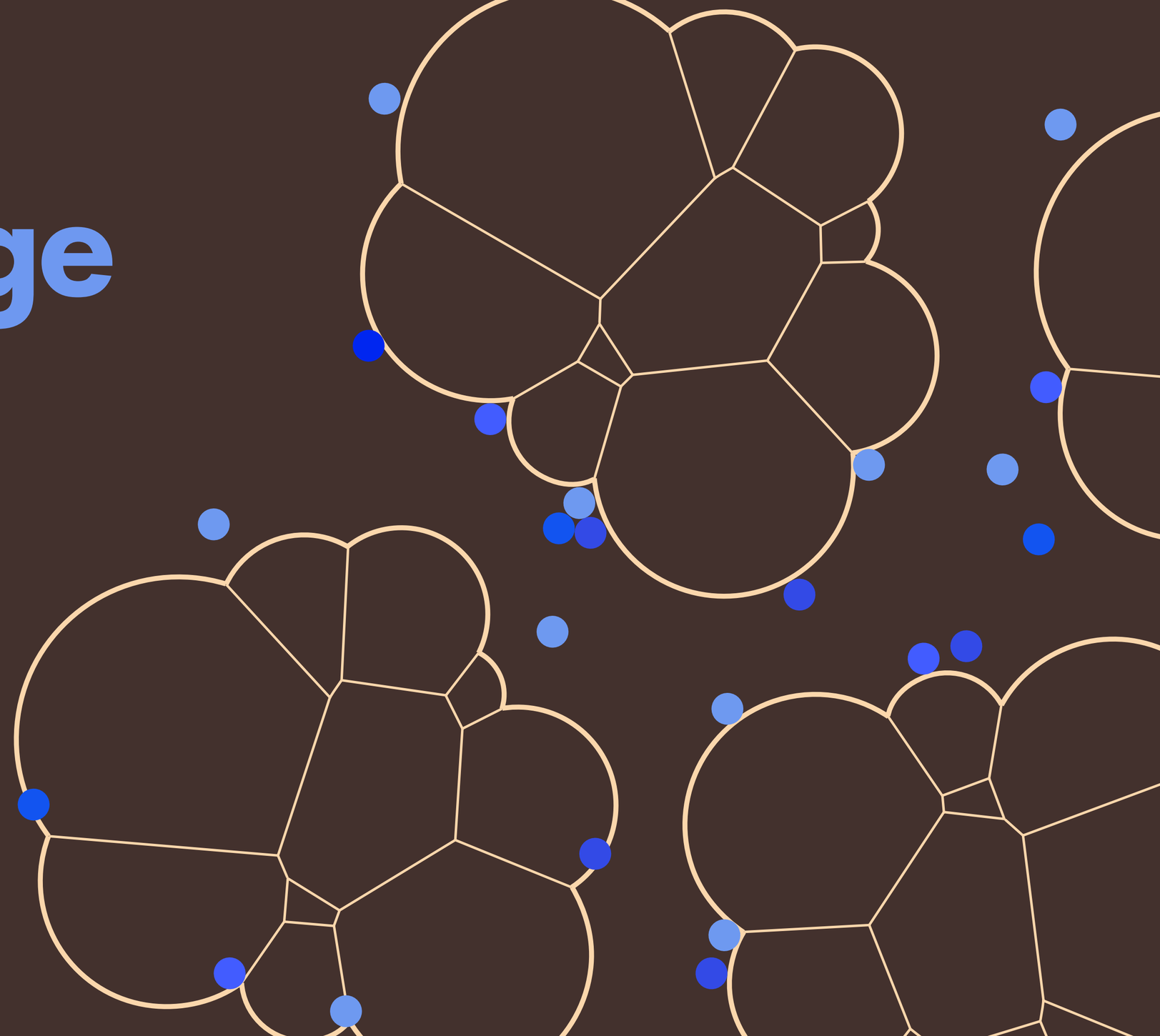
BioChange

Veterinary dental product line, based on a patented technology

biochange.life



CellFoam™

One platform.
Universal tissue scaffold.
Multi-organs repair.
Scalable. Affordable.

Empowering nature to do what it does best

BioChange is harnessing the body's natural homeostasis capability during recovery from injury, disease, trauma or aging. Our platform technology is CellFoam™, a foam scaffold designed to reconnect cells in a three-dimensional environment that facilitates complex synchronal tissue repair. This cutting-edge technology has proven to be safe and effective in long-term animal studies. It is currently commercialized for veterinary use and is on its way to its first clinical approval in humans, focused on the treatment of periodontitis. Near future applications include products for the aesthetic and neurology market.

Protein based foam scaffold inspired by embryonic ECM (Extra Cellular Matrix)

BioChange

BioChange veterinary dental products

Robust hemostatic powder for moderate to severe bleeding control

A biodegradable foam scaffold, designed to support periodontal tissue repair in dogs

A scaffold for filling and augmentation of periodontal pockets, following closed root planing, in dogs

ReGum™ Vet

A foam scaffold, designed to support periodontal tissue repair surgical procedure

BioChange

What is ReGum™ Vet?

A foam scaffold for advanced periodontitis in dogs

ReGum™ Vet is a biodegradable foam scaffold, designed to support periodontal tissue repair in dogs. **ReGum™ Vet** targets dental and maxillofacial diseases, which are the most common clinical problems in small animals in veterinary practice.

ReGum™ Vet can help preserve the teeth, even when extraction is seen as the only option.

BioChange

ReGum™ Vet

ReGum™ Vet supports:

- Filling and stabilizing periodontal defects
- Bone and soft tissue repair
- Gradual resorption and replacement by new tissue during healing

ReGum™ Vet is suitable for use in:

- Socket preservation
- Bone and furcation restoration
- Mandibular fracture healing
- Periodontal pockets and alveolar augmentation after extraction

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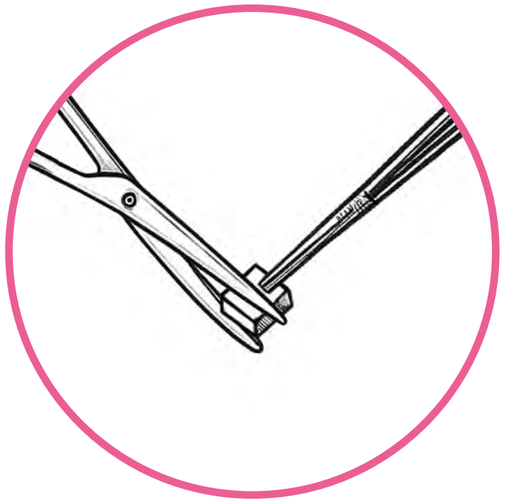
ReGum™ Vet

Easy application

1 Wet* ReGum™ Vet to reconstitute elasticity



2 Trim ReGum™ Vet to fit the surgical site

3 After debriment place ReGum™ Vet in the surgical site

4 Close the surgical site

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ReGum™ Vet

Veterinarians share their experience

Dr. Jen Mathis, DVM

DAVDC Board Certified Veterinary Dentist and Oral Surgeon

ReGum™ Vet is the first potential therapy to restore bone line. Many practices assume that having dental radiography will lead to saving more teeth, but often it results in discovering more disease and extracting more teeth. This is where **ReGum™ Vet** makes a difference – it enables us to preserve more teeth than we could before.

Dr. Ana Nemec, DVM

PhD, Dipl. AVDC, Dipl. EVDC, Assist. prof., Primary investigator of the clinical study

We optimized this innovative product to best serve our canine patients and colleague veterinarians. Also, with our clinical research team we later scientifically proved that the addition of the **ReGum™ Vet** is superior to standard open periodontal therapy alone in periodontal tissue repair in dogs with naturally occurring periodontitis.

BioChange

Medical device for periodontal tissue repair launches in US market

Kristen Coppock Crossley, MA

PRN Pharmacal is marketing and distributing ReGum™ Vet by prescription in the US. The product has been available internationally since 2023.

A prescription medical device for promoting natural periodontal tissue repair in dogs has been launched in the US by PRN Pharmacal. The device, ReGum™ Vet, is a scaffold that fills and supports canine periodontal defects, providing a framework for tissue repair.[1]

The product was developed using patented CellFoam™ technology by BioChange in Israel. The biodegradable 3D foam is comprised of enzymatically cross-linked gelatin that promotes periodontal tissue repair.[1]

"For the first time, practitioners have a targeted product for dogs with naturally occurring periodontitis that is easy to apply and actively supports the body's own tissue-repair process," Amanda Crouthamel, DVM, technical services veterinarian for PRN, said in a news release.[1] "We're excited to partner with veterinary teams nationwide to raise the standard of care for advanced periodontal disease in dogs."

ReGum™ Vet is designed to be placed into the periodontal defect to allow space for healthy tissue growth. According to PRN Pharmacal, the device is safe, nontoxic, and biodegradable.[1]

A study of 9 canine patients with periodontitis and 22 affected teeth, published in Frontiers in Veterinary Science, found ReGum™ Vet "significantly improved" outcomes when added to open periodontal therapy. These investigators indicated that "the use of this implant can be recommended in addition to open periodontal therapy in dogs with advanced periodontitis, considering the careful selection of the patients and teeth that will truly benefit from the treatment."[2]

The device was first made available in 2023 in Israel and has subsequently been made available in South Korea and in Europe. It is available in both a conic shape for deep holes and a flat square shape to treat side pockets.[1]

ReGum™ Vet can be integrated into canine periodontitis procedures, requiring only a few steps for veterinarians, according to PRN Pharmacal. The steps to apply the device are as follows, with additional instructions available with the product[1]:

1. Dip the 3D dry foam in sterile saline or sterile lactated Ringer solution to reconstitute elasticity or use dry.
2. Trim ReGum™ Vet to fit the surgical site.
3. Insert the product into the surgical site and position as needed.
4. Close the surgical site with sutures.

"Veterinarians implementing dental radiography often find they are extracting more teeth than before the utilization of intraoral radiography," Jennifer Mathis, DVM, CVPP, DAVDC, owner of Family Pet Veterinary Center and Animal Dentistry Referral Services, both in West Des Moines and Norwalk, Iowa, said in the release.[1] "ReGum™ Vet can be used to change the outcome. We can stabilize and reverse specific sites of hidden bone loss when there is still gum tissue present, enabling us to preserve more teeth."

Studies have shown that 80% to 90% of dogs older than 3 years have a component of periodontal disease, making it one of the most common health issues in veterinary medicine. Smaller breeds have a higher risk for periodontal disease, and the rate of incidence increases with age.[3]

According to PRN Pharmacal, signs of the disease range from reversible gingivitis to progressive stages requiring more aggressive treatment. Left untreated, periodontal disease can affect other areas of the body and increase a dog's risk of cardiovascular, kidney and liver diseases.[1]

References

1. PRN Pharmacal launches ReGum Vet to US veterinarians. News release. PRN Pharmacal. July 22, 2025.
2. Gawor JP, Strøm P, Nemec A. Treatment of naturally occurring periodontitis in dogs with a new bio-absorbable regenerative matrix. Front Vet Sci. June 20, 2022. Accessed August 5, 2025. https://www.frontiersin.org/journals/veterinary-science/articles/10.3389/fvets.2022.916171/full
3. Periodontal disease. Cornell University College of Veterinary Medicine, Richard P. Riney Canine Health Center. Accessed August 5, 2025. https://www.vet.cornell.edu/departments-centers-and-institutes/riney-canine-health-center/health-topics/canine-health-information/periodontal-disease#:~:text=Periodontal%20disease%20is%20one%20of%20the%20most,breeds%2C%20and%20the%20incidence%20increases%20with%20age.

Case 1

Treating Periodontal Disease with Regum™ Vet

Dr. Jen Mathis, DVM
DAVDC Board Certified Veterinary Dentist and Oral Surgeon

Case Summary:

Guided Tissue Regeneration (GTR) is a technique used to promote the regeneration of bone and soft tissue, enabling the replacement of infrabony periodontal pockets (sites of vertical bone loss). GTR involves the removal of irritants — such as calculus, bacteria, granulation tissue, and debris —to encourage the regrowth of the periodontal ligament (PDL), bone, and cementum. This is achieved by excluding gingival tissues through a barrier membrane.
The process begins with thorough cleaning of the infrabony pocket using hand curettes and, if needed, specialized ultrasonic curette. A bone graft and barrier membrane are then placed into the pocket, followed by a secure closure of the gingival tissue. The goal of GTR is to restore structural integrity in areas affected by vertical bone loss. In canine patients, GTR is most commonly performed on the palatal aspects of the maxillary canine teeth and the mesial or distal aspects of the mandibular first molars.

Patient Information:

Ziggy, a 10-year-old male neutered Maltese, was presented for a wellness examination with Associate DVM Dr. Elizabeth Schilling at Family Pet Veterinary Center and Animal Dentistry Referral Services. Oral examination findings included notable halitosis and a calculus index of 3/4, indicating a need for comprehensive dental care.
Dr. Schilling recommended a COHAT (Comprehensive Oral Health Assessment and Treatment, also known as a dental prophylaxis) to thoroughly address oral health concerns. Additionally, CBCT (Cone Beam Computed Tomography) was advised to provide detailed, 3D radiographic imaging of all tooth structures across multiple planes. This procedure will be conducted under the supervision of Dr. Jennifer Mathis, DAVDC (Diplomate of the American Veterinary Dental College), ensuring expert assessment and treatment.

Dental Exam Findings:

Horizontal Bone Loss: Excessive gingiva and pocketing at the distal aspect of tooth 409.

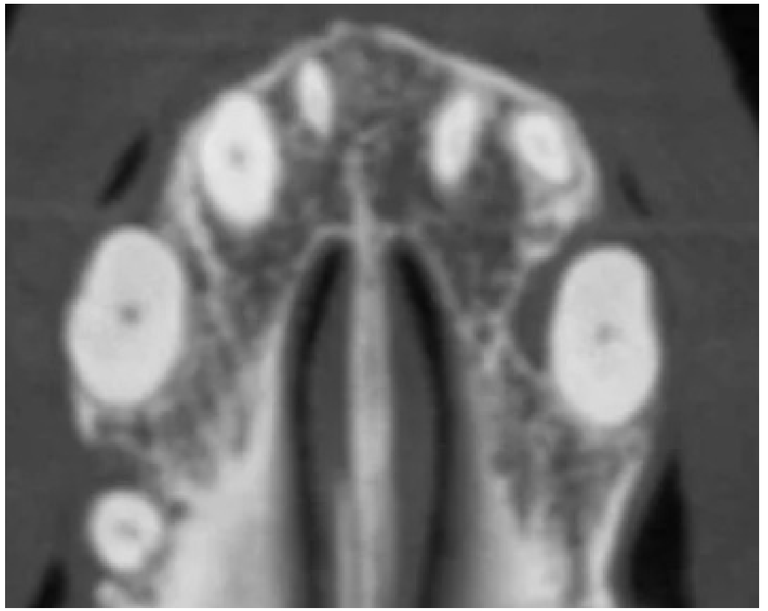
Increased Palatal Probing Depths: Teeth 104 and 204 show increased probing depths with bleeding on probing; infrabony palatal pocket noted at tooth 204 > 104.

Periodontal Disease Staging:

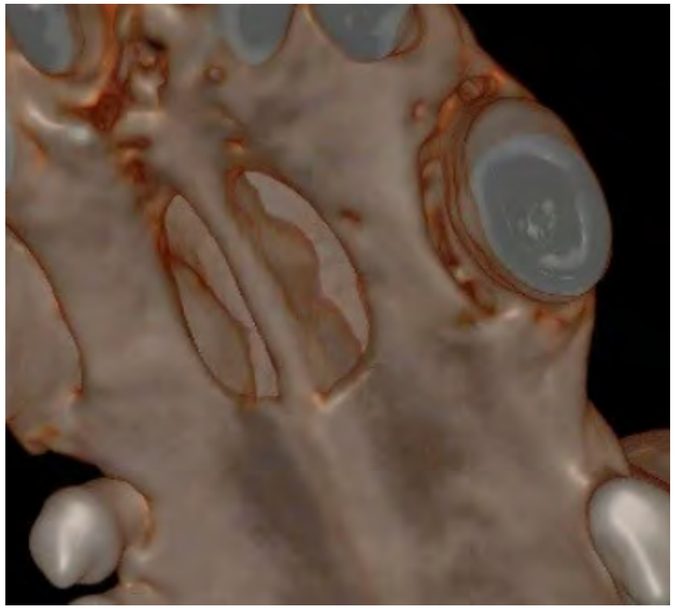
Stage 2 (PD2): Tooth 108.
Stage 4 (PD4): Teeth 102, 105, 106, 109, 110, 206, 208, 302, and 402.
Non-Vital Teeth (T/NV): Teeth 203, 302, and 402.

Possible Condensing Osteitis: Tooth 309 — recommend continuing to monitor with a follow-up radiographic evaluation in 6-12 months.

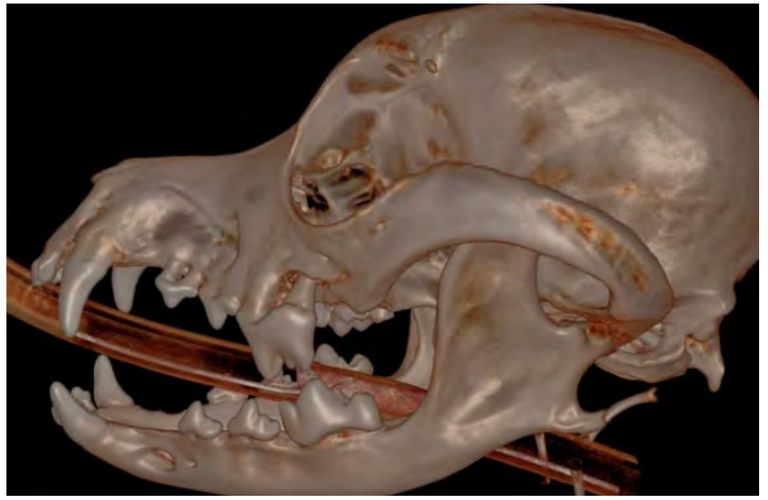
CT Image of Infrabony Pocket 204



3D Hard Tissue Infrabony Pocket 204



Hard Tissue Overview (left and right)



Procedures Performed:

Pocket Depths Pre-Treatment: Tooth 104 presented with a 5mm palatal pocket; tooth 204 had a 6mm palatal pocket and an 8mm distal pocket.

RP/O Procedure:

An envelope flap was created, and curettage was performed to remove granulation tissue and debris.
The site was thoroughly cleaned using hand instruments. A ReGum™ Vet square was placed in the infrabony pocket to serve as a barrier. Closure was achieved with 5-0 Monomend MT suture on a taper needle, ensuring a secure gingival collar.

Extractions:

Teeth 102, 203, 302, 402, 105-106, 109-110, 206, and 208 were extracted due to advanced periodontal disease.

Closed Root Planing (RP/C) on Tooth 108:

Closed root planing has the potential to result in a 1-2mm reduction in probing depth within 1-3 months, rendering an active periodontal pocket inactive as long as the original probing depth was less than 5mm. Pocket depths greater than 5mm need to be treated by opening a flap. The recurrence of active periodontal disease depends on pocket depth, at-home dental care, and the frequency of professional anesthetic dental cleanings.

Before COHAT (left and right)

Before Guided Tissue Regeneration 204

Before Guided Tissue Regeneration 104

Cleaned Infrabony Pocket During GTR 204

ReGum Vet Application 204

After GTR of 104 and 204

Follow-Up Information:

Ziggy returned to Family Pet Veterinary Centers/Animal Dentistry Referral Services for follow-up care under the direction of Dr. Jennifer Mathis, DAVDC, four months after his initial Guided Tissue Regeneration (GTR) procedure. During his anesthetic dental procedure, CBCT follow-up imaging was performed, and probing revealed promising results: tooth 104 exhibited a pocket of 1-2mm, while tooth 204 measured at 2mm—both well within normal limits!

These sites were cleaned once again during the visit, and we recommended scheduling his next anesthetic dental procedure for cleaning and imaging in 9 months. Ziggy continues to be a fantastic patient, and we are thrilled with his progress!

We look forward to welcoming Ziggy back to Family Pet Veterinary Centers and Animal Dentistry Referral Services for continued care. Thank you for trusting us with his dental health!

Case 2

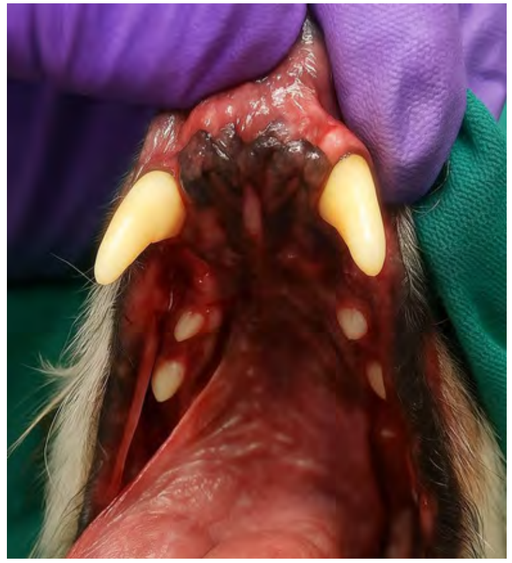
Enhancing Periodontal Attachment in Canines with ReGum™ Vet

Dr. Ana Nemec, DVM
PhD, Dipl. AVDC, Dipl. EVDC, Assist. prof. Primary investigatorof the clinical study

A typical case where ReGum™ Vet can support in preservation of bone ridge, thus minimizing gum recession and Canine root exposure that will lead to their extraction

ReGum Vet conic version

ReGumTM Vet was used to promote periodontal attachment gain on the mesial side of both canine teeth.

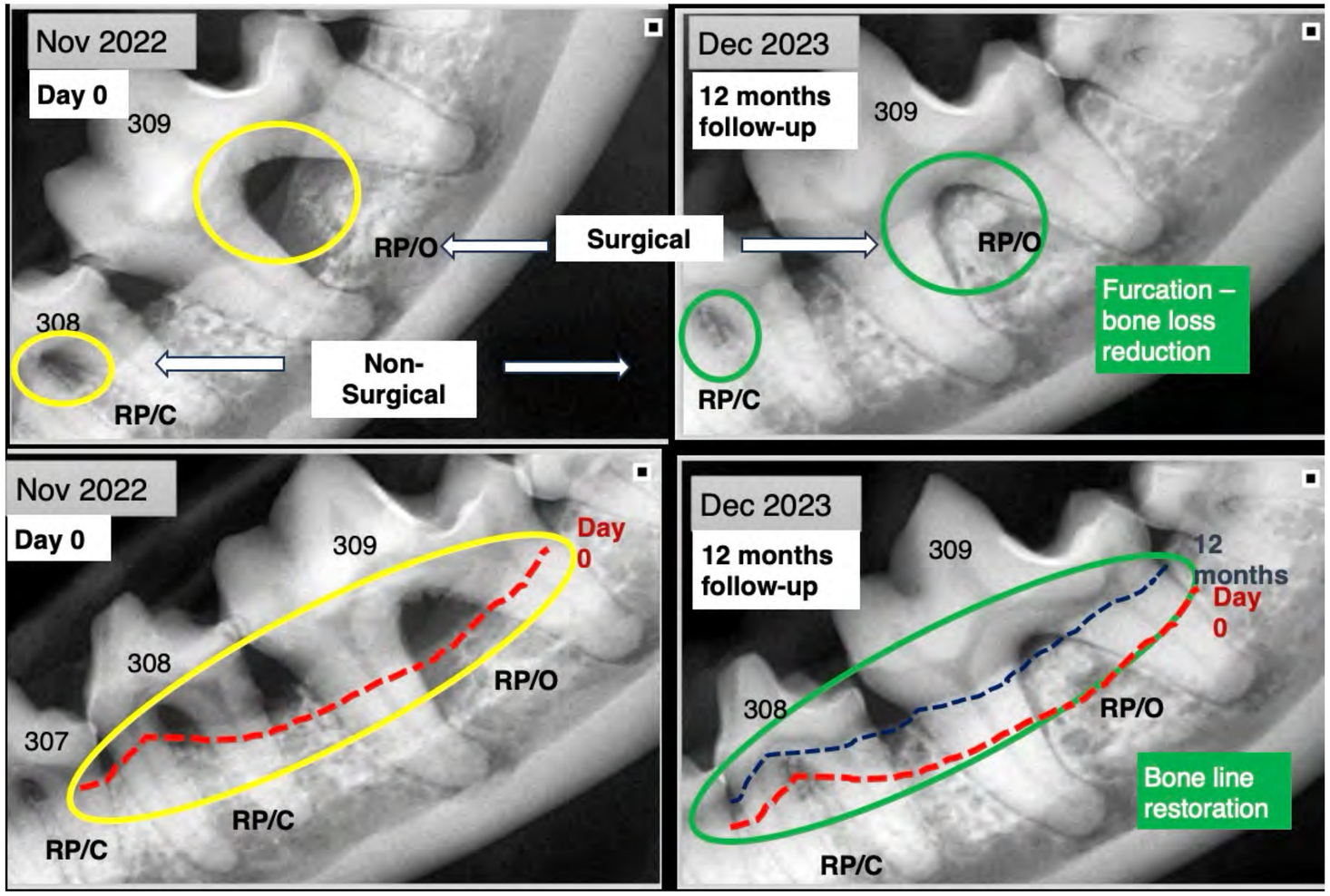


ReGum Vet scaffolddoesn’t appear on X-ray

Case 3

Pomeranian 8Y old with advance periodontitis

Dr. Andrea Poblete, DVM, Chile



Nov 2022 [Day 0]:

First dental session in its life
Extraction of almost all teeth on the right side.
Owner asked to save as many teeth as possible (Traditional treatment is extraction for teeth with >50% bone loss)

RP/O 309 + ReGumVet - Surgical (open cleaning and root planning)

RP/C 307, 308 + ReGumVet - **Non Surgical**

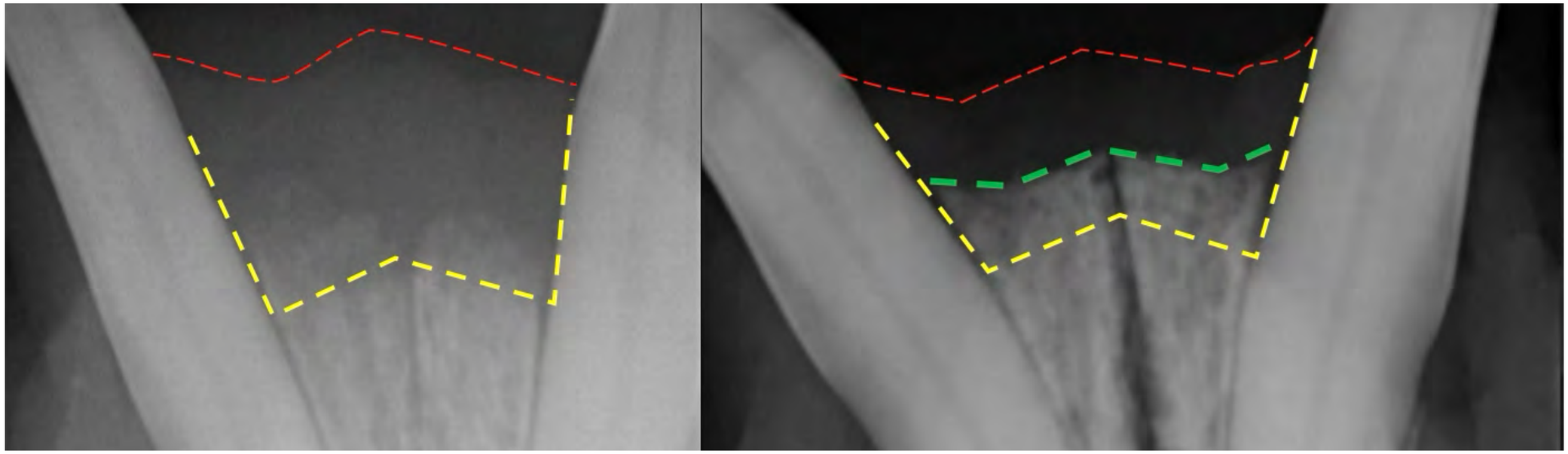
Dec 2023 [12M follow-up] :

Owner reported that **no home care done**
Bone line and furcation restored.

Case 4

Socket preservation for bone restoration minimizing gum recession after incisors extraction

Kristin Scott, DVM, Dipl. AVDC



Before [day0] June-2025

After [5 months] Nov-2025

All incisors extracted.
ReGum™ Vet cones placed in extraction sites of 303 & 403 with No membrane.

Red – Gingiva
Green – New Bone
Yellow – Bone at extraction day

CROWN

Case 5

Socket preservation to support mandibula restoration after canine tooth extraction

Kristin Scott, DVM
Dipl. AVDC

4-3-25
Rostral MN before extraction of 401- 403, after extraction
of 301-302, 304.
303 missing prior to this date.

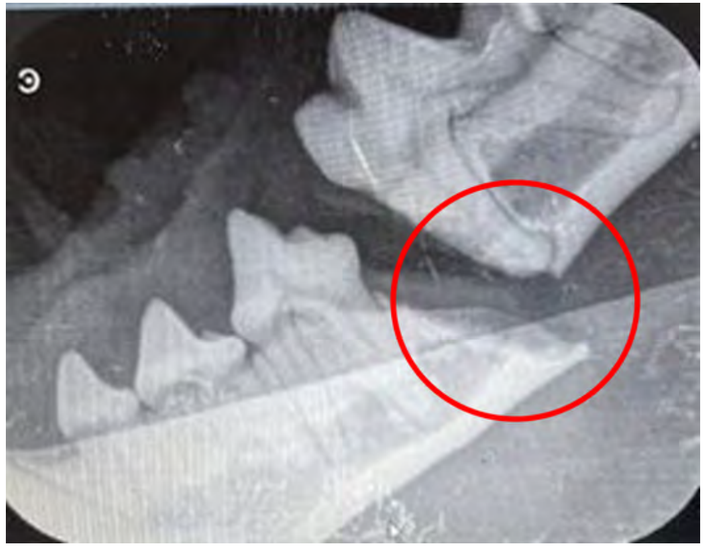
9-18-25
I usually see more bone loss of the rostral MN after extractions of incisors.
There is increased maintenance of the alveolar bone height and maintained or improved bone density of all extraction sites.

CROWN

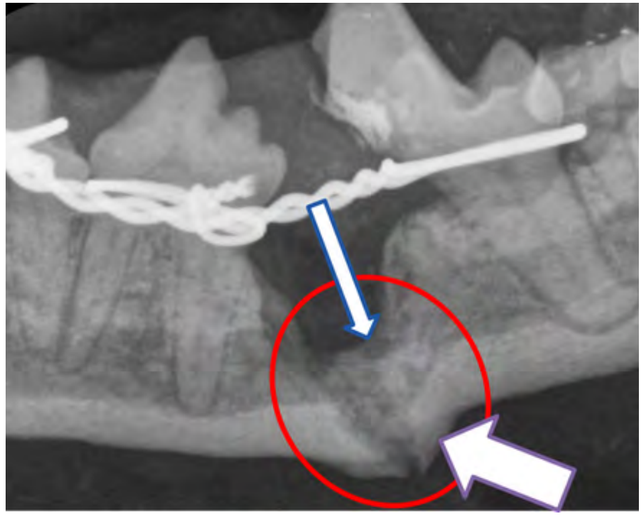
Case 6

Mandibular fracture healing

Yoav Bar Am, DVM **DR. Yael Bar Giora, DVM**
Dip. AVDC, Dip. EVDC

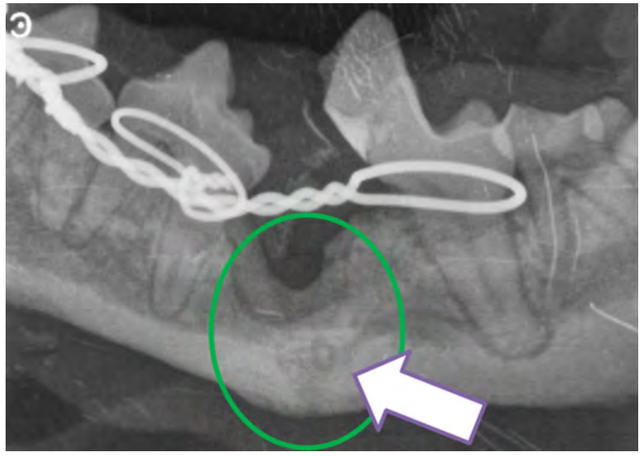


Baseline Pathology: A severe, displaced mandibular fracture in a Shih Tzu. The location and instability pose a significant challenge for natural healing, requiring immediate stabilization.



9 Weeks Post-Wiring:

Failure of Conventional Management: This image reveals the frustration of reliance on mechanical stabilization alone. Despite 9 weeks of fixation with interdental wiring, the fracture site (indicated by arrows) remains a confirmed non-union. The bone has failed to respond to the stability provided, leaving a persistent, non-healing void. This represents 9 weeks of lost time and a patient still in recovery. ReGum™ Vet was inserted to support the bone restoration.



8 Weeks Post-ReGum™ Vet Application [17 weeks post trauma]

The green circle highlights a fully bridged osseous union. ReGum™ Vet successfully supported the healing of the mandibular bone.

Case 7

Bone line restoration with ReGum™ Vet

Dr. Jen Mathis, DVM
DAVDC Board Certified Veterinary Dentist and Oral Surgeon

Case Summary & Patient Information:

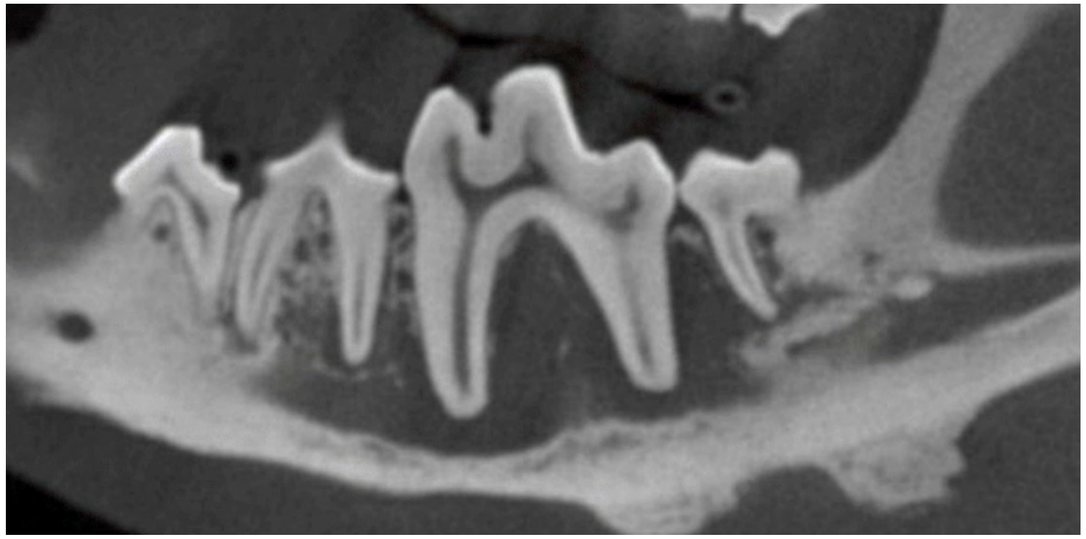
Daisy, a 2.5-year-old spayed female Old English Sheepdog/Poodle mix, presented with a primary complaint of a lump under her left mandible. This lump was first noted by the referring veterinarian (RDVM) on January 30, 2024. According to the owner, the lump had been present for a couple of weeks and had changed in size. During the exam with the RDVM, Daisy showed discomfort when the lump was palpated.

The owner also mentioned that Daisy had a history of kennel chewing and had experienced trauma from kenneling in 2022-2023, including an avulsed premolar. Due to the complexity of the case, Daisy was referred to Dr. Jennifer Mathis, DAVDC, at Animal Dentistry Referral Services for a cone-beam computed tomography (CBCT) scan and further treatment.

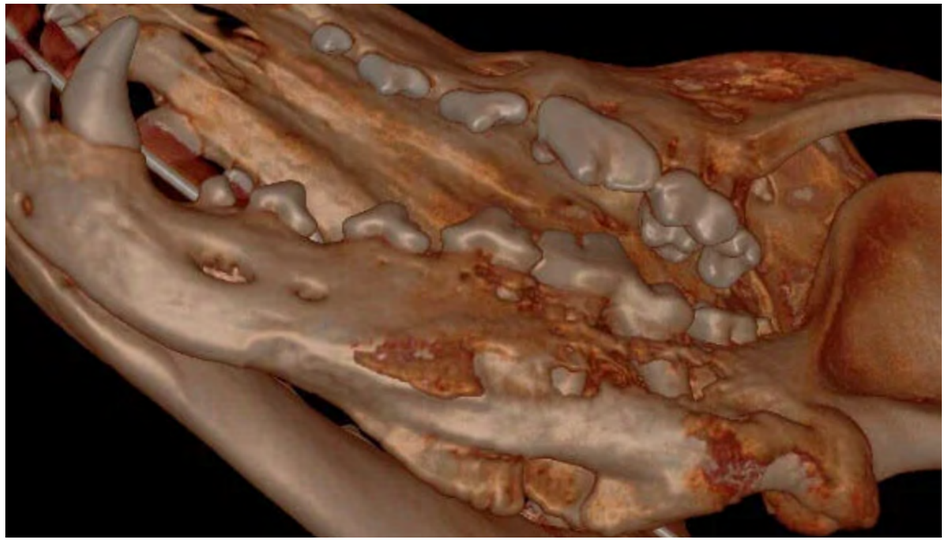
Dental Exam Findings:

A firm swelling was detected on the left mandibular region. While the exact cause is unclear, it is suspected that trauma occurring between 10 and 24 months of age led to the death of the lower molar. Another possible cause is Mandibular Periostitis Ossificans (MPO), a developmental condition seen in large breed dogs. In MPO cases, the swelling typically resolves on its own. However, Daisy's condition, if MPO, would extend beyond the usual timeline, making trauma the more likely cause. The internal structure of the affected tooth showed disease at the root tips, leading to infection. This infection had spread into the mandibular canal and affected nearby teeth. Although there was reactive bony proliferation on the ventral aspect, significant bone loss was also noted, which posed a risk for a pathological mandibular fracture.

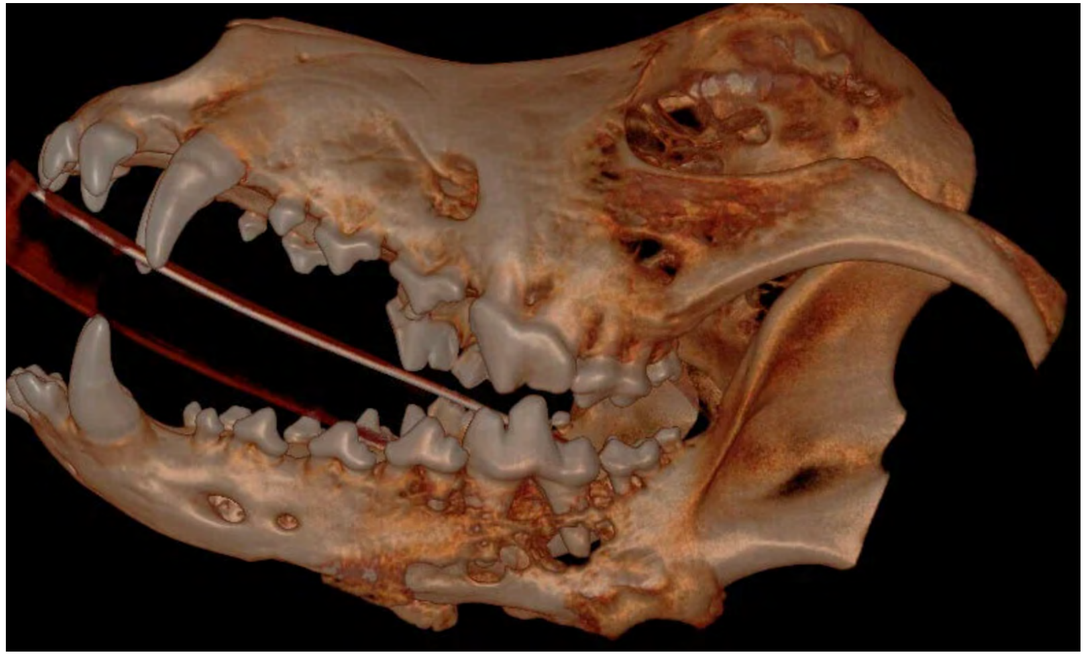
CT Cross Section of Disease



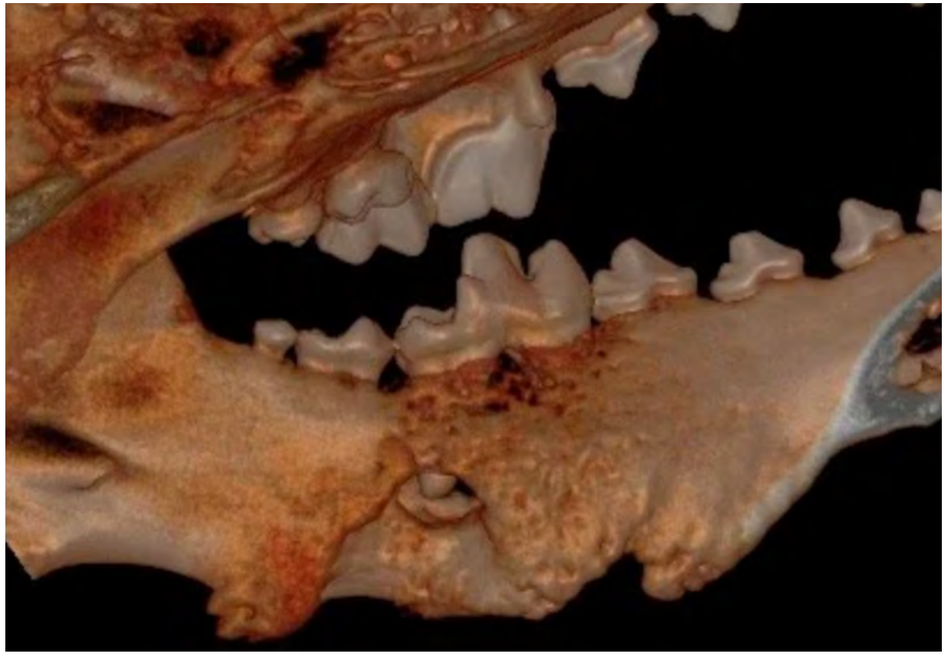
CT Cross Section of Disease



3D Hard Tissue Overview (left side)



3D Hard Tissue Overview (left side)



Procedures Performed:

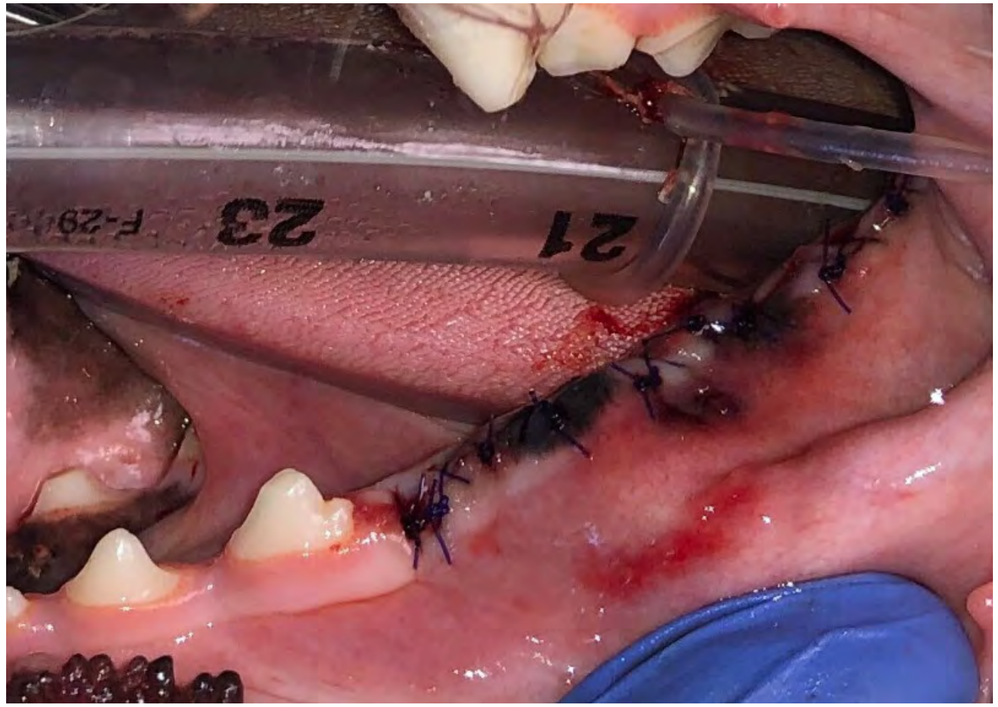
The diseased teeth were surgically extracted, and the site was cleaned down to healthy bone. A bone scaffold and membrane (ReGum Vet "mushroom" or "plug") were placed to aid in mandibular healing. ReGum™ Vet is composed of a cross-linked gelatin foam matrix. It fills the defect and supports the tissue. One of the benefits of ReGum™ Vet is that it requires no suturing.

After thorough cleaning, the ReGum™ Vet is placed and allowed to absorb blood, functioning like a sponge. Once it has soaked adequately, the surgical site is sutured closed. Pro tip: Prepare the surgical site for closure before placing ReGum to avoid dislodging it during flap trimming.

In Daisy's case, a culture sample was taken prior to cleaning. The results identified Pasteurella species, Moraxella species, and Staphylococcus pseudintermedius. Daisy was administered and dispensed Cefovecin and Clindamycin on the day of the procedure. Fortunately, the bacteria identified were susceptible to the empirically selected antibiotics.

CT Cross Section of Disease

3D Hard Tissue Overview (left side)

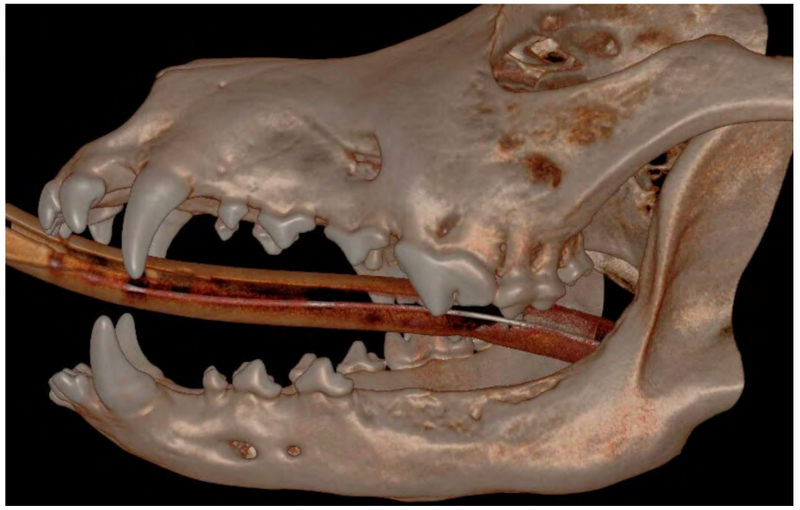


Follow-Up Information:

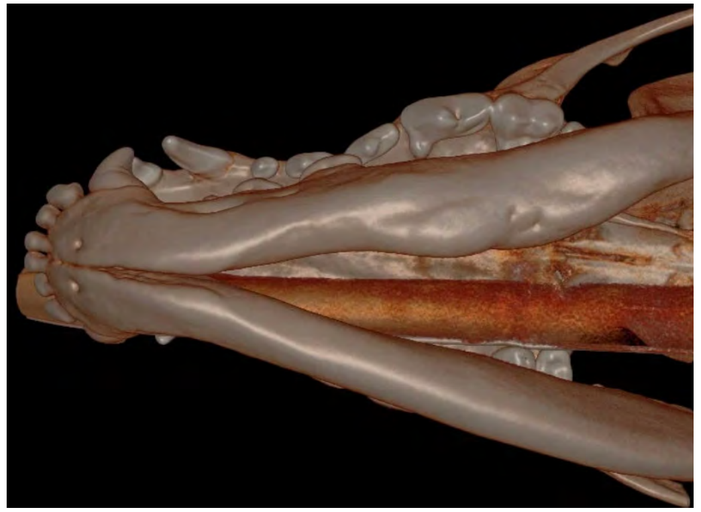
We had the pleasure of seeing Daisy for her four-month follow-up after the ReGum™ Vet application, and her progress has been remarkable! The bone graft site has healed well, with smooth margins overall, though there are still some minor defects continuing to heal. Importantly, there is no evidence of any further cystic formation.

Daisy's owners are thrilled with both her appearance and the success of her treatment so far. What's especially exciting is the amount of bone seen at this stage — significantly more than anticipated, as radiographic mineralization typically takes around six months to become noticeable.
Daisy's next imaging is scheduled with Animal Dentistry Referral Services for March 2025, and we're eager to see her continued recovery.

4-Month Post Operative Images:



Hard Tissue Overview (left side)

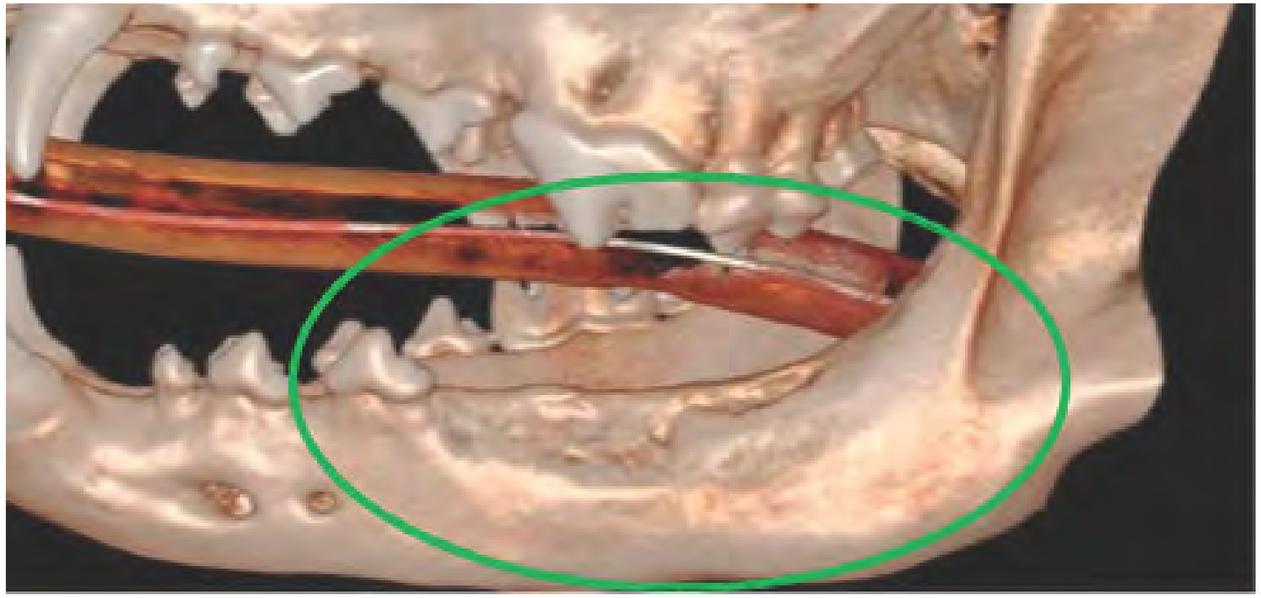


3D Hard Tissue x(ventral aspect)

CT Cross section of the prior disease site, sagittal plane, now with significant healing

Before

After



4 months follow up: 2.5Y old English Sheepdog/Poodle mix DVM Jennifer Mathis

BioChange

Try our products

Learn more about MicroFoam™

We let nature do it’s magic

biochange.life
Info@biochange.life
VP Sales & Marketing – Hilit@biochange.life