

# CLINICAL UPDATE

## Administration of R-Gel Delivered Antibiotics For Treatment of Canine Oronasal Fistula Infection

Attending Veterinarian:

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**Signalment**

Canine,  
2-year old MC Standard Poodle

### Presenting Problem

Canine patient presented initially for halitosis and sneezing. Upon examination an oronasal fistula was found on his right maxilla between the 2nd incisor and canine tooth. [He was missing the 3rd incisor.] There was malalignment of his right mandibular canine tooth causing pressure necrosis with a secondary oronasal fistula. [Fig 2.]



Fig 2.

There was a foul odor in the mouth and mucopurulent discharge from his right nostril when sneezing (several times daily). He was treated with several weeks of Clavamox and the oronasal fistula did seem to granulate a small amount. However, the visible oronasal fistula, foul odor, sneezing, and mucopurulent right nasal discharge did not resolve.

### Diagnosis

Prior to any indicated extraction, two dental radiographs were performed. [Fig 1.] One of the fistula site and the second of the rostral mandible including the mandibular canine teeth. The bony defect of the maxilla was visible on the maxillary dental radiographs, with no other abnormality detected (other than missing his right 3rd incisor).

#### Initial Surgical Procedure

Owner was given option of having a crown reduction on the mandibular right canine tooth, but due to financial constraints opted for extraction of the mandibular right canine tooth and repair of the right maxillary oronasal fistula. While under anesthesia the right mandibular canine tooth was extracted and the oronasal fistula was debrided, lavaged with sterile saline and dilute chlorhexadine flush, and an overlying gingival flap was created to seal the fistula hole. Patient was sent home with an additional two weeks of Clavamox and a week of Rimadyl for pain.

#### 2-Week Post Op Recheck

Patient seemed to be doing fairly well, but there was still an odor and continued sneezing with mucopurulent blood tinged nasal discharge from his right nostril. A general oral exam appeared to be normal and gingival flaps (both from oronasal fistula repair and from right mandibular canine extraction site) were healed. Clavamox antibiotics were continued.

#### 4-Week Post Op Recheck

Animal returned for another recheck once again presenting nasal discharge and a foul odor. Upon nasal examination, a yellowish / green plaque-like mucus was noted in the area of the oronasal fistula on the ventral aspect of his right nasal cavity. This material was debrided and lavaged with sterile saline. Patient was then given a different antibiotic [Clindamycin] to see if would better resolve the infection.

#### 6-Week Post Op Recheck

Dog exhibiting the same symptoms and another nasal exam indicated no improvement with the mucopurulent plaque-like material now returned in the ventral aspect of his right nostril. At that time, with consultation of Dr. William Krug (a board certified veterinary dentist), the gingival flap was re-opened to remove all the debris from the bony defect in the right maxilla. The edges of the fistula were debrided with a high speed dental drill and again lavaged. The flap was routinely closed once again and patient was continued on oral Clindamycin.

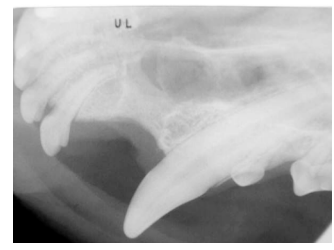
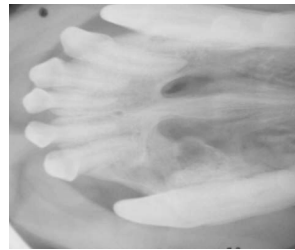


Fig 1.

Oronasal fistula site and rostral mandible, including mandibular canine teeth. Bony defect of the maxilla obvious on maxillary dental radiographs.

### Course of Treatment

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#### Course of Treatment [cont.]

##### 8-Week Post Op Recheck

Following the previous visit in which the gingival flap was re-opened, some improvement was noted during the first week post op. Shortly after, the dog then started exhibiting the same signs as previously noted. Comprehensive examination under sedation was performed, revealing that while the gingival flap had completely healed, an abundant yellowish plaque-like mucus was noted on the ventral aspect of the patient's right nasal cavity.

During the last visit, Drs. Reed and Krug discussed finding a treatment modality that could be used to pack the bony defect and enhance healing. However, since the hole also communicated with the animal's nasal cavity, it required a product that would not fall out or cause irritation. R-Gel Antibiotic was then recommended, based on the unique characteristics of its chemical matrix– to gel *in situ* and deliver a timed-release dose of appropriate antibiotics.

Dr. Reed decided to inject R-Gel-delivered antibiotics at the site of infection, rather than have to re-open the gingival flap for a third time. Injecting the viscous R-Gel Antibiotic, would provide a sustained-release local delivery of both amikacin and clindamycin over a 7 to 9 day period. Additionally, since this injectable therapy would rapidly gel *in situ*, it provided the added benefit of effectively filling-in the defect and not be easily dislodged.



Fig 3.



Fig 4.

At this time, 2.5 cc of R-Gel was injected [Fig 3] into the bony defect of the animal's right maxilla, through the healed gingival flap [Fig 4]. The owner was instructed to stop the oral antibiotics, since they were not having any impact on healing and R-Gel was actively providing a controlled-release dose of antibiotics for precise local penetration.

##### 2 Weeks Following Initial R-Gel Administration

No odor, minimal sneezing without any evidence of mucous or blood (only mild clear discharge). Patient sedated and right nostril examined with an otoscope, revealing only a very small area of mucus (2-3 mm in size) and granulation tissue, where there had been a hole on the ventral aspect of the right nostril over the previous oral nasal fistula site.

During the past two weeks the dog had not received any oral antibiotics from the clinician or owner. A second injection of R-Gel was placed through the gingival flap to assure elimination of the infection.

#### Case Outcome

Follow up at 1 week, 3 weeks and 6 weeks after the second R-Gel injection reported that the dog was doing very well. The infection has cleared, the odor and nasal discharge are gone and the animal appears to be fully recovered.



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