

**HOLES IN THE MOUTH:****Cleft lips, cleft palates and oronasal fistulas****Synopsis-- Anatomy and the Disease**

The mouth is an extraordinarily tough structure, all things being equal. It is brought down by both genes (those dealt or those altered) and teeth, and only occasionally by man-made things like bullets and electricity.

The various clefts—lips, hard palate, soft palate—are results of genetic defects bred into a pup/kit (most commonly the brachiocephalic breeds) or teratogenic *in utero* changes to the genome or fetal development. The terminology used to describe these abnormalities are: primary cleft (lip, harelip) and secondary cleft (hard palate or soft palate). The defects are most commonly characterized by an association with midline, since these are most commonly a failure of fetal fusion at midline; and clefts by definition are first recognized in youngsters. Many primary clefts continue significantly into secondary clefts altering the rostral hard palate.

Oronasal fistulas are considered a result of trauma, either external such as bullets, electrocution, radiation treatment or bite wounds; or internal from teeth rotting inside out! These tend to be more troublesome for repair, presumably given the addition tissue-health abnormalities associated with inflammation and disease. The hallmark dental oronasal fistula is the geriatric dachshund with rotten upper canine teeth.

**Surgical Overview:**

The primary feature of repair is a robust two-layer coverage/closure of the defects—nostril, lip or palates. This usually means recruiting tissue from both the internal/nose side of the region and the external/mouth side of the region. Invariably, a single layer closure is insignificant to cover/close a cleft of any substantive width.

The **indications & rationale** for surgical treatment are:

- Visible facial defects can alter intraspecies communication, creating difficulties with polite social pet behavior.
- Oral communication with the nasal passage creates problem with food impaction, aspiration of liquids (pneumonitis, pneumonia), chronic rhinitis (nasal discharge, sneezing, epistaxis).
- An incomplete caudal soft palate predisposes to aspiration of liquids and solids and retrograde nasal contamination/rhinitis.

**Other options** for treatment (besides surgery) are:

- If limited to primary cleft and minimally cosmetically disruptive, no treatment.
- If secondary cleft is rostral and small enough with no clinical signs, no treatment.
- If oronasal fistula is small enough with no clinical signs, no treatment.
- Oral hygiene rinses may improve halitosis and minor food impactions.

**Supportive/ancillary** options with surgical treatment are:

- Oral hygiene rinses are helpful perioperatively to minimize bacterial loads and the accumulation of foreign material.
- 

The **perioperative experience** for pet and owner includes:



- Prepare the household by removing any toys that can be held in the pet's mouth (restriction in place for 6-8wks postop).
- Start rinsing mouth daily with an oral hygiene rinse from your veterinarian; continue use 2wks postop.
- Switch to a canned/soft food over a week or so (or plan to soak usual kibble/dry food postoperatively); continue soft food/soaked kibble 4-6wks postop.
- For the first week postop, expect bloody saliva and lots of licking and pawing at mouth.
- Oral pain medications and antibiotics will be needed postop for 2wks; plan for soft treats/meatballs for delivery.
- Plan for an E-collar or equivalent device postop that prevents feet from pawing at mouth.

**Expectations** for outcome are:

- Most defects can be closed completely with one procedure; occasional large/extensive defects or repairs that have sustained self-trauma postop will need one to two additional procedures for completion.
- Chronic rhinitis signs may take weeks to months to resolve; adult patients with years of nasal contamination may not resolve their rhinitis signs completely.
- Oronasal fistulas resulting from radiation or electrocution may fail repeated closure attempts.
- Persistent small defects may be candidates for silicone plugs for semi-permanent treatment.

**Complications** that may arise with this procedure are:

- Dehiscence/failure of the repair is common enough to warrant discussion preoperatively.

What a surgeon needs prior to surgery:

- An ideal patient is a large as possible (older puppies, ~6mo) and without pulmonary disease (active pneumonia).
- Proper cosmetic expectations of owners for primary clefts (visible scar, not exact symmetry of nostrils/lip).

**General considerations and complications** for all surgery/anesthesia procedures are:

- *Difficult and/or painful anesthetic recovery (variable; may require additional medications or re-hospitalization)*
- *Incisional infections (rare, minor; usually require oral antibiotics)*
- *Incisional dehiscence (minor or major; may require surgical revision)*
- *Adverse anesthetic event (rare, major; may result in serious impairment or death)*

Proper owner expectations are important to a successful experience and patient outcomes. Please discuss this information with your clients while assisting them with decision-making for **primary and secondary cleft lip/palate**.

Lara Rasmussen, DVM, MS

Diplomate, American College of Veterinary Surgery

DIRECT VETERINARY SURGERY, LLC



(See additional materials at [www.directvetsurg.com](http://www.directvetsurg.com) for veterinary professionals and pet owners.)

