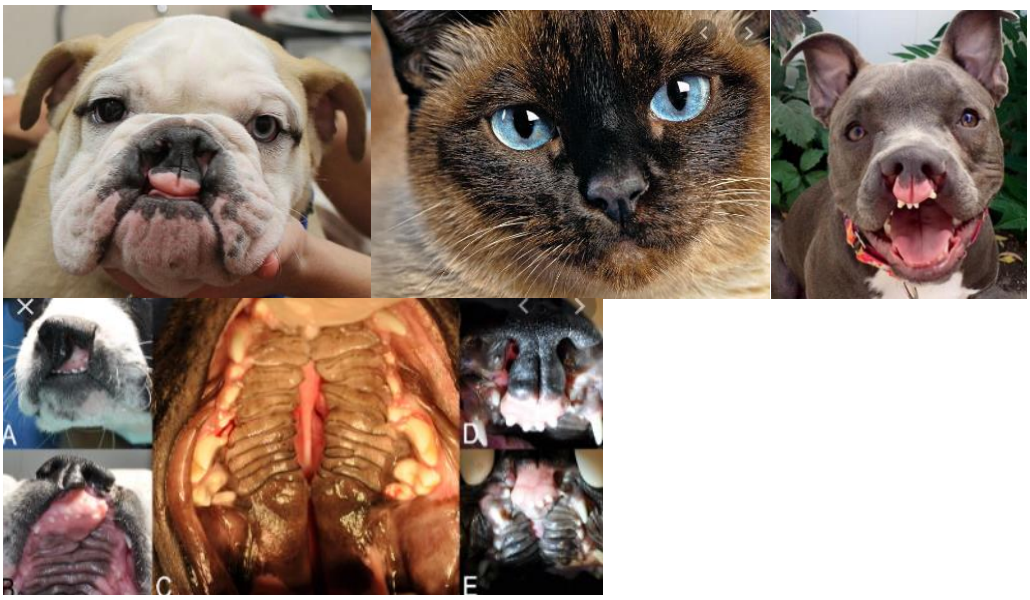
Cleft Palate

Associated Terms:
Oronasal fistula, Primary Cleft, Harelip, Cleft Lip, Secondary Cleft, Congenital Oronasal Fistula



OVERVIEW

A **cleft palate** is an **opening between the mouth & the nose** that happens when the tissues separating these two cavities do not grow together properly. This birth defect can occur in the lip (primary cleft palate, cleft lip or harelip) or along the roof of the mouth (secondary cleft palate). Within the mouth, the cleft or opening, can extend along the bony portion (hard palate), the flexible portion used in swallowing (soft palate) or both.

Purebred dogs & cats have a higher incidence of cleft palate & brachycephalic breeds, with their short stubby faces, are most commonly affected. Cleft palates may occur more commonly in Boston terriers, Pekingese, bulldogs, miniature schnauzers, beagles, cocker spaniels, dachshunds & Siamese cats. Although genetics is considered the main cause of this problem, nutritional deficiencies, viruses & poisons that affect the mother during pregnancy may also increase the risk of cleft palates.

HANDLING THOSE HOLES IN THE MOUTH: Cleft palate, cleft lip & oronasal fistula
Overview—"I don't understand what a cleft or fistula are; please help me understand the condition & the treatment."

In general, we call holes in the mouth that result from birth defects, "cleft lips" or "cleft palates". Those holes that result from tooth decay or external trauma (bullets, bite wounds, electric shock/cord chewing, radiation treatment for cancer) are called oronasal fistulas.

A cleft lip is most commonly seen as one nostril that doesn't meet-up or connect at the centerline & continues as a split in the upper lip below the nose; most also continue into the roof of the mouth called the "hard palate". Occasionally these splits in the roof of the mouth continue all the way back to the throat area to include the "soft palate". Since the roof of the mouth is also the floor of the nasal passage, a hole in the mouth leads right up into the nose.

The most common dental disease associated oronasal fistula is created by a very diseased upper canine tooth. The long roots of these large teeth extend into the thin bone of the floor of the nasal passage. When the socket of the canine tooth rots away from tooth disease, there is direct communication from the mouth to the nose through that diseased socket—an oronasal fistula is the result. Other large molar teeth can also create the same condition further back in the mouth.

Oronasal fistulas not created by tooth disease are a result of some type of external trauma that disrupts the roof of the mouth/floor of the nasal passage. The most unfortunate causes are gun shots to the face, bite wounds to the face & radiation treatment for mouth or nose cancer.

Treatment for all these holes in the mouth is most commonly surgery to reconstruct the defect with the natural mouth/nose/lip tissues bordering the defect. Occasionally a dog/cat will be a better candidate for a semi- permanent silicone plug to block the hole.

CLINICAL SIGNS & SYMPTOMS

Pets with primary cleft palates are obvious (Figure2).

- Teeth & gums of the upper jaw may be showing.
- One incorrectly shaped nostril.

Pets with secondary cleft palates (Figure 3) within the mouth may:

Sneeze & snort because food & saliva will pass into the nose.

- Have a "runny" nose after eating, or before or after nursing. It will become a constant drip if it becomes infected.
- Cough & gag when they drink water.
- Not grow well due to trouble eating
- Have trouble breathing & exercising because of fluid or infection in their noses.

Figure 2. Primary cleft palate or “harelip” in a ten-year-old Cocker spaniel. Dog only sneezed occasionally & owners were not bothered by its appearance, so they never had it corrected.

DIAGNOSTICS

- Oral examination: Cleft palate of the lip & the hard palate are easy to see. Most pets are anesthetized; however, to see the soft palate because it is so far back in the mouth.
- Chest x-rays to look for signs of pneumonia.

TREATMENT

- Small primary clefts of the lip & nostril rarely cause clinical problems, but they are unsightly & most pet owners prefer to have those corrected (Figures 4, 5, 6).
-  Figure 4. Primary cleft palate or "harelip" in a springer spaniel. The defect in this dog extended through the lip & edge of the nostril only.  Figure 5. When the cleft is pushed together, the lip & nostril look relatively normal.


Figure 6. The cleft in the nostril & lip have been repaired.

- Secondary cleft palates require surgical treatment to prevent long-term nasal & lung infections & to help your pet receive proper nutrition. (Figures 7, 8)

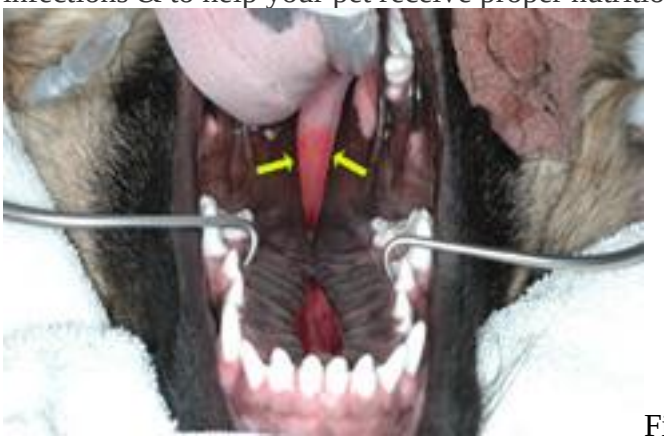

- Figure 7. The large gap (yellow arrows) in the soft palate is visible when the mouth is opened wide under anesthesia.


Figure 8. The cleft in the soft palate has been surgically closed. The cleft in the hard palate will be closed using specialized techniques with local tissue movement.

- The surgery is difficult on very young pets and, with growth, the cleft in hard palates may become smaller, so puppies & kittens are often fed with feeding tubes until they reach 3-4 months of age. Pet owners can learn how to pass a feeding tube at each meal, or their

primary care veterinarian can place a feeding tube through the side of the neck to easily feed blenderized diets.

"Why is this procedure being recommended for my pet?"
Direct communication between the mouth & the nose is disruptive to a healthy nose & lungs. Food (and other foreign materials like hair & plant material) will pass into the nasal passages (causing nasal infection); liquids can be breathed into the nasal passage from the mouth & pass directly into the trachea & lungs (causing pneumonia). From excessive sneezing to nose bleeds & snotty discharge to life threatening pneumonia, holes it the mouth are variably dangerous.
A cleft lip is a relatively benign cosmetic problem, but very commonly in dog-society, facial communication is difficult with a cleft. During greetings, clefts defects can be misinterpreted by approaching dogs & create negative behavioral interactions & difficulty socializing for youngsters.

"What options do I have to treat my pet's condition? (no treatment, conservative, medical & surgery treatments).
Any of the mouth holes that create bad breath & nasal discharge can be helped with oral hygiene rinses daily.
A minor cleft lip without significant extension into the mouth cavity can go without any treatment. More extensive cosmetic cleft lips can be reconstructed surgically.
Cleft palates & oronasal fistulas can be reconstructed surgically. The occasional small or difficult to reconstruct defects can be semi-permanently be closed with a silicone plug.

AFTERCARE & OUTCOME

Because the surgery is performed in young, underweight pets with breathing problems, anesthesia & surgery recovery can be risky. Many pets have swelling of the soft palate after the surgery, which can cause breathing problems or snoring, is usually resolve.

Restrictions following surgery usually are:

- Give antibiotics to pets with pneumonia or nasal infections.
- Leave e-collars on for 1-2 weeks to stop pets from rubbing their faces.
- Feed soft, blenderized foods by mouth or through a feeding tube for 2–4 weeks after surgery.
- Do not give hard food or toys for at least a month.

Postoperative complications can include:

- Partial surgical site failure (called dehiscence), or opening due to tension or the puppy/kitting chewing or pawing at their face
- Nasal discharge or sneezing
- Continued coughing & gagging due to a short soft palate

Prognosis is excellent for pets with small clefts. When more than half of the hard palate is affected, surgery is much more difficult & more complications are expected. Very large defects are closed with special dental appliances & tissue techniques.

Do not bred pets that are born with cleft palates, & their parents should not be bred if they are one of the predisposed breeds.

The greatest success rates are seen when the procedure is performed initially by an experienced veterinary surgeon.

“What post-operative complications do I need to know & understand when considering this surgery?”
Oral surgery will result in 1-2wks of bloody saliva & bad breath. Daily use of oral hygiene rinse is helpful during this early phase of healing to prevent excessive bacterial contamination & infection.
The mouth & nose are constantly in use (tongue, food, sniffing) & have a relatively high normal bacteria population; both of these create challenges to straight forward surgical tissue healing.
The breakdown of stitches & repair sites is common enough to plan for & something we actively try to prevent. Additional surgical “touch up” procedures may be needed to finalize a

reconstruction effort.
Some very large clefts or some oronasal fistulas caused by extensive infection, radiation or electrocution will have residual holes that are not repairable. Some of these will be small enough as to be insignificant & need no further attention beyond oral hygiene rinses; some may be helped with custom silicone plugs.

"Are there situations when the surgical outcome is not what we hoped it would be?"
The repair of the cleft lip/nose rarely results in a perfectly symmetric nose/lip; it will also result in some degree of scarring of the region. Proper cosmetic expectations are important when pursuing this correction.

"How is my pet's life & lifestyle likely to change after this procedure?
The problems of chronic nasal discharge, sneezing, bloody nose, nose-rubbing will be reduced dramatically or eliminated with reconstruction of cleft palates & oronasal fistulas. Chronic episodes of pneumonia will likely be eliminated.

"Are there things I can do to prepare myself, my home and/or my pet for this procedure?"
Prepare the household by removing any toys that can be held in the pet's mouth (restriction in place for 6-8wks post-OP).
Start rinsing mouth daily with an oral hygiene rinse from your veterinarian; continue use 2wks post-OP.
Switch to a canned/soft food over a week or so (or plan to soak usual kibble/dry food post-operatively); continue soft food/soaked kibble 4-6wks post-OP.
For the first week post-OP, expect bloody saliva; prepare the household against unwanted soiling of furniture, etc.
Oral pain medications & antibiotics will be needed post-OP for 2wks; plan for soft treats/meatballs for delivery.
Plan for an E-collar or equivalent device post-OP that prevents feet from pawing at mouth.

Outpatient surgery & anesthesia can be uncomfortable, painful, disorienting & frustrating experiences for animals; watching your pet work through the early post-operative period & recover from anesthesia & pain medications can be worrisome, scary & frustrating for pet owners. The vast majority of the time this period of difficulty is brief & your pet is actually more comfortable & secure at home with you. Sometimes it doesn't feel like that at two in the morning when your pet is anxious & not consolable & you are unsure of what to do. You always have the option of transporting your pet to a 24-hour veterinary facility post-operatively. If you do not want to have your pet home in the first few days post-operatively, please advise your primary care veterinary staff. They will provide contact information for a local 24-hour veterinary facility & help get an estimate for the ongoing care.

It is important that you have proper expectations about this procedure; your experience & you pet's outcome will benefit greatly. Please discuss this information with your veterinarian when working through the decision- making process regarding cleft lip, cleft palate or oronasal fistula. If you have any questions, please feel free to ask your veterinarian &/or veterinary surgeon.

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