

Sialocele/Ranula Surgery

SALIVARY MUCOCELE

Associated Terms:

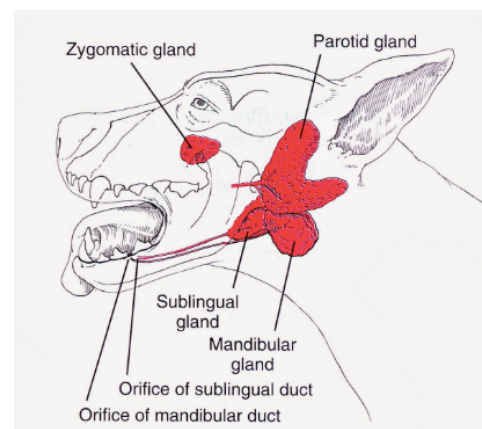
Sialocele, Mandibular Mucocele, Ranula, Cervical Mucocele, Sialadenectomy, Salivary or Honey Cyst, Pharyngeal Mucocele, Zygomatic Mucocele, Sublingual Mucocele

OVERVIEW

The salivary system includes a gland, a duct & an orifice in the mouth. Saliva is generated in the gland, travels down the duct & exits nicely in the mouth in response to stimuli. When a gland or duct is injured, either by trauma, inflammation, obstruction or tumor, saliva will leak into the surrounding tissues where it is a foreign substance. The body will respond with inflammation (red & white blood cells). The proteinaceous nature of the saliva makes it very slow to be removed, but the fluid nature will be resorbed over time. The result is a very inspissated, thick, red/cloudy visors fluid hanging out in an odd location.

The most common presentations are:

- 1) **CERVICAL MUCOCELE** salivary gland/duct injury with resultant saliva accumulation in the ventrolateral neck (bottom outside) region (**SALIVARY MUCOCELE/SIALOCELE**)
- 2) **SUBLINGUAL MUCOCELE** salivary gland/duct injury with resultant saliva accumulation laterally under the tongue (**RANULA**). Or a combo platter of both.
- 3) **PHARYNGEAL MUCOCELE** salivary gland/duct injury with resultant saliva accumulation is almost entirely within the throat (pharynx). Less common.
- 4) **ZYGOMATIC MUCOCELE** salivary gland/duct injury with resultant saliva accumulation is originating from the small zygomatic salivary glands which are located just below the eye. Very Rare.

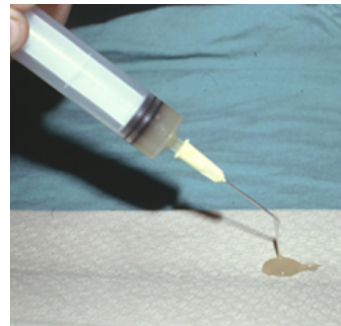


The cause of salivary mucoceles is rarely identified, although trauma such as from choke collars, bite wounds, or chewing on foreign materials is generally considered to be the most likely initiating event. As the saliva leaks from the torn salivary gland or duct, it accumulates in the tissue & initiates an intense inflammatory response. A connective tissue capsule gradually forms around the saliva to prevent it from migrating further.

This condition is almost exclusively seen in dogs & very rarely in cats. All breeds are susceptible but there seems to be an increased incidence in Poodles, German Shepherds, Dachshunds, & Australian Silky Terriers. There is no age predisposition & this condition may occur at any time.

SIGNS & SYMPTOMS

Generally the development of a cervical mucocele is seen as a gradually enlarging soft, painless, fluctuant mass in the upper cervical (neck) or intermandibular region. In most dogs & cats there are no problems associated with the development of the mass. If the mucocele is a sublingual mucocele (ranula), your pet may have some **difficulty eating** & may **develop bleeding from trauma** to the mucocele as he or she chews. A pharyngeal mucocele is generally totally undetectable until the oral cavity is examined with sedation. Pets with pharyngeal mucoceles may experience **respiratory distress** because the mass developing in the throat is beginning to obstruct the airway. This is a potentially very serious problem & treatment must be instituted rapidly because these pets may die from acute respiratory distress. **Difficulty swallowing** may be another sign that a pharyngeal mucocele is present.



DIAGNOSTICS

WHAT A SURGEON NEEDS PRIOR TO SURGERY:

- 1) Confirmation of Typical Cytology.
- 2) Identification of the cervical sialocele, sublingual radula or both.

Generally, the diagnosis of a salivary mucocele is fairly straightforward. Palpation of the salivary glands is normally easily accomplished & with the exception of the pharyngeal mucocele, the mucoceles are easily identified as a soft, fluctuant swelling that is non-painful. Tumors & abscesses may appear similar but are generally either firm or painful.

Occasionally cervical mucoceles migrate to the ventral midline over time, making it difficult to determine whether the problem involves the left or right sided glands. Examining the pets with sedation on their back often allows the mucocele to migrate to the affected side.

Laboratory abnormalities are generally NOT helpful in the diagnosis of salivary mucocele. If uncertainty exists about whether the mass is a mucocele or an abscess, a sterile aspiration of the fluid can be performed. Aspiration of a clear, yellowish or blood-tinged thick ropy fluid with a low cell count is consistent with saliva. An elevation of the white blood cell (WBC) count in the fluid may indicate an infection in the salivary gland (sialadenitis) or an abscess. Sometimes, special laboratory testing (staining) can help confirm the type of fluid if there is doubt.

Radiographs are rarely needed to diagnose salivary mucoceles; however, if neoplasia (cancer) is suspected x-rays of the thorax are indicated to look for metastasis.

TREATMENT

The only satisfactory treatment for a salivary mucocele is **removal of the salivary gland or glands** that are involved with the mucocele.

Continued **aspiration** of a mucocele will NOT permanently eliminate the problem. It will occasionally resolve the problem for weeks to several months, but most will recur. Aspiration also risks introducing bacteria into the mucocele, which can potentially cause an infection that will significantly increase the difficulty of successful surgical treatment.

Surgical removal of the mandibular & sublingual glands on the side of the mucocele is the normal surgical treatment. The glands are removed together because the duct of the mandibular gland travels through the sublingual gland & removal of one gland would unavoidably traumatize the other. The mandibular gland is closely associated with the large veins that join to form the jugular vein. Removal of the salivary glands requires careful dissection to the area of several critically important nerves.

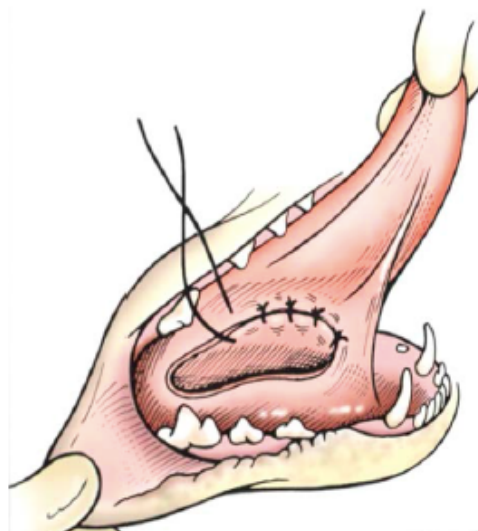
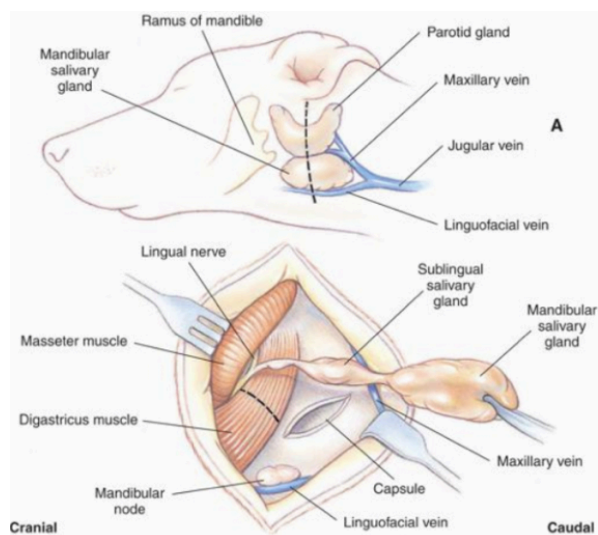
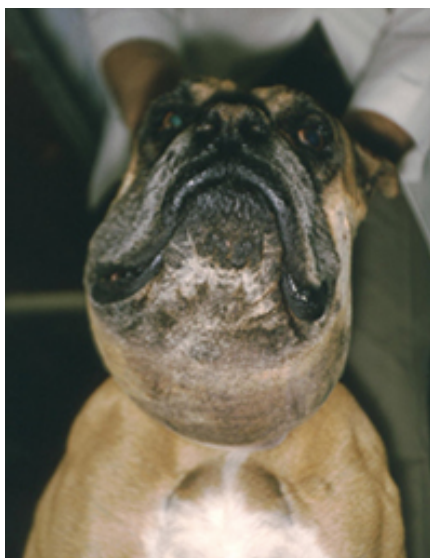
Sublingual mucoceles (ranulas) may be treated with **marsupialization** (in addition to removal of the mandibular & sublingual glands) to facilitate drainage into the oral cavity. Marsupialization is performed by excising an elliptical portion of sublingual mucosa overlying the mucocele & suturing the rim of oral mucosa to connective tissue.

Frequently a drain is placed in the area of the mucocele to allow fluid to escape from the area until it has a chance to heal.

Treatment is NOT an emergency; the condition is rarely troublesome to the pet. It is disturbing to owners though. Draining the pocket of the salivary fluid may resolve the issue ONLY if the original duct/gland leak has stopped. Worth trying; nothing is lost except time.

It is very uncommon for a sialocele or radula to be truly infected; sialadenitis & migraine foreign bodies in salivary ducts look very different — pain, inflammation, & pus.

Treatment for any presentation involving a cervical component is to remove the mandibular sublingual gland & duct & drain the extravasated saliva. Treatment for a sublingual radula can be marsupialization alone; it is less invasive & create a permanent “new” duct stoma for gland complex (this may stricture & reform, requiring mandibular/sublingual gland & duct removal).



AFTERCARE & OUTCOME

If a drain was left in the surgical site, your pet will experience several days of drainage. If the wound is bandaged, it will be necessary to change the bandage frequently. If the wound is NOT bandaged, it is helpful to apply warm compresses with a damp towel. This will help clean the skin in the area of the surgery & will help encourage drainage of fluid from the area.

Prognosis is excellent for a normal life after drainage of a mucocele & adequate removal of the affected salivary glands. Dogs do NOT suffer from a dry mouth following removal of the mandibular & sublingual glands, even if performed on both sides.

Postoperative complications are uncommon if the procedure is performed by an adequately trained surgeon. Occasionally a fluid pocket (seroma) may develop in the area where the mucocele was. This can either be drained or may be allowed to resolve by itself. Infections are possible but uncommon. If inadequate glandular tissue is removed, it is possible that the mucocele will recur.

COMPLICATIONS that may arise with this procedure are:

- 1) Seroma: sialoceles chamber (cervical treatment) fills with serous fluid soon after surgery; no treat, aspirate, or minor drain placement; resolution 2-4 weeks
- 2) Jaw pain, tongue palsy-transient, no treats.
- 3) Bloody saliva: marsupialized site drainage (sublingual treatment)

POST-SURGERY: outcomes may be poor due to the above complications

- 1) Ongoing accumulation of the cervical saliva— may require add'l surgery to identify remaining rafts of the sublingual gland.
- 2) Return of Ranula— may require add'l surgery to remove mandibular/sublingual gland & duct.

GENERAL CONSIDERATIONS & COMPLICATIONS FOR ALL SURGERY & ANESTHESIA PROCEDURES ARE:

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

Your pet has had either a salivary mucocele (sialoceles) or radula surgically treated. A sialoceles (pronounced sigh-AL-o-seal) developed when one of the salivary glands found in the cheek / neck area (mandibular salivary gland) is damaged either in the gland itself or the duct leading

from the gland to the mouth; saliva collected in the neck area. A radula (pronounced Ran-u-la) developed when one of the salivary glands found alongside the tongue (sublingual salivary gland) is damaged in the gland or duct; saliva collected alongside/under the tongue. Some patients had fluid accumulate in both locations because the mandibular & sublingual glands share a common duct carrying saliva to the mouth. Both of these situations cause soft swelling that can range from small to very large.

Surgical treatment involved draining the fluid pocket & then either removing the mandibular salivary gland or creating a new very large opening for the damaged duct in the mouth (“marsupialization,” pronounced mar-SOUP-ee-ul-eye-zay-shun).

POST-OP: FIRST FEW DAYS - MONITORING

Please keep your pet in a comfortable, safe, indoor location without free access to stairs for the next 24 hours as he/she recovers from anesthesia & surgery.

Your pet may be groggy for the next few days. He or she may whine or appear more anxious than usually; this may indicate pain discomfort or side-effects of the medications. Please call your primary care veterinary team for assistance with medication adjustments or return for exam & additional pain medications as needed.

Monitor appetite & attitude. If both do NOT steadily improve over the next 2-3 days, please call your primary care veterinary team or return for progress evaluation & problem-solving.

You can expect your pet to have a bowel movement within 5 days. Some animals take longer than others depending on when they last ate prior to surgery & when they started eating after surgery. It may be abnormal in color & consistency for 2-3 days. If you have any concerns, please speak with your primary care veterinary team.

Please confirm that your pet has urinated within 24 hours of returning home. If he/she does NOT or you notice any problems related to urination, please speak with your primary care veterinary team.

Closely supervise your pet's movements over the first 3-4 days when she/he will be groggy from anesthetics & pain medications. Limit activities to necessary events only (on leash/out to go to the bathroom; access to food/water).

MEDICATIONS

It is likely that you have been prescribed one or more medications (given by mouth) for your pet over the first 2-3 weeks of recovery. During the discharge appointment or shortly thereafter, please make sure you understand:

- 1) What each medication is being used to treat.
- 2) What side-effects may develop &
- 3) Whether or NOT the medication should be refilled & continued.

POST-SURGERY: WEEK 1 & 2 - MONITORING

If the mandibular salivary gland was removed on the side of the neck, please check the incision TWICE daily. Please call your veterinarian if you notice:

- 1) Gapping (the edges should be exactly touching)
- 2) Discharge (other than small amount of crusting).

Some bruising is normal & will resolved in 5-7 days.

You may have been prescribed an antiseptic rinse. If so, please rinse your pet's mouth with the solution 2-3 times daily for 7 days.

Your pet's breath may be bad for the first week; thereafter it should steadily improve. If you notice his/her breath becoming or remaining foul smelling, please see your primary care veterinarian for evaluation.

You will probably notice bloody saliva & excessive drooling for the first week. If this continues beyond this period, please see your primary care veterinarian for evaluation.

Do NOT allow your pet to paw or rub the incisions(s); this can compromise the incision & predispose to infection. If necessary, please prevent access to the incision by using an E-collar or other devices, if you must leave your pet unattended.

TEST(s) PENDING

If there were any samples removed for testing, they will be submitted & results usually will be available in 5-7 days. Your primary care team will contact you with test results & make any treatment changes as needed.

PROGRESS EXAMS

Please return to your primary care clinic in 10 - 14 days for a progress exam. Surgical healing will be evaluated, sutures (if present) will be removed, additional surgical "touch up" procedures will be planned & any questions you have will be addressed.

DIET

Please feed your pet only soft/canned food or well soaked kibble for the next 2 weeks to improve comfort during eating. Early in the healing period, you may need to assist by feeding small meatballs one at a time.

Note that canned food is much higher in calories & fat. Reduce the amount of food you are feeding (compared to typical dry food) by 1/2 to prevent unwanted weight gain.

RESTRICTIONS

Do NOT allow your pet to have access to toys or other objects that he/she will carry in the mouth or chew on for 6 weeks. Failure to restrict this activity may compromise healing.

Avoid any rigorous activity for 2 weeks. For dogs, short, leashed walks to urinate/defecate are fine. Do NOT use a neck/collar restraint on walks, etc. for the 1st 4 weeks after surgery.

Minimal, supervised/assisted access to stairs is advised while your pet is taking pain medications. Use baby gates, etc. to prevent free access to stairs during this restricted period. When navigating stairs (up & down), have a hand/leash on collar/harness & a leash/safety-strap under the belly to prevent slips, stumbles, falls.

Please use a short (-6ft), hand-held leash when outside to urinate/defecate. Confine your pet to a small area/room/crate when unattended. Please do NOT allow your pet to run, jump or play during this restriction period.

POST-SURGERY: MONTH 1 - 2

If your pet had a swelling in the neck, this can take up to 2-3 months to be fully absorbed. Saliva is very irritating to the tissues once it has escaped the salivary gland/duct system, so the inflammation lining the abnormal fluid pocket needs to go away before swelling fully resolves. If the size of the swelling is getting bigger, rather than smaller, post-operatively, please return for evaluation.

LONG-TERM LIFESTYLE

It is uncommon, but possible, for the salivary gland/duct on the other side of the head to be damaged too. It is currently poorly understood why some dogs develop this abnormality more than others.

Rarely, patients who start with just a radula (swelling under the tongue) can go on to more leakage further up in the neck & a sialocele in the neck/chin area develops. If this occurs, surgical removal of the mandibular salivary gland may be required.

If you have any questions, please feel free to ask your primary veterinarian &/or veterinary surgeon.

TREAT Veterinary Surgery Service
Dr. Le-Nguyen, DVM (Practice Limited to Surgery)
(916) 230-8103
treatveterinarsurgeryservice@gmail.com
<https://treatveterinarsurgeryservice.com>