Surgical Affection of salivary gland Lecture (1)

Dr. Khalaf H.A. EL-Budari

Department of Surgery, College of Veterinary Medicine, University of Wasit, Iraq

Salivary glands:

Salivary glands are glands that open or secrete into the oral cavity. The oral cavity is containing numerous salivary glands that secrets saliva. The saliva secreted to keeps interior of the mouth moist, wet and lubricates food, and facilitates mastication by lubricating the passage of the bolus and initiates digestion of starchy foods.

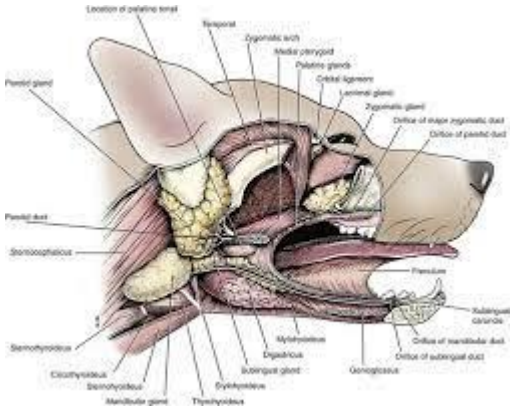
The major salivary glands are located some distance from the oral cavity and empty their secretions via long ducts.

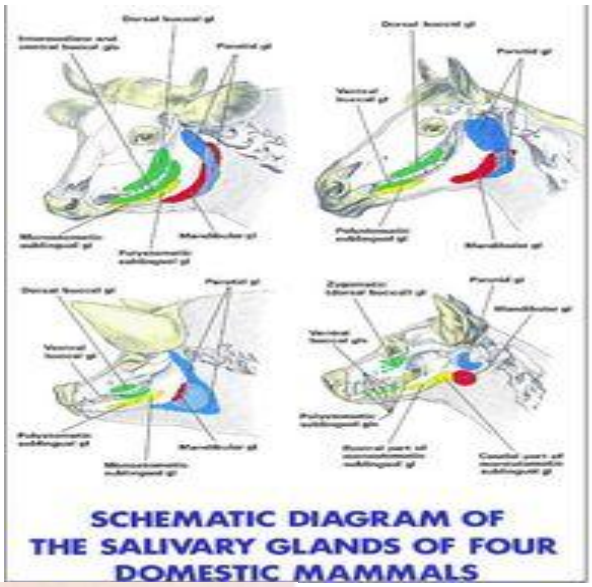
Saliva is produced and secreted from salivary glands. The basic secretory units of salivary glands are collections of cells called an acini. These cells secrete a fluid that contains water, electrolytes, mucus and enzymes, all of which flow out of the acinus into collecting ducts.

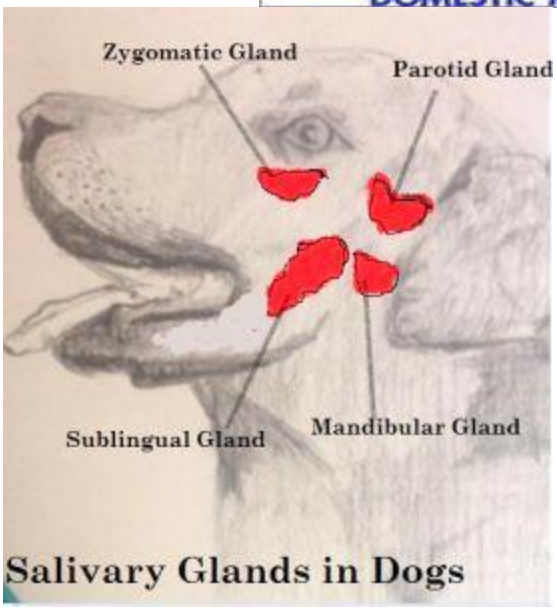
The Salivary glands include:

1. Parotid S.G.
2. Mandibular S.G.
3. Sublingual S.G.
4. Zygomatic S.G.

Parotid gland: In large animal parotid salivary gland was situated in the space between the ramus of the mandible & the wing of the atlas.







The Parotid gland located at the distal portion of auditory canal. The duct of the Parotid gland is entering the mouth of the parotid papillae opposite the upper fourth premolar tooth.

Mandibular gland: located ventral to the parotid gland. It lies in the bifurcation formed by the linguofacial & maxillary vein. The mandibular duct opens on the floor of the oral cavity at the base of the lingual frenulum.

Sublingual gland: located in sublingual area, the duct open with that of mandibular duct or separate exit.

Zygomatic gland (dorsal buccal gland in other animals): lying medial to the roster end of Zygomatic arch. The duct opens caudal to that of parotid duct.

Affection of salivary gland:

Salivary glands affection divided into 2 types:

1- Congenital
2- Acquired.

Congenital abnormalities of the salivary glands are associated with agenesis or atresia of the parotid ducts, resulting in a fluid-filled swelling proximal to the obstruction site.

Acquired diseases: Usually secondary to lacerations or other trauma that ruptures the salivary glands or ducts.

1. **Trauma:**

Fresh wound of the gland must be sutured after thorough cleaning and debridement, the leaking wound has a great tendency toward spontaneous closure. Close the wound where the fistula has been excised in several layer with cat gut, the skin wound is closed with interrupted silk suture. The tube facilitates normal drainage of saliva.

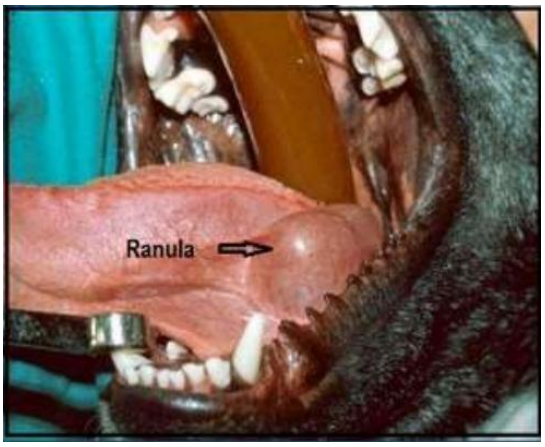
2. **Ranula**: is a large, transparent, circumscribed, well-defined salivary cyst that forms in the mouth on either side of the tongue. Caused rupture of the sublingual duct and leakage of saliva into the surrounding tissue to form fluctuant swelling, diagnosis by aspiration of saliva on needle puncture.

Causes:

- Traumatic injury
- Blockage
- Rupture of the duct or capsule of the sublingual gland.

Clinical Signs:

- A Ranula is detectable as a soft, fluctuant, painless mass
- Pain or fever may be present if the mucocele becomes infected.
- On aspiration of light brown or blood-tinged, viscous saliva can be detected.



A ranula may not be seen until it is traumatized and bleeds. A pharyngeal mucocele can obstruct the airways and result in moderate to severe respiratory distress.

Treatment :

- Ranula – Incise the cyst to drain out the contents .
- Cyst wall is then touched with Tincture Iodine to destroy its lining and prevent further accumulation of fluid.
- Suture the mucous membrane of the ranula to the oral mucosa use a multifilament synthetic absorbable suture of 3-0 size.

Surgical technique (Cervical Mucocele):

- Removal of the mandibular and sublingual salivary glands.
- First position of the animal in lateral recumbency with the affected side uppermost.
- The neck and jaw should be positioned slightly obliquely and towels or sand bags placed under the neck to elevate the surgical site for better visualization of the bifurcation of the jugular vein.
- The incision is made from the ramus of the mandible cranially to the bifurcation of the jugular vein caudally; obstruction of the jugular vein prior to incision will facilitate visualization of

landmarks. Dissection is accepted into the capsule of the mandibular and sublingual salivary glands. An intracapsular dissection commences and the glands are removed from the capsule.

3. Salivary Calculi "Sialolithiasis"

- The common case found calculi in the duct. The calculus is usually smooth and oval in shape.
- Common in bovines and less common in equines and occasionally in pet animals.

Causes:

- This is due to entrance of a foreign body into the duct carrying bacteria with it, leading to fermentation and deposition of lime salts on it.

Symptoms:

- Presence of a hard painless swelling along the course of the parotid duct.
- Distension of the duct behind the obstruction.
- A grating sound could be heard if there are several calculi.

Treatment:

- Try to push the calculus towards the mouth cavity and then remove it.
- If the calculus is blocked at the oral end of the duct and cannot be pushed in it, enlarge the orifice by incision and push the calculus out.
- If the above methods failed, under aseptic precautions incise the skin (under local anesthesia) over the calculus and remove it, then suture the duct with fine catgut, then the skin with silk.

- The animal is kept away from other animals and given only water and liquid therapy for at least 5 days to avoid salivation.
- If no healing by primary intention, there will be a salivary fistula.

4. Salivary fistula:

- Salivary fistula is an uncommon problem that can result from trauma to the mandibular, zygomatic, or sublingual salivary glands.
- Wounds of the parotid gland are most likely to develop a fistula.
- Parotid duct injury may be the result of a traumatic wound (eg, bite wound), abscess drainage.
- The constant flow of saliva prevents healing, and a fistula develops.

Clinical signs :

- Saliva dribbles down form the wound causing excoriation in the area.
- Losses of excessive saliva may lead to dehydration and ingestion.
- Presence of high grade of inflammation sometime it lead to inflammation to parotid gland itself.

Treatment:

- After proper controlling and achieving anesthesia, a circular incision should be made along the fistula tract.
- Care should be taken not to cut facial artery and vein
- The blunt needle or catheter is passed inside the duct toward the glandular part
- A counter irritant solution is injected inside the duct to destroy the function of the gland.
- The duct is ligated after withdrawing the catheter or needle

- The wound is closed in routine manner.

Excision of the parotid gland:

- It is indicated excision only when there is high grade of infection.
- For this, an oblique incision of 15-20 cm is given bellow the base of the ear extending along the caudal border of the vertical ramus
- The parotid gland is ligated or clamped
- The skin and parotid-auricularis muscle are reflected to expose the gland.
- Provide drainage and the skin wound closed in routine manner.