

Short communication

Surgical management of sublingual salivary mucocele (ranula) in a Maltese dog- a case report

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A B S T R A C T

A 10-year-old Maltese male dog was brought to the Shahedul Alam Quadery Teaching Veterinary Hospital (SAQTVH), Chattogram Veterinary and Animal Sciences University (CVASU) with the complaint of gradually enlarged soft swelling ventral to the left side of the tongue during the last four days with a history of difficult swallowing, abnormal protrusion of the tongue and excessive salivation. On clinical examination, soft, fluctuant, painless mass was palpated physically in the left side of sublingual tissues just beneath the tongue. The respiratory rate, heart rate and rectal temperature were within the normal values. Radiographic examination revealed a radio-lucent mass on the right lateral view, an anechoic round structure was found on ultrasonographic examination. Paracentesis of the mass reveals clear saliva-like fluid, which was mucoid. Based on the history, clinical examination and imaging findings, the condition was diagnosed as sublingual salivary mucocele (Ranula), which was corrected surgically under inhalation anesthesia. Antibiotic, antihistaminic and pain killer was administered postoperatively. The dog starts fed normally after three days of surgery and completely recovered after 5 days. Surgical excision can be an effective treatment for sublingual salivary mucocele in dogs.

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1. INTRODUCTION

The accumulation of saliva leaked from an injured salivary gland or duct lined with granulation tissue is called salivary mucocele (Brown, 1989; Jubb et al., 2012). Leakage from the mandibular and sublingual glands or ducts are the most common sources (Schmidt and Betts, 1978; Bellenger and Simpson, 1992; Ritter et al., 2006). Generally, it can be observed in the form of a cyst lined with granulation tissue and where the epithelial lining is absent. Any dog breed or other animals can be susceptible to salivary mucocele (Jubb et al.,

2012). Seyfzadeh (2004) reported less than 0.5% of the incidence of salivary mucocele in dogs. The actual etiology was not identified. However, it may be due to blunt trauma, foreign body and sialolith have been suspected as principal causes of salivary mucocele (Yasuno et al., 2011). Saliva generally leaks from the shattered portion and accumulates in the surrounding tissue. An inflammatory response is triggered by the accumulated saliva and granulation tissue formed (Fossum et al., 2002). Salivary mucoceles are usually as slow as growing, painless, and soft fluctuant oral,

perioral, or submandibular masses (Monnet and Smeak, 2020). The diagnosis is generally based on the history, physical examination by palpation, diagnostic imaging and needle aspiration. Salivary mucoceles are not true cysts because the tissue surrounding accumulated saliva is not secretory. Therefore, the inflammatory connective tissue lining, therefore, generally does not require excision (Monnet and Smeak, 2020). The objective of surgical management for salivary mucoceles is impeding further saliva leakage via the total excision of the respective gland(s) (Waldron and Smith, 1991; Yasuno et al., 2011). The present report records successful surgical management of sublingual salivary mucocele in a 10 years old male Maltese dog.

2. CASE PRESENTATION

A 10-year-old intact male Maltese dog, weighing 5.8 kg, was brought to SAQTVH, Chattogram Veterinary and Animal Sciences University (CVASU), with a history of gradual enlargement of soft swelling ventral to the left side of the tongue during last 4 days with history of difficult swallowing, abnormal protrusion of the tongue and excessive salivation. On clinical examination, soft, fluctuant, painless mass was palpated physically in the left side of sublingual tissue just beneath the tongue (Figure 1). The respiratory rate, heart rate and rectal temperature were within the normal values. Radiographic examination revealed radiolucent mass (Figure 2). An anechoic round structure with a 10 mm diameter was found on ultrasonography (Figure 3) Paracentesis of the mass reveals clear saliva-like fluid, which was mucoid.



Figure 1. Gross examination (Lateral view) of the sublingual salivary mucocele



Figure 2. Left lateral radiograph revealed a radiolucent mass



Figure 3. Ultrasonography revealed an anechoic round mass of 10 mm diameter

3. PRE-OPERATIVE PREPARATIONS AND ANESTHESIA

The animal fasted for 12 hours and was off water for six hours before surgery. Premedication with atropine sulphate (TropinVet®, Acme Laboratories Ltd.) was administered subcutaneously at the dose rate of 0.04 mg/kg body weight. In addition, xylazine (Xylaxin®, Indian immunologicals ltd.) was administered intramuscularly at the dose rate of 1 mg/kg body weight. The patient was placed on lateral recumbency. The mouth cavity was washed with 0.01% potassium permanganate solution. Anesthesia was induced with propofol (Pofol®, Popular Pharmaceuticals Ltd.) administered intravenously at the 5 mg/kg body weight and maintained with 4% halothane (Halosin®, ACI Limited) and 200 ml oxygen per minute. Infusion of normal saline was

maintained intravenously at the dose rate of 10 ml/kg body weight/ hour during the intra-operative period.

4. SURGICAL TECHNIQUE

A longitudinal incision was made on the vestibule over the cyst, and mucocele was exposed. The salivary mucocele was excised with scissors, and the artery and vein entering the gland were cauterized (Figure 4). The wound was closed by apposing the edges of the capsule with a size 2-0 polyglactin suture in a simple interrupted pattern (Figure 5).



Figure 4: Surgical site after excision of sublingual salivary gland



Figure 5: Apposition with Suture after surgery

5. POSTOPERATIVE CARE

Postoperative treatment was given with antibiotic ceftriaxone (Ceftron® Square Pharmaceuticals Ltd.) at the dose rate of 50 mg/kg body weight intramuscularly for five days, meloxicam (Mel Vet® Acme Laboratories Ltd.) at the dose rate of 0.3 mg/kg body weight subcutaneously for three days. The owner was

advised to keep animals on a liquid and semisolid diet for four days to avoid interference in the healing process.

6. RESULTS

Diagnosis of mucocele was based on history, clinical signs, location, paracentesis and imaging. The present case was diagnosed as sublingual salivary mucocele by careful observation, palpation, aspiration of contains, ultrasonographic and radiographic imaging of swelling. Clinical signs depend on the location of mucocele. Among various surgical techniques, total excision of affected salivary glands or ducts is the most effective technique to prevent recurrence. In the present case, lack of recurrence following surgical excision of mucocele supports the theory that it is not a true cyst but a reactive structure.

7. DISCUSSION

In canine, salivary glands disorders are rare. However, mucoceles are considered the most common condition. Mucoceles are classified as cervical, sublingual (ranula), pharyngeal and zygomatic by their location (Shivaraju and Maiti, 2018). Sublingual salivary mucocele is a collection of mucoid saliva leaked from a damaged sublingual salivary gland(s) or duct. Any secretions of body tissue or saliva make a way of least resistance. The common sites for accumulating of extravascular saliva are the subcutaneous tissues of the intermandibular, cranial cervical region or the sublingual tissues on the floor of the mouth (Mapes, 1984; Waldron and Smith, 1991; Slatter, 2003). In the current case, the dog had few teeth to chew chicken bones, which may cause crushing of the sublingual salivary gland against the mandible, resulting in tearing of the gland and leakage of saliva into the surrounding tissue. Inhalation anesthesia maintains painless surgery and smooth recovery. A liquid and semisolid diet with post-operative treatment aid in a rapid recovery of the dog.

8. CONCLUSIONS

Surgical excision of affected sublingual salivary mucocele was effective management in this case. The dog showed rapid recovery without any complications. The administration of a

semisolid diet during the postoperative period is essential for rapid healing of the oral wound.

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