Rigid Endoscopy to Aid the Treatment of Cervical Mucocele in a Dog

João Pedro Scussel Feranti 1, Anelise Bonilla Trindade 2, Marília Teresa de Oliveira 3, Fernando Wiecheteck de Souza 3, Luis Felipe Dutra Corrêa 3, Fabiola Dalmolin 3, Arícia Gomes Sprada 3 & Maurício Veloso Brun 4

ABSTRACT

Background: Sialocele or salivary mucocele is the accumulation of saliva in the glandular connective tissue due to a leakage from damaged salivary duct, which is surrounded by granulation tissue. The mucocele can be classified according to its location (cervical, pharyngeal or sublingual, the latter being known as ranula). The treatment consists of salivary gland and duct excision. However, in some cases, the definition of which side is affected is a challenge for surgeons. Keeping this in view, the aim of the present study was to describe the use of rigid endoscopy to determine the affected gland in a dog with cervical mucocele.

Case: A five-year-old Dachshund, weighting 8.2 kg, was presenting progressive swelling in the ventral cervical area. The animal presented apathy, appetite loss and saliva drooling. A fluctuant, non-painful, fluid filled mass was noted on physical examination. Sialocele was diagnosed and surgery was undertaken to excise the involved gland and mass. The patient was positioned in dorsal recumbence. A skin incision was performed in the cranial-ventral aspect of the mass as it was not possible to precise the affected side. Following drainage of the content, the inner aspect of the sialocele capsule was digitally palpated using the surgeon’s index finger. However, it was still not possible to determinate the affected side. A purse-string suture was performed around the incision and a 10mm cannula was inserted into the sialocele lumen. The cavity was insufflated with CO2, then using a 0º 10 mm endoscope, the whole extension of the capsule was inspected. On the right side, the wall was round shaped, suggesting the presence of the right gland compressing the wall of the affected gland to the left. On the left side, there were some recesses and irregular surfaces, and an orifice was identified, suggesting the presence of the ducts opening. Therefore, the left sublingual and mandibular glands were excised conventionally. The procedure lasted 150 min and it was performed uneventfully. The patient was followed-up for seven days and skin sutures were removed after complete primary intention healing. Thirty days postoperative the patient presented no signs of recurrence.

Discussion: Although several maneuvers were performed in order to diagnose the affected side in the current report, some doubt remained. Thus, endoscopic diagnosis was tested, which has not been reported for that purpose in the author’s knowledge. Although not completely conclusive, such examination provided strong basis that the left side was affected. A month after the treatment, recurrence did not occur, which is usually one of the most common complications. Therefore, the exam purposed in this report fulfilled its expectancies, suggesting that rigid endoscopy may be used as a new tool for identification of which side and gland are involved in complicated extensive salivary mucoceles cases. Another important aspect of the procedure was the insufflation of the mucocele cavity that allowed the inner capsule inspection and did not result in subcutaneous emphysema. It was applied a pressure of 15 mmHg, higher than routinely used for laparoscopy in dogs, since it is a limited region, and presents reduced risk of subcutaneous absorption or alteration by compression. In conclusion, endoscopic view of the sialocele inner capsule is feasible in dogs as an adjunct for diagnosing the affected side in complicated cases.

Keywords: videosurgery, tumor, canine.
INTRODUCTION

Sialocele, also known as salivary mucocele, consists of saliva collection surrounded by granulation tissue [1,2,4]. The saliva leaks from damaged salivary gland or duct causing inflammation in the tissue. The majority of cases occur by trauma, but some are idiopathic, and the diagnosis is based on history, clinical signs and pathological findings [6]. Mucocele can be denominated according to its location (cervical, pharyngeal or sublingual/ranula) [5].

Treatment consists of gland and duct removal. The complications associated include seroma, infection, bleeding and recurrence. The recurrence occurs in less than 5% of the patients and is related with incomplete resection of the gland, erroneous resection of the unaffected gland or the lymph node instead of the gland [2,6].

The diagnosis may be reached using several noninvasive imaging methods such as radiography or ultrasound. However, the gold diagnostic method is provided by computed tomography and/or magnetic resonance imaging, along with cytology, which, in most cases, reveals a viscous fluid, straw-colored and mucin content [3]. Considering that the diagnosis of the affected side can be difficult in some cases, the present study describes the use of rigid endoscopy for this purpose, in a canine presenting cervical mucocele.

CASE

A five-year-old dachshund dog, 8.2 kg, presenting a mass in the ventral cervical region, was referred to the veterinary hospital. According to the dog’s owner, the enlargement of the cervical region had first appeared approximately a month ago and became more evident two days prior the consultation. The patient was lethargic, with appetite loss and saliva drooling. On clinical examination, a non-painful, fluid filled, fluctuant mass was observed. Based on the clinical presentation, it was diagnosed sialocele and surgical treatment was indicated.

The patient was placed in dorsal recumbence to determine the affected side, but it was not possible. Then, an incision was made in the cranial-ventral aspect of the mass and the surgeon did digital palpation of the inner sialocele capsule surface. However, this maneuver also did not allow determining precisely which glands were affected. Thus, it was considered the use of endoscopy for this purpose. A purse-string suture was performed around the incision and a 10 mm cannula was inserted. The sialocele cavity was insufflated with CO₂ at 15 mm/Hg pressure. Using a 10 mm/0º rigid endoscope the mucocele capsule was completely visualized. It was found that in the right side, toward the correspondent mandibular gland, the wall was rounded. On the left side, there were several recesses and the surface was irregular and it was possible to visualize an orifice, probably the ducts opening, and a tunnel. These findings suggested that the left mandibular and sublingual glands were damaged and their removal was performed by conventional surgery.

In the dead space formed upon the sialocele excision a closed and active drain attached to a 10 mL syringe was placed. The adenectomy were performed following the technique previously described by Fossum et al. [1]. Postoperative therapy consisted of cefalexin (Keflex® - 30mg kg⁻¹, TID, orally) for seven days, flunixin meglumine (Banamine® - 1.1mg kg⁻¹, SID, s.c.) for three days and daily cleaning of wounds with NaCl 0.9% until complete healing.

Procedure lasted 150 min, uneventfully. The patient was monitored for a period of seven days. At the seventh day, the skin presented good healing by first intention and sutures were removed. The drain placed in the adenectomy region was removed after 48 hours by the dog itself, even with protective collar and bandages. However, there was no complication associated to the event. Thirty days after surgery, the dog presented no signs of recurrence.

Figure 1. Five-year-old dachshund dog 8.2 Kg. (A) Enlargement of the ventral cervical region (Arrow). (B) 0º/10mm Endoscope inserted into the subcutaneous after insufflations with medicinal CO₂ at a pressure of 15 mm/Hg pressure.
DISCUSSION

Regarding to the determination of the affected side, an important stage in the treatment of sialocele, Fossum et al. [1] claim that its definition is possible from positioning the patient in dorsal decubitus, once the swelling tends to move to the region where the alteration originated. When this maneuver is insufficient, the authors suggest performing a small incision in the sialocele and digital palpation of the mucocele’s lumen. On the affected side, normally, it is possible to find a tract towards the leakage. In this case, although both maneuvers were performed the affected glands remained unclear. The authors decided to use the endoscopic to establish the affected region correctly. In the authors’ knowledge, this attempt has not been reported. The use of endoscopic was not completely conclusive, although it demonstrated strong indication that the left side was the sialocele location due to the marked differences of the right side.

It is worth note that the use of CO₂ to inflate the cavity improved the visualization of the capsule’s lumen and it did not cause subcutaneous emphysema. The authors suggest that the fibrous tissue prevented the gas dissipation into the subcutaneous tissue. It was applied 15 mmHg of pressure, higher than routinely used in laparoscopic surgery in dogs, since the insufflation was limited to a specific region, with reduced risk of subcutaneous absorption or compressive alterations.

It is concluded that endoscopic visualization of sialocele internal capsule may be performed in dogs using the technique described to assist in defining the side where the affection originated.

MANUFACTURERS
1 Eli Lilly, São Paulo, SP, Brazil.
2 Schering Plough, São Paulo, SP, Brazil.

Declaration of interest. The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

REFERENCES