CASE REPORT

Parotid Gland Rupture in a Holstein-Friesian Cow

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In India, ruminants, especially cattle and buffaloes, are domesticated for milk purposes; however, some leather industries and slaughterhouses also produce different livestock products from the same animals. Trauma to the salivary gland directly influences milk production of animals either because of indigestion or dehydration. The common salivary gland affections in ruminants are salivary fistula, sialolith, ectasia of the parotid duct, and sialoceles (Misk and Nigam, 1984; Misk *et al*., 1991; Semieka, 2002; Sagar *et al*., 2010). In ruminants, there are 3-paired salivary glands, *viz*., the parotid, mandibular, and sublingual and trauma to salivary gland infrequently occurs in cattle, may cause a wound with salivary secretions and this leakage of saliva into the surrounding tissue along with its local tissue reaction may lead to the development of a circumscribed soft swelling in the region (Singh *et al*. 2020). Quakes can quickly treat many clinical problems under field conditions, but trauma to the salivary gland requires special attention, and improper management of such situations leads to the life-threatening condition of the animal. Since cauterization of the gland is an easy, economical, and feasible approach under field conditions, the present case was planned for medicinal attempt rather than surgical intervention.

Fig. 1: Photograph showing drainage and fistula formation at the base of ear. Area become more prone to excoriation, was also observed.

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History and Clinical Examination

An eight-year-old female HF cattle weighing approximately 575 kg was presented to Veterinary Clinical Complex, Navania, with a history of fighting with another buffalo of the same herd two days ago. The buffalo had invaded horn during fighting under the base of the cattle's left ear, which got injured. Immediately after trauma, cattle started huge drainage of transparent fluid. There was swelling with a fistula formation at the injury site (Fig. 1), and on palpation, the pain was not as evident. Transparent serous fluid (assumed to be saliva) was draining out continuously at the rate of 4.8 mL/minute since the day injury occurred. The feeding status of the animal was normal, and the animal was alert and normothermic. As per the owner's history, adequate water intake was observed, which further compensated for the situation/dehydration.

Therapeutic Approach and Discussion

A tentative diagnosis of parotid rupture was made based on physical examination and anatomical position of the parotid gland, and treatment was followed accordingly. pH of fluid was found >7.0. The parotid gland was calculated using 5% copper sulfate ($CuSO_4$) solution mixed with 20 mL of Tincture iodine solution. The mixed solution was infiltrated directly into the gland at different points by using 20 mL syringe and an 18 G needle. Somewhat solution was also infused directly

through the fistula for appropriate cauterization (Fig. 2). The next day same procedure of cauterization (without tincture iodine) was repeated.

After completing this process, injection Atropine sulfate @ 0.04 mg/kg b. wt., s/c for 4 days (Medivet, Instant Pharmaceuticals, Amritsar) as an antisialagogue; antibiotics Intacef-T (Ceftriaxone and Tazobactum-3375 mg, Intas Pharmaceuticals Ltd, Ahmedabad) @25 mg/Kg b. wt., i/m for 7 days, Pheniramine maleate 10 mL i/m for 4 days; and Meloxicam, 15 mL i/m for 3 days were administered. Serakind plus bolus (2-bolus/day) were given for 7 days after 3 days Maloxicam as a fibrinolytic agent, and to prevent excoriations, Vaseline jelly was applied around the affected wet area regularly till the area persisted wet. The owner was advised to isolate the cattle from noise to reduce further salivary secretions and offer a liquid diet.

Fig. 2: Photograph showing cauterization of affected area (Parotid gland) through mentioned agents.

Since ruminants produce a large quantity of saliva, the massive loss of fluid through fistula/rupture needs immediate correction to combat dehydration and infection (Ducharme 2004). Cauterization of the gland was done and found satisfactory. On the following day of cauterization, a significant swelling was observed in the area where cauterization was done (Fig. 3). The rate of saliva drainage was reduced on the second day (@ 1.7 mL/min), and improvement in condition was noticed as saliva/transparent fluid drainage was decreased significantly. Garg *et al*. (2006) reported a salivary cyst in crossbreed cattle treated by the destruction of parotid gland by potassium permanganate crystals and later by tincture iodine solution. However, in the present case, 5% copper-sulfate and tincture iodine were preferred to destroy the parotid gland and gave satisfactory results. Rao *et al*. (2011) satisfactorily treated three human patients affected with parotid gland trauma using autoclaved hot (60°C) hypertonic (3%) saline solution. They also concluded that antisialagogues or radiotherapy's conservative approaches to depress secretion are much better than surgical interventions. Literature also suggested using Lugol's iodine (10–15 mL) as a counter-irritant that should be injected inside the duct or gland (Singh *et al*. 2020). Misk *et al.* (2014) treated 39 buffaloes suffering from different affections of salivary gland/duct diagnosed based on clinical signs and anatomical considerations (Fig. 4).

Further, a sizeable submandibular swelling was observed by 2–3 days of cauterization in the present case. However, no exudates were seen on the affected area. The swelling

Fig. 3: Photograph showing cessation of drainage and skin or area become dry. But further large swelling was evident due to effect of cauterizing agents

Fig. 4: Photograph showing complete recovery of animal. No swelling was observed after a month of treatment. Animal was alert, active and healthy

was reduced naturally on the affected site and was entirely subsided by 17 days of cauterization. Feeding status, body weight, and animal health were found normal on day 35 through telephonic contact with the owner.

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