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Diagnosis and surgical management of injured soft palate (Dulla) in 6 Dromedary camels (*Camelus dromedarius*)

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Abstract

Six indigenous male dromedary camels with soft palate pouch injuries were the subjects of the current investigation. The camels were all displayed during the rut, which runs from November to March. The animals exhibited severe retropharyngeal edema, stiff necks, dysphagia, dyspnea, and an inability to inflate or extrude their dulla. To distinguish between a pharyngeal or oesophageal foreign body, radiography examinations of the animals were performed. Ketamine HCL (@2.5 mg/kg body weight) was used to maintain anesthesia during the oral examination and surgical removal of the soft palate while under xylazine (@ 0.3 mg/kg body weight) sedation. Using a long-handled Metzenbaum scissors, the dulla was carefully removed from the oral cavity. The following day, all of the camels recovered without incident and began consuming water and soft food.

Keywords: Diagnosis, surgical, management, *Camelus dromedarius*

Introduction

On the ventro-rostral portion of the male dromedary camel's soft palate, the dulla is a distinct diverticulum (Hegazi, 1949; Mukasa-Mugerwa, 1981) [6, 7]. During the rut or when excited, it is extruded from the buccal cavity (Arnautovic and Abdel Magid, 1974; Wilson, 1988) [2, 9]. Adult male camels frequently sustain injuries to their dulla, especially during the breeding season when they frequently balloon it. It sustains wounds from external damage, biting offender camels, or its own teeth. The injuries cause the dulla's blood artery to burst and the mucosa to rip. Over time, the damaged dulla either gets stuck in its typical posture or is unable to pull back. The animal maintains its neck arched and stays off feed in both scenarios.

Materials and Methods

Camels admitted to the Veterinary Clinical Complex, RAJUVAS, Bikaner, were used in the clinical study. Aetiology, clinical symptoms, and case history were documented. Lateral radiographs were taken when needed to rule out pharyngeal or oesophageal obstructions. In every case, surgical resection was used as the method of treatment. The camel owners were contacted via phone in order to follow up on the situations.

The camels were sternally reclined in restraint. Xylazine hydrochloride (@ 0.3 mg/kg body weight, IV) was used for sedation and Ketamine HCL (@ 2.5 mg/kg body weight) was used to induce anesthesia. After opening the mouth, a mild potassium permanganate solution (0.001%) was used to irrigate the area. soft palates that were imprisoned, the soft palate was freed by securing a long hook into its body. With the use of a long-handled Metzenbaum scissors, the soft palate was removed near to its connection while being kept in place by a towel. Daily irrigations of the oral cavity with a mild potassium permanganate solution were performed following surgery. In every clinical situation, the animals were given soft leaves and as little straw as possible for the next week. For five days, animals received injections of oxytetracycline at a rate of 5 mg/kg body weight intravenously and meloxicam at a rate of 0.3 mg/kg body weight intramuscularly for three days.

Results and Discussion

Protrusion and entrapment were the two categories used to categorize dulla injuries. In the current clinical investigation, protrusion was seen in one case and entrapment in five. In these cases, there was evidence of gangrene in one case, abscessation in two, and haematoma, oedema, and ulceration in three.

Dysphagia was the most common history of injured dulla in the current investigation, along with other symptoms such neck straining and excruciating retropharyngeal edema (Gahlot, 2000) [3]. The dulla was unable to enlarge in the entrapped form and remained outside the mouth in the protruded type. According to a camel with an imprisoned dulla can drink but not eat, while a camel with a protruding dulla does not eat or drink.

Due to the fact that camels have a propensity to swell out the dulla from their mouth cavity during rut season (November to March), which can result in fights with other male camels and injuries to the soft palate caused by sharp teeth, all of the cases were reported during this time (Al-Sobayil 2011) [1]. Additionally, it has been stated that dulla injuries happen when male camels pursue females in order to mate (Ramadan 1994) [8].

According to Al-Sobayil (2011) [1], all of the incidents took place during the rut season, which runs from November to March. Camels have a propensity to blow out the dulla from their oral cavity, which can cause damage to their soft palates from sharp teeth and fights with other males. Ramadan (1994) [8] has found that dulla injuries also happen when male camels pursue females for mating.

The protruding dulla in this study was ulcerated, oedematous, and hemorrhagic. The mucosa is torn and its blood vessels ruptured due to dulla injuries, and gangrene may result from delaying therapy (Gahlot, 2000) [3].

A palpable and unpleasant swelling at the retropharyngeal area was noted in every case of entrapped dulla. The entrapped dulla was pulled free using a long hook, and the pulled piece was subsequently caught with a towel (Gahlot, 2000) [3]. Metzebeaum scissors with a long handle were used to delicately excise the soft palate from the base in each of the clinical situations. If an improperly cut stump becomes trapped in the larynx, it can result in suffocation or even death (Gahlot *et al.*, 1988) [4]. There was no need to ligate blood vessels because the hemostasis occurred spontaneously (Gharu *et al.* 2016) [5].

In every camel, the dulla was surgically removed with success, and no postoperative complications were noted. The camels recovered without incident, and the day after the operation, they all resumed their regular water and food intake. Imprisoned dulla can drink but not eat, while a camel with a protruding dulla does not eat or drink.



Fig 1: Showing Oedematous Soft palate



Fig 2: Showing necrosed and infected Soft palate

Conclusion

Due to their propensity to ballon out the dulla, older camels are highly susceptible to soft palate injuries during rutting and breeding season. The dulla amputation has no impact on the camels' regular diet. Owners of camels may notice the clinical symptoms of ruptured dulla, and it would be best to treat the animal as soon as possible.

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