

Dystocia caused by breech presentation of a fetal monster with congenital salivary cyst and extensive macroglossia in a buffalo- A rare case report

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Abstract

A pluriparous buffalo was presented to the Veterinary Clinical Complex, Gannavaram with signs of parturition, rupture of allantoic sac and was unable to parturate. On per vaginal examination, it was diagnosed as posterior longitudinal presentation, dorso-sacral position with breech posture. A live calf with a congenital salivary cyst and macroglossia was delivered by forced traction. Incidence of macroglossia and congenital salivary cyst are reported to be rare in buffalo.

Keywords: Buffalo, Congenital, Macroglossia, Salivary cyst

Highlights

- Reports a rare case of congenital salivary cyst and extensive macroglossia in a buffalo calf
- Reports true macroglossia
- Reports successful relief of true breech presentation

Dystocia or difficult labour occurs less frequently in buffaloes compared to cattle. Fetomaternal disproportion is identified as the primary etiological factor for dystocia in buffaloes, with a notable occurrence of faulty foetal positioning also contributing to this condition (Noakes *et al.*, 2009). Breech presentation, where both hind legs are retained in the uterus, is a common dystocia scenario, presenting a significant challenge for obstetricians. During per-vaginal examination, the calf's tail is typically identified. The treatment goal for dystocia caused by true breech presentation is to transition from breech presentation to bilateral hock flexion before proceeding with appropriate interventions (Sachan *et al.*, 2014).

Macroglossia, derived from the Greek words "macro + glossa," refers to the abnormal enlargement of the tongue. Its historical roots trace back to 1550 BC, documented in the ancient Egyptian Eber's Papyrus. The term "Macroglossia" denotes a prolonged, painless enlargement of the tongue, typically identifiable by the tongue extending beyond the oral commissure in a resting position. Vogel *et al.* (1986) distinguishes true macroglossia, which is characterized by both physical enlargement and underlying histological changes, from pseudo macroglossia, which describes a tongue of normal size that looks bigger relative to adjacent anatomical structures. Furthermore, conditions like

trauma and inflammation can cause macroglossia.

Salivary glands, crucial paired structures in domestic animals, serve multiple functions. Among them are the submandibular, sublingual, and parotid glands, with the submandibular gland being the largest and the sublingual gland being the smallest (Raja *et al.*, 2016; Singh and Singh, 2017). These glands are vital for saliva production. However, various conditions like tumours, infections, physical trauma, fistulas, ectasia, sialoliths, ranula and sialocele can disrupt their function, significantly affecting the well-being of buffaloes (Singh and Singh, 2017). Ranulas, for instance, are collections of saliva outside the gland, often forming a transparent cyst under the tongue that hinders normal feeding (Hari Krishna *et al.*, 2010).

A six-year-old pluriparous buffalo at complete gestation was brought to the Veterinary Clinical Complex of the NTR College of Veterinary Science, Gannavaram with a history of abdominal discomfort and straining for the past 12 hours. The water bag was ruptured 1 hour prior to presentation. The buffalo's rectal temperature (38.5°C), heart rate (82 bpm), and respiration rate (17/min) were within normal physiological range. Using liquid paraffin as a lubricant, per vaginal examination revealed complete dilation of the cervix with only tail of the foetus visible in the birth canal. Further examination revealed a live foetus with bilateral hip flexion causing dystocia.

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The foetus was gently pushed forward and upward into the birth canal to facilitate access to the retained hind limbs. Once the hind limbs were within reach, they were grasped near the hock, and traction was applied to induce hock flexion. Manual correction was then performed to adjust the hock flexion, followed by synchronous traction on both hind limbs. This procedure resulted in the successful delivery of a live foetus exhibiting extensive macroglossia and swelling on the left side of the jaw (Fig. 1, 2 and 3).

Immediately after the delivery of foetus, the placenta was expelled from the birth canal. To enhance uterine defence mechanisms, the buffalo was



Fig. 1. Gross image of calf showing swelling on the left side of the face

administered a single intravenous injection of oxytocin at 50 I.U. in one litre of normal saline solution. Additionally, three litres of 5% dextrose normal saline solution were given intravenously for three consecutive days, along with a slow intravenous injection of 450 mL of calcium borogluconate once. Further treatment included intramuscular injections of Streptopenicillin 5.0 g, Flunixin meglumine 1000 mg, and Chlorpheniramine maleate 227.5 mg for five days and Replanta 450 mL (100 mL) twice a day orally for 2 days). Following these interventions, the buffalo recovered without experiencing any post-partum complication.

Aspiration of the cyst revealed thick viscid fluid and was found to be saliva, confirming it as salivary cyst. The foetus was subjected to radiological examination which revealed macroglossia with salivary cyst. In an attempt to reduce macroglossia, atropine and prednisolone were injected on to the tongue base and was futile. Owner was advised to bottle feed the calf. Purohit *et al.* (2012) highlighted that 1.78% of

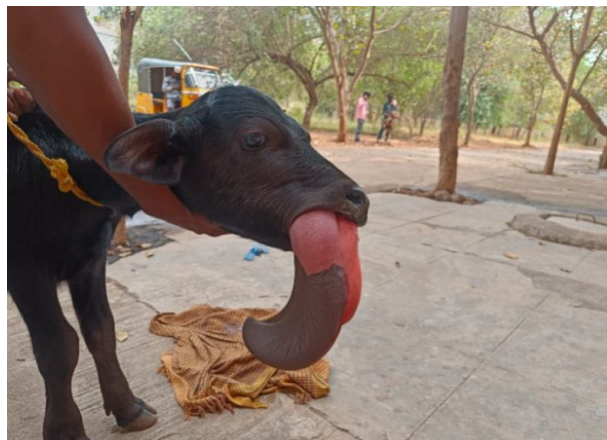


Fig. 2. Calf showing extensive macroglossia



Fig. 3. Skull left lateral X-ray of the calf showing macroglossia (arrow) and salivary cyst (arrow)

dystocic deliveries resulting from foetal causes were attributed to foetal malformations. This occurrence was often linked to a rise in inbreeding rates and the proliferation of negative alleles associated with genetic disorders. To mitigate this issue, it was imperative to implement breeding strategies that deter increased inbreeding while also understanding the genetic conditions that underlie these diseases. This knowledge enables the exclusion of carriers from mating, thereby reducing the likelihood of transmitting genetic diseases to offspring. Usually, congenital anomalies were multiple occurring together with other abnormalities (Hari Krishna, 2023).

The causative factors for macroglossia were complex and multifaceted, encompassing various possible causes and contributing factors. Balaji (2013) categorizes macroglossia based on its underlying causes into four main groups viz., Excessive tissue growth, which includes conditions like Beckwith-Wiedemann syndrome (BWS), congenital hypothyroidism, chromosomal abnormalities, hemi

hyperplasia, mucopolysaccharidosis, and other disorders characterized by abnormal tissue proliferation; Tissue infiltration, which involves conditions such as lymphatic malformations, haemangioma, neoplasms, amyloidosis, and neurofibromatosis, where abnormal tissues infiltrate the tongue leading to enlargement; Pseudo macroglossia seen in conditions like Down syndrome, Micrognathia (small jaw), Muscle Hypotonia (weak muscles), and Angioedema, where factors other than true tissue growth contribute to the appearance of a large tongue; and Inflammation or infection, where inflammatory processes or infections in the tongue produce swelling and enlargement, contributing to macroglossia.

Understanding these diverse etiological categories was crucial for accurate diagnosis and appropriate management of macroglossia in clinical practice.

In humans, for treating macroglossia surgical correction could be done by partial glossectomy to reduce the size of the tongue. Whereas, Lamond *et al.* (2008) observed, a great reduction in tongue size following the injection of steroid at the base of traumatic tongue swelling. However, there was no such reduction in tongue size in the present case indicating that macroglossia was due to tissue proliferation. Owner was not willing for surgery.

Congenital anomalies of the salivary glands were

often associated with atresia of the parotid duct, producing a fluid-filled swelling proximal to the obstruction site, which could be left untreated and simply be monitored. In a unilateral salivary duct atresia, salivary function loss was insignificant except for a cosmetic defect. The condition could be treated by marsupializing the duct, proximal to the obstruction, into the oral cavity. However, this was practically difficult as the duct's unobstructed functional portion was always more caudal than the anatomical opening (Bristol and Fubini, 1990). The Stenson's duct ectasia was commonly registered in calves, being congenital (Mosbah *et al.*, 2023).

Congenital macroglossia and salivary cysts were the conditions reported to be very rare in occurrence and difficult to manage.

Conflict of interest: Authors have no conflict of interest in this study.

Author's contribution: KGR: Attended the case and involved in preparation of manuscript; NVVHK: Attended the case and involved in preparation and correction of manuscript.

Data availability statement: It is a clinical case report and all the available data was given.

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