

ORAL COMMISSURAL RECONSTRUCTION IN A BUFFALO CALF WITH CONGENITAL DEFECTS

Vivek Malik*, Ajeet Singh and Rudra Pratap Pandey

ABSTRACT

A two days old buffalo calf was presented with the congenital malformation of the oral commissures in a calf. The buccal muscles were not fused on both sides resulting in to the extension of oral commissures up to the first premolar tooth. The animal was not able to hold the tongue in the oral cavity proper and it was protruded out from the either side of the defect. The animal was unable to suckle and dull and depressed. Surgical reconstruction of the bilateral defect was done under sedation with diazepam (1 ml i.v.) and local infiltration of lignocaine (2%) at the site of repair. The wound was closed in a routine manner. Postoperatively, antibiotic was administered parentally for three consecutive days and antiseptic ointment was applied over the sutured wound edges till complete healing of the wound.

Keywords: *Bubalus bubalis*, buffaloes, calf, congenital defects, oral commissure, reconstruction

INTRODUCTION

Congenital anomalies occur in one or more systems characterized by structural and functional

abnormalities of related systems, which are present at birth (Badaway, 2011). Transverse facial cleft is a rare congenital anomaly (Tessier, 1976). This developmental aberration results from failure of fusion of the maxillary and mandibular processes of the first branchial arch (Eguchi *et al.*, 2001). There are many facial defects involving lips, jaws, and palate have been reported in different species of animals (Brown *et al.*, 2007). These facial deformities could be encountered either alone or in combination with some other malformations involving vertebral column *viz.* scoliosis, torticollis, and arthrogyrosis (Oryan *et al.*, 2011). The incidence of craniofacial and skeletal deformity has been recorded higher in other species of animals in comparison to cattle and buffaloes (Noden and De Lahunta, 1985; Moritomo *et al.*, 1999). The etiology of Congenital facial defects can result from defective genetics or environmental factors or a combination of both (Shukla *et al.*, 2007). There are several environmental factors like maternal nutritional deficiencies, exposure to harmful drugs or chemicals, infections and some mechanical interferences with the fetus, during the early gestation have also been found as the causative agents for such facial anomalies (Gelberg, 2007; Bendemkiran *et al.*, 2009). Transverse facial cleft (extension of oral commissures) in a new born

buffalo calf is reported in the present paper.

CASE HISTORY AND OBSERVATIONS

A two days old buffalo calf was presented with the history of protruding tongue through the defected lateral commissures. Anamnesis revealed it to be a congenital defect. Clinical examination of oral cavity revealed that the lateral commissures were extended beyond the lateral boundaries of the rima-oris reaching up to the level of first premolar tooth (Figure 1). The animal was not able to suckle and retain the tongue in the oral cavity. The animal was dull and depressed with mild dehydration.

SURGICAL TREATMENT AND DISCUSSION

The animal was rehydrated with 250 ml of ringer lactate and 250 ml of DNS solution. Inj. ceftriaxone (1 gm i.v.) was administered preoperatively. The site was prepared for aseptic surgery after securing the animal in lateral recumbency. The animal was sedated with diazepam (1 ml i.v.) and the site was infiltrated with local anaesthetic (Lignocaine 2%). Starting from the caudal side of the ventral commissural of the defect a full thickness strip of the mucocutaenous tissue was surgically sliced out with No 11 B.P. blade, which was extended up to the rostral part of the defect (Figure 2). Similarly, a full thickness strip of muco-cutaneous tissue was excised out from the dorsal commissural defect (Figure 3). Then dorsal and ventral defects were approximated for closure (Figure 4) Mucosa to mucosa suturing of upper and lower edge of the defect was done with PGA-2 to 0 in simple continuous suture pattern

(Figure 5). In second layer the skin of both upper and lower sides of defect was closed in a horizontal mattress suture pattern using 1 to 0 nylon thread (Figure 6). The owner was advised to give Inj. ceftriaxone (1 gm i.v.) daily for three days and to apply antiseptic ointment over the sutured wound edges after cleaning them with povidone iodine solution till complete healing. Cutaneous sutures were removed after 15 days of surgery. The animal survived without any complication.

Clefts of the face are developmental disorders due to failure of closure in facial processes such as the frontonasal, maxillary and mandibular processes with defects appearing in the lateral or median site of the rostral face as cleft lip, jaw, and palate (Moritomo *et al.*, 1999) as have been reported in cattle, sheep, goats, horses, and humans (Gelberg, 2007). Cleft lip occurs due to a disturbance of the process that form the jaw and face during embryonic development and is more commonly unilateral than bilateral. It is not surprising that the condition is usually associated with other defects because of many facial structures developing simultaneously. Almost always present is malformation of the mandible and/or the ear (Sperber, 1981). The factors that could be responsible for the development of defect in lateral commissure are genetic and environmental; Moreover, failure of tissues to interact with each other at the right place and time may also cause congenital abnormalities, even though the genotype and environment are normal (Rousseaux, 1988). However, as in the case presented here, it is often impossible to identify a specific etiological factor. The finding of such condition, as other developing anomalies, is not frequently reported in veterinary literature for buffaloes. The successful surgical treatment of the anomaly is reported in this paper.



Figure 1. Case on presentation with protruded tongue through the left lateral commissural defect.



Figure 2. A full thickness strip of muco-cutaneous tissue was excised out from the ventral commissural defect.



Figure 3. A full thickness strip of muco-cutaneous tissue was excised out from the dorsal commissural defect.



Figure 4. The dorsal and ventral defects are ready for closure.



Figure 5. Mucosa to mucosa suturing with absorbable suture material.



Figure 6. After final closure of the skin.

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