

Management of cervical scoliosis using an indigenously designed spinal brace in a buffalo calf

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Abstract:

A four month old buffalo calf with a symptom of deviation of neck to its right side was diagnosed to have scoliosis of neck. Correction of deviation by manual traction followed by stabilization with braces for cervical spine besides anti-inflammatory and supportive therapy yielded a good outcome without any complications. The etiology, clinical symptomology and steps involved in its management were discussed.

Key words: Cervical Scoliosis; neck splint; torticollis, calf; *Bubalus bubalis*

Introduction

Scoliosis of neck otherwise called as torticollis (in Latin, Tortus means twisted and collum means neck) or wry neck or loxia is a condition, that involves contracture of neck muscles. It can be defined as a dystonic condition characterized by abnormal and asymmetrical deviation of the neck due to variety of causes. This condition is frequently seen in equines, caprines and canines and less frequent in bovines and can result from abnormal intrauterine fetal presentation in congenital cases or from trauma to cervical vertebrae and muscles in acquired cases (Kim *et al.* 2006). The origin of this condition is either myositic due to trauma to neck muscles or idiopathic (Davis, 1993). Unilateral neck deviation is usually observed whereas persistence of deviation is observed in myositic torticollis when the treatment is delayed. Treatment can be aimed by administration of muscle relaxants, anti-inflammatory drugs and physiotherapy as early as possible. In the present paper, management of scoliosis of neck in a buffalo calf was described.

Material and Methods

A 4 month old female graded murrh buffalo calf was presented with a history of deviation of neck towards its right side (Fig-1) for the previous 6 days following direct trauma during an automobile accident. Suckling of milk from dam was found to be difficult due to deviation of neck. On physical examination, the deviation was found reducible, but it was associated with severe pain by animal. Lateral plain radiograph showed neither fracture of cervical vertebrae nor luxation of their facets (Fig-2). Except mild hyperthermia, all the parameters of clinical investigations were in reference ranges suggesting the traumatic etiology. Based on findings of physical examination and radiography the condition was diagnosed as myositic torticollis and the condition was decided to be managed medically.



Fig 1. Cervical torticollis in a buffalo calf

The calf was given Xylazine hydrochloride IM at the dose rate of 0.03mg per Kg body weight for sedation and at the same time for relaxation of cervical muscles. Deviation in the neck was corrected by manual traction and the same was stabilized by an indigenously designed aluminum splint (Fig-3) along with padded plaster of paris cast (Fig-4). A 4 mm thick aluminum sheet was molded in the form of a Travis comprising two semi lunar bars one each at the cranial and caudal ends and two connecting cross bars on either side. The dimensions of the semi lunar bars conformed to the curvature of the neck at two places and length of the cross bars fitted the length of the neck. This was well padded with non absorbent cotton so as not

to damage the soft tissues. Anti-inflammatory drugs like injection Meloxicam was given intramuscularly at the dose rate of 0.2 mg per Kg body weight for five days besides supportive therapy with vitamin AD₃E and Selenium and vitamin E (E-Care Se[®]) injections for 7 days. From third day onwards, cyclobenzaprine 10 mg tablets were administered orally @ one per day for a period of 15 days.

Result and discussion

Following thirty days of treatment, the plaster of paris cast was removed and the animal was able to move its head and neck with some symptoms of pain. Actinotherapy with infrared rays was initiated thereafter for 15 consecutive days which could mitigate the pain completely. The calf was assisted to suckle its dam due to the presence of the braces. Finally, by 45 days after treatment, the calf was able to move its head and neck normally in all the directions and was able to take milk and feed normally.

Torticollis in buffaloes can be inferred as a rare condition, as it appears to the knowledge of the authors that, no reports are available in this species. Kim *et al.* (2006) opined that, this condition is frequent in horse, goat and dog but less frequent in cattle. Few authors like Chandana *et al.* (1982) and Mallikharjunarao *et al.* (2006) reported the congenital form of this condition in calves. The etiology responsible for scoliosis of neck in the present case is direct trauma to neck musculature in an automobile accident. The present condition was considered as myositic torticollis due to spasms and myositis of the neck musculature. Keeping in view, the bad prognosis that might result in delayed treatment in myositic torticollis, the treatment was initiated immediately after its presentation. Xylazine hydrochloride by virtue of its muscle relaxation property might have aided in the



Fig-2: Ventrodorsal radiograph of neck showing deviated cervical spine



Fig-3: Photograph showing aluminum neck braces for stabilization of neck



Fig-4: Photograph showing the calf with Plaster of Paris cast around the neck

manipulation of the neck at the time of reduction of the deviated spine. Muscle relaxants like cyclobenzaprine and anti-inflammatory drugs given to the animal in the present case aided in relaxing the cervical muscles and reduced their inflammation. Similar treatment was also given by Davis, (1993) in animals affected with myositic torticollis and obtained good results; Whereas Mallikharjunarao *et al.* (2006) opined that, this treatment modality had a marginal outcome in animals with congenital torticollis where the ligamentum nuchae and

intertransversalis colli muscles were affected. The preparation of device appeared very simple from a malleable metal like aluminum sheet, and was inexpensive too—Manual correction of torticollis and stabilization with metallic splint and plaster of paris cast besides anti-inflammatory and supportive therapy, yielded a remarkable recovery in the buffalo calf.

A rare case of torticollis in a buffalo calf was managed by manual correction or reduction, stabilization with aluminum braces and by administration of muscle relaxants and anti-inflammatory drugs which helped in decreasing the inflammation and improving circulation to the cervical muscles. Owners should be educated about this type of condition as there is no need to cull the valuable progeny.

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