

SURGICAL MANAGEMENT OF CONGENITAL FLEXOR TENDON DEFORMITY IN CALVES: A REVIEW OF TWO CASES

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Abstract: Two non descript calves aged 5-10 days were presented to the State Institute of Animal Health, Tanuku with a history of being unable to stand and walk properly and placing the hind limb improperly since birth. On physical and clinical examination, the calf was diagnosed as bilateral congenital flexor tendon contracture. Superficial and deep digital flexor tenotomy was performed and a PVC splint applied post-surgically. The calves were able to walk and place his hind foot properly from the 14th post-operative day.

Keywords: Congenital defects, contracted flexor tendon, PVC splint and tenotomy.

Introduction

Congenital defects are defined as abnormalities in structure or function present at birth. Contracted tendons are a common congenital problem, more prevalent in the calf with in 1 or 2 weeks of age (Salas, 2021 and Steiner, 2014). More frequently fetlock joint, rarely carpal joint affected and usually forelimbs affected than hind limbs. Due to affection of tendon animal inability achieve or maintain the normal extension of the limbs (Anderson *et al.*, 2008). Etiology includes inherited factors (autosomal recessive gene), *in-utero* malpositioning, large size of foetus, toxicity and mineral and vitamin deficiency during pregnancy (Kumar *et al.*, 2012). The present report describes the successful surgical management of contracted flexor tendon deformity in 2 calves.

Case History and Clinical Observation

Two non descript calves aged 5-10 days were presented with history of flexed fetlock in both the hindlimbs limbs, difficulty in standing on hoof and bearing weight on the fetlock joint (Figure 1). On clinical examination the calf had normal body temperature, respiration rate and pulse rate. Physical examination of hind limb revealed, knuckling of both the hind limbs at fetlock joint and manual straightening was not possible. The case was diagnosed as bilateral contracted flexor tendon and was advised for surgical correction.

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Surgical Treatment:

The calves were restrained in lateral recumbancy and sedated with Xylazine hydrochloride @ 0.08 mg/ kg body weight. The plantar aspect of both the hindlimbs were shaved, cleaned properly and prepared aseptically for surgery. Local infiltration with 2% lignocaine hydrochloride and adrenaline solution was administered at the site. A 3 cm long incision was given to posterior aspect of cannon bone and exteriorized the tendons. Both superficial and deep digital flexor tendons were separated by blunt dissection. At first the superficial digital flexor tendon was transected and manual pressure was applied to extend the limb but was not successful. So the deep digital flexor tendon was also severed in both the limbs. Fetlock extension and flexion was checked immediately after transection of flexor tendons. The skin is closed with Polyamide 2.0 by a cruciate pattern. After skin closure, PVC splint was applied to the caudal aspect of the metatarsal region from the heel and extended up to the tibia and fibula (Figure 3). Post operatively, the calf was administered with Amoxicillin @ 12.5 mg/kg i.v for five days and Flunixin meglumine @ 1.1mg/kg i.m for three days. The splint was changed once in 3 days. The calf was able to stand and walk properly after the removal splint on the 14th post-operative day (Figure 4).

Discussion:

In new born calves, contracture or shortening of flexor tendon results knuckling of fetlock joints frequently and rarely carpal joints. Flexural deformities are classified as mild, moderate and severe forms. In milder cases, the calves are able to walk on their feet but the heels do not contact the ground. In moderate cases, the dorsal aspect of the claw breaks over a vertical plane perpendicular to the ground and in severely affected animals, walk on the dorsal aspect of the fetlock, pastern or in carpus (Steiner *et al.*, 2014) and if the condition is not corrected septic arthritis of the joint is the usual sequel. There are different techniques which have been adopted for the treatment of contracted flexor tendon in calves, viz. application of splint, POP bandage or fiber glass cast, tenotomy with splint (Patel *et al.*, 2012) and administration of oxytetracycline (Kumar *et al.*, 2012). In the present study, the affected limb was corrected by tenotomy as degree of knuckling was severe followed by application caudal PVC splint, which gave satisfactory result. Many of congenital anomaly could be successfully treated through the surgical intervention that could lead to better aesthesis, increasing the marketability and improving of the cosmetic appearance of the animals (Patel *et al.*, 2012).

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Fig 1: Bilateral contracted flexor tendon in hindlimbs



Fig. 2: Exposed tendons after skin incision.

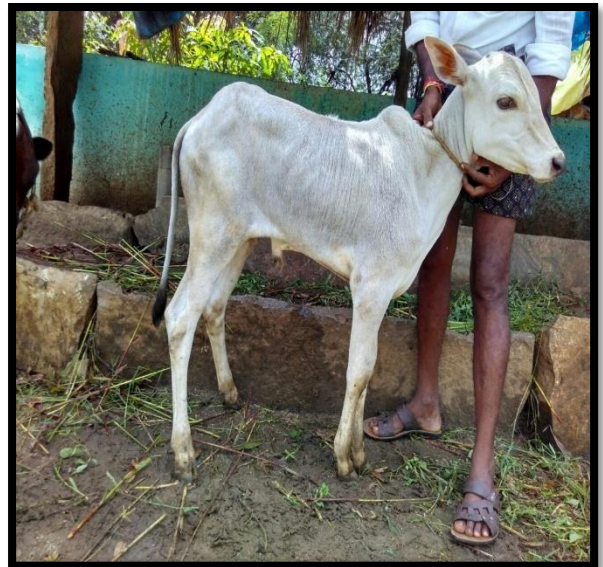


Fig 3: Postoperatively calves bear weight on both the hindlimbs