Intas Polivet (2018) Vol. 19 (I): 81-82 *Short Communication*

Congenital Coccygeal Dysgenesis and Rat Tail Syndrome in a Crossbred calf

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Abstract

A crossbred calf was reported with history of underdeveloped hairless tail since birth. Clinical examination revealed few palpable coccygeal vertebra, hypotrichosis and absence of switch. Radiographic examination revealed presence of first five cocccygeal vertebra. Histopathological examination of tail revealed necrosis of outer most skin and vertebral portion was replaced by primitive mesenchymal elements which consist of fibrous tissue and muscle. Based on clinical, radiological and histological examination, the case was diagnosed as congenital coccygeal dysgenesis and rat tail syndrome. The tail was amputated partially to avoid any further complications.

Keywords: Calf; coccygeal dysgenesis; congenital; rat tail

Introduction

Congenital vertebral anomalies include alterations of shape and number of vertebrae. Coccygeal dysgenesis disorder is associated with varying degrees of agenesis/ aplasia of coccygeal vertebra. The 'rat-tail' syndrome (RTS) is a bovine congenital, inherited hypotrichosis characterized by mis-shaped, curly sparse hair and by missing hairs at the tail switch, which gave the defect its descriptive name (Schalles and Cundiff**,** 1999). Reports on congenital coccygeal dysgenesis and rat tail syndrome is dearth. The report records a bovine calf with coccygeal dysgenesis combined with rat tail appearance.

History and Diagnosis

A seven day old female Holstein Friesian crossbred calf was reported with history of underdeveloped tail since birth. The calf was active and alert with normal suckling habit. Clinical examination of tail revealed few palpable coccygeal vertebra with hypotrichosis nearly half of tail and absence of switch at the end. The hypotrichosis area of tail showed brown to blackish discoloration (Fig. 1). There was no other abnormalities evident in other parts of the body. Radiographic examination revealed presence of only first five cocccygeal vertebra (Fig. 2). Based on history, clinical and findings, the case was diagnosed as congenital coccygeal dysgenesis and rat tail syndrome. Since hypotrichosis area of the tail showed necrosis and gangrene, amputation of tail was decided upon.

Treatment

A tourniquet was applied at the base of the tail. Under ring block local infiltration anaesthesia with 2% Lignocaine Hcl, a 'V' shaped incision was made at the level of 4th coccygeal vertebra. Lateral and medial coccygeal veins were ligated and coccygeal vertebra was cut at the level of third intercoccygeal space (Fig. 4). Simple interrupted sutures were placed using silk 2-0 to appose skin incision (Fig. 3). Post- operatively Inj. Amoxicillin and Sulbactam (Amoxirum forte[a]) @ 15mg/kg b. wt. for five days and Inj. Meloxicam (Melonex[b]) @ 0.25mg/kg b. wt. for two days were administered. The wound was cleaned and dressed daily with Povidone iodine and skin sutures were removed on eighth post-operative day.

Histopathological examination of amputated tail revealed necrosis of outer most skin area with bacterial colonies and infiltration of neutrophils and mononuclear cells. The coccygeal vertebral portion was replaced by primitive mesenchymal elements and consists of fibrous tissue, muscle, fat tissue. It also contained numerous blood vessels and nerves confirming congenital coccygeal dysgenesis and rat tail syndrome.

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Fig. 1 : Rat tail appearance

Fig. 2: Radiograph showing presence of five coccygeal vertebra

Fig. 3: Post-operative appearance of tail

Fig. 4: Amputated part of tail

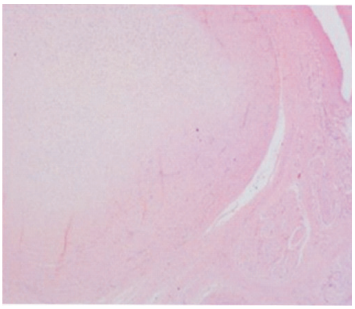

Fig. 5: Histopathology of normal coccygeal vertebra

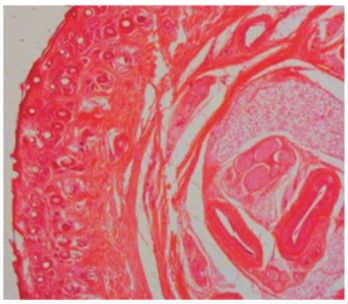

Fig. 6: Histopathology of coccygeal dysgenesis vertebra

Discussion

Congenital absence of tail in calves have been reported by Lotfi and Shahryar (2009) and Williams (2010) but in our case, the animal was having a tail with only five coccygeal vertebra associated with rat tail syndrome.

The 'rat-tail' syndrome is an inherited hypotrichosis in cattle. Rat tail syndrome is known to occur in black breed cattle which are in accordance with the present case.Morphogenesis and normal cellular differentiation must follow a highly synchronized pattern of gene expression and regulation (Jones, 1999). Abnormal development occurs in foetus when genetic and environmental insults overwhelm the foetal compensatory mechanisms. Most tail defects among domestic animals, especially in cattle, have genetic origins and these abnormalities mostly appear in the process of crossing different breeds (Distl and Baohr, 2005). Considering the genetic cause, the owner of the animal was advised not to use the animal for breeding purpose.

Environmental teratogens including nutritional deficiencies and excesses, chemicals, drugs and toxins are also potential causes of skeletal deformities.

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