ARTROGRYPOSIS IN A MURRAH BUFFALO CALF: A CASE REPORT

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ABSTRACT

Some developmental abnormalities may be either due to genetic origin and/or due to the congenital malformation that occurs during embryogenesis in the buffalo. Arthrogryposis may be called of genetic origin if symmetrical contracture of the four legs is present. Here, we present a case report of arthrogryposis in a Murrah buffalo.

Keywords: arthrogryposis, articular rigidity, dystocia, buffalo, congenital defects

INTRODUCTION

Arthrogryposis is a congenital malformation characterized by curvature of the limbs, multiple articular rigidity and muscular dysplasia (Nawrot et al., 1980; Jubb et al., 1993). It is described in humans and in animals including cattle, lambs, piglets and foals. The extent of the malformation is variable, involving one, two, three or all four limbs and the axial skeleton. In mild cases two limbs, usually the hind, are fixed in flexion (Jubb et al., 1993). Arthrogryposis with associated malformations may be hereditary or a phenocopy of a mutant gene(s) effect produced by unknown factors (Nawrot et al., 1980). Homozygosity of a single recessive gene has been proposed as a cause of arthrogryposis in Hereford, Charolais, Jersey and German Black Pied calves (Greene et al., 1973; Nawrot et al., 1980).

This article reports arthrogryposis in Murrah buffalo calf, delivered through caesarian section.

CASE HISTORY

A Murrah buffalo of third parity with complete gestation period was brought to the College Hospital with the a history of labour pain for the last 14 h. The clinical parameters (temperature, pulse, heartbeat) were within the normal range. Per-vaginum examination revealed oedematous birth canal, fully dilated cervix with a fetus in anterior presentation, dorso-sacral position, head in the birth canal and both fore limbs flexed beneath the body. No fetal movements and reflexes were present. Because there was not sufficient space to insert single hand smoothly, the dam was put to the operation theatre to perform caesarian operation.
Animal was administered intravenous fluid, dexamethasone and antibiotics before caesarean section. The caesarean section was performed in left lateral recumbency under local analgesia (2% lignocaine hydrochloride solution) with local infiltration along the site of incision (parallel and lateral to milk vein) following all aseptic precautions. After extraction of the dead male fetus, the uterus was flushed with saline and cleansed. Placental fragments were removed from the exposed uterus, and then uterine incision was sutured using chromic catgut no. 3 employing one suture line with Cushing’s pattern and another line with the Lambert pattern. Following closure of the surgical wound, the dam was put under antibiotic umbrella of parenteral and intrauterine antibiotics.

The dead male fetus had the appearance of curvature and multiple articular rigidity of joints in both fore and hind legs (Figure 1), and so it was named “arthrogryposis” as described by Nawrot et al. (1980). The rest of the anatomical features and internal organs were normal in the fetus.

Arthrogryposis has been described as one of the most frequent defect of the musculoskeletal system and each distinct syndrome could be etiologically different (Greene et al., 1973). Arthrogryposis of genetic origin is characterized

**TREATMENTS**

**DESCRIPTION OF THE MONSTER CALF**

**DISCUSSION**
mainly by symmetrical contracture of the four legs. Greene et al. (1973) reported 188 cases of arthrogryposis in 1,122 calves from different beef and dairy herds. Most calves had arthrogryposis of the four legs and other associated defects, mainly palatosquisis. In Hereford, Charolais, Jersey and German Black Pied cattle arthrogryposis associated with palatosquisis is caused by a single autosomal recessive gene. Hereditary arthrogryposis investigated in Canada, in Charolais calves from different farms, showed a wide variety of expressions. This probably occurs as a consequence of differences in the genetic background, action of modifying genes, or differences in an environmental component (Nawrot et al., 1980). In all affected buffaloes arthrogryposis was observed as a single defect except for one that had additionally brachygnatia (Schild et al., 2003). Bovine arthrogryposis commonly occurs as a syndrome associated with a single or multiple congenital defects (Leipold et al., 1970, Greene et al., 1973).

REFERENCES


Continued from page 323.
