DELIVERY OF ARTHROGRYPOSIS-SCOLIOSIS FETUS IN A BUFFALO THROUGH PARTIAL FETOTOMY

S.P.S. GHUMAN[1], G. NAZIR[2], M.A. GANIE[2] and B. PHAWA[2]

Department of Veterinary Gynaecology and Obstetrics
College of Veterinary Science
Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana-141004 (Punjab)

ABSTRACT

A case of dystocia due to arthrogryposis-scoliosis fetus in a Murrah buffalo and its vaginal delivery is reported.

Key words: Arthrogryposis-Scoliosis fetus, Fetotomy, Vaginal delivery, Buffalo.

INTRODUCTION

Arthrogryposis (curved or hooked joints) is a rare congenital disorder characterized by multiple joint contractures (Swinyard and Bleck, 1985). Arthrogrypotic calves usually show growth retardation, torticollis, scoliosis and restriction of movement of limb joints (Tsuda *et al.*, 2004). Scoliosis is a condition in which the spine of a calf is curved more like a "C" rather than a straight line. The present case report depicts fetotomy operation for the successful vaginal delivery of arthrogryposis-scoliosis fetus in a buffalo.

CASE HISTORY AND OBSERVATION

A full term pregnant Murrah buffalo in its third parity was brought to the university veterinary hospital with the history of severe straining for the last 24 hours and the rupture of water bags at 6-7 hours back. Vaginal examination revealed a fully dilated cervix with moist birth canal. The fetus was in posterior longitudinal presentation and lumbo-sacral position with hooves of both the anterior and posterior limbs extended into the birth passage and the fetus was dead. Examination of the fetus revealed that joints of all the limbs were not movable and vertebral column of fetus was rigidly curved in concave fashion.

TREATMENT

Following epidural anesthesia (10 ml, 2% Lignocaine HCl), birth passage was well lubricated using sodium carboxy methyl cellulose gel (Carmellose-Na 1%, WDT, Garbsen, Germany). After assessing the fetus, fetotomy wire loop (Bovivet, Denmark) was placed around the fetus. This loop also included both the anterior limbs. Thus, cut was given at the lumbar region as well as on the knee joints of fetus (Figure). Thereafter, traction was applied on the posterior limbs and the lumbo-sacral part of the fetus was relieved. Remaining part of the fetus was rotated into anterior presentation and mild traction at the fetal head caused successful delivery of the fetus. Amputated portions of the anterior limbs were located and removed. The complete fetal membranes were removed immediately. The buffalo was discharged with the routine prescription of antibiotics and supportive therapy.

Compared with the normal birth weight of a full-term fetus (51.4±3.5 kg, Madgwick *et al.*, 2005), the body weight of affected calf was 29.5 kg. This confirmed that growth of the fetus affected with arthrogryposis is usually retarded (Bahr *et al.*, 2004). Thorough look at the physical characteristics of the deformed fetus classified the calf to be suffering from arthrogryposis-scoliosis syndrome (Bahr *et al.*, 2004; Tsuda *et al.*, 2004). Term scoliosis was used as the vertebral column of the fetus was rigidly curved like a 'C' and the vertebral joints of thoracic/lumbar region were immovable. Symmetrical arthrogryposis of anterior and posterior limbs was present. There was about 20° flexure of the carpal / tarsal joints and about 40° flexure of the metacarpophalangeal / metatarsophalangeal joints in

combination with a slight lateral rotation of the phalanges causing medial deviation of the tips of contracted digits (Fig).

Arthrogryposis is believed to be due to decreased fetal movements following maternal or fetal neurogenic and myopathic disorders caused by duplication of motor neuron gene, congenital muscular dystrophies, fever during pregnancy or foraging of pregnant animals on plants containing toxic alkaloids (Swinyard and Bleck, 1985; Iannuzzi *et al.*, 2003). These multiple factors affect central nervous system (CNS) or cause muscle degeneration, thus leading to loss of muscle mass with imbalance of muscle power at the joints and collagenous thickening of the joint capsules termed as joint fixation (Swinyard and Bleck, 1985). Scoliosis accompanies arthrogryposis when CNS and spinal cord is malformed and was noticeable in cases of the epidemic attributed to AINOV virus infection in calves (Tsuda *et al.*, 2004).

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Fig : Arthrogryposis scoliosis fetus