

## CLINICAL MANAGEMENT OF DYSTOCIA DUE TO FETAL ARTHROGRYPOSIS IN A CROSSBRED COW

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### SUMMARY

A case of dystocia was handled in a 4-year old crossbred cow having arthrogryposis in fetus with the history of full term pregnancy, signs of labor, and rupture of the water bag since last 6 hrs. Pervaginal examination revealed that the fetus was in anterior longitudinal presentation and lateral deviation of the head and both forelimbs. A dead male calf with arthrogryposed limbs was delivered by manipulation followed by forced traction.

**Keyword:** Arthrogryposis, Crossbred cow, Dystocia, Forced traction, Pervaginal delivery

Feto-maternal disparity arising due to fetal oversize and congenital malformations are the major causes of fetal death at the time of birth and require timely assistance to relieve such dystocia cases to save the life of the dam. Arthrogryposis is a rare malformation of fetus characterized by a congenitally contracted tendon in two or three or all four limbs with flexed or extended joints due to secondary or primary neuromuscular malformation (Kalirajan and Senthilkumar, 2017). This has been reported in cattle, buffalo, horses, sheep and pigs (Latshaw, 1987; Shukla *et al.*, 2007). The incidence of such anomaly is more in the Angus and Charolais breeds, though has been sporadically observed in almost all the breeds of cattle (Windsor *et al.*, 2011). The present case reports a rare case of dystocia due to an arthrogryposed fetus in a crossbred cow which was relieved by the manipulation and forced traction.

A 4-year old crossbred cow in second parity was brought to Teaching Veterinary Clinical Complex (TVCC), Faculty of Veterinary Sciences and Animal Husbandry, R.S. Pura, Jammu with a history of a full-term pregnancy, signs of labor since 6 hrs, ruptured water bags. The cow recorded rectal temperature of 38.5 °C, respiration rate 28/min and heart rate 75/min. Per-vaginal examination revealed fully dilated and partially moist birth passage with loss of fetal fluids. The fetus was in anterior longitudinal presentation with both forelimbs in knee flexion and lateral deviation of the head and neck. The limb joints were severely contracted and not movable which struck at the pelvic brim. The fetus was declared dead as it had no reflexes on pressing interdigital space.

Treatment started with induction of epidural anesthesia (5 ml of 2% Lignocaine hydrochloride) and lubrication of birth passage by infusing 4-5 liters of lubricant (using 2% carboxymethyl cellulose in lukewarm water). Since the limb joints were rigid and extension of the limb was not possible, one of the forelimb was amputated from the knee joint using a scalpel blade. The

deviation of the head and neck was corrected by repulsing the fetus in the uterus and manipulation of the head by hand traction on the fetal snout. When the head of the fetus engaged in the pelvic brim, traction was applied using blunt long handle eye hook fixed in the inner eye canthus of the fetus. After extraction of the fetal head from the birth canal, the flexed forelimb was manually pulled while it remained in the partial knee flexion (Fig.1) due to congenital contracted tendon. After extraction of the fetal thorax, the fetus was found stuck in the pelvic cavity due to the fixation of the hock joint of the fetus in the maternal pelvic shaft. Traction was given on the fetus while rotating it like a screw and traction directed to downward parallel to the hind limb of the cow, which relieved the dystocia. Treatment was given to the cow to control pain, dehydration and shock. The placenta was expelled normally after 45 minutes of the dystocia and the case was discharged after 2 hrs of the treatment when the cow was able to stand and walk normally.

The cow was treated with 5% DNS (5000 ml) and NS (5000 ml) intravenously. Injection of Enrocin (Enrofloxacin), 5 mg /kg bw, Gentamycin (Gentamycin Sulphate), 4 mg/kg bw, Melonex (Meloxicam), 0.5 mg/kg bw were administered intramuscularly and liquid HimROP Vet (Himalaya), 100 ml B.I.D per os. Four Boli of furea were placed in the uterus. The owner was advised to continue the treatment for next 5 days. Injection Dexamethasone, 60 mg and Oxytocin 20 IU were given intravenously on the day of treatment only. The follow up of the case showed uneventful recovery.

Malformation in the fetus may result during gestation by the expression of an autosomal recessive gene with complete penetrance in the homozygous state (Goonewardene and Berg, 1976) or by infection with some of the viruses (Dennis and Leipold, 1979; Rousseaux and Ribble, 1988). The congenitally malformed fetus is characterized by mild to extreme curvature of limbs,

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Fig. 1. Arthrogryposed fetus

articular rigidity and muscular dysplasia (Nawrot *et al.*, 1980) in one or all the limbs. The presentation of the fetus is frequently associated with torticollis (Singh *et al.*, 2019), pelatoschimiasis and kyphoscoliosis (Morrow, 1986). The present dystocia was caused by the relative fetomaternal disproportion by the presentation of arthrogryposed fetus, though the possible cause of malformation in the present case could not be ascertained.

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