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Clinical Article

SUCCESSFUL MANAGEMENT OF DYSTOCIA DUE TO FETAL ARTHROGRYPOSIS IN RED KANDHARI COW

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SUMMARY

A 7 years old, 8 months pregnant Red Kandhari cow previously handled by local vet that failed to relieve the fetus and had history of reddish vaginal discharge was referred to the Veterinary Clinical Complex, College of Veterinary and Animal Sciences, Udgir. Per-vaginal examination revealed completely dilated cervix and fetus with posterior longitudinal presentation with flexed hind limbs. A dead male fetus was delivered with traction. Arthrogryposis of fetus was observed. The cow recovered uneventfully after 3 days of treatment.

Keywords: Ankylosis, Fetal arthrogryposis, Red Kandhari

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Various kinds of foetal anomalies and monstrosities causes dystocia in cows (Mir *et al.*, 2015). Monstrosity refers to an abnormality in the process of growth and maturation that encompasses multiple organs and systems, leading to significant distortion of the affected individual (Rangasamy *et al.*, 2019). Monster is a fetus in which developmental defects, affect the functions of more than one organ of a developing fetus. They are born either dead or alive but die within a few hours after birth. Fetal arthrogryposis is a rare congenital disorder affects several livestock species and characterized by muscle dysplasia, multiple articular stiffness and limb curvature (Sharma and Kumar, 2017).

It is a congenital malformation of the fetus characterised by ankylosis of various joints, in various degrees of flexion or extension of jointsas well as the spine resulting in lordosis, kyphosis, or scoliosis and emerged in cattle (Noakes *et al.*, 2019). Muscle contracture monsters are usually produced by general functional ankylosis with an abnormal development of muscles and tendons, causing an immobility and extreme rigidity of the affected limbs (Robert, 2004). The present case of a Red Kandhari Cow suffering from dystocia due to arthrogryposis and ankylosis of fetus is discussed.

A 7 years old pluriparous Red Kandhari cow was referred to obstetrical ward, Veterinary Clinical Complex, College of Veterinary and Animal Sciences, Udgir with the history of reddish vaginal discharge since a day (Fig. 1). The cow was 8 months pregnant. Fetal limbs were visible hanging out of vulva along with reddish bloody discharge and ruptured water bag. The cow was in right lateral recumbency with 102º F temperature and 32/min respiratory rate. On history, the case was previously handled by a local vet. Previous calvings of the animal were normal. On per-vaginal examination, the vaginal passage was dilated and the cervix was opened but the foetus was in abnormal posterior longitudinal presentation, lumbo-sacral position with both the hind limbs are flexed at the hock joint. The fetus was severely contracted, rigid and immobile stifle, hock and fetlock joints of both the hind limbs. Foetal movements and other fetal reflexes were absent indicative of dead fetus.

The Red Kandhari cow was properly restrained in right lateral recumbency and inj.Carbazochrome salicylate 15 ml (Adchrome®, G. Loucatos & Co.) was given intramuscularly to reduce the per-vaginal bleeding. The perineal region and vaginal passage was thoroughly cleaned with 0.1% $KMnO_4$ solution and birth canal was lubricated with ample amount of 2% high viscosity carboxy methyle cellulose gel. A rope was applied on both flexed hind limbs at fetlock jointof fetus. The fetus was manually repelled and passed back into uterine cavity to create operational space for obstetrical manoeuvres.

The flexion of hind limbs was corrected by mutational operation, then with the help of two assistants, gentle two way forced coordinated traction was applied on hind limbs and eventuallya dead male fetus was delivered without any complicities. The cow was treated with inj.Isoxsuprine hydrochloride 10 ml i.m once, inj. Chlorpheniramine maleate 10 ml i.m, inj. Ceftriaxone and tazobactum 3375 mg i.m along with Introvenous fluid therapy with dextrose normal saline for 3 days, Bol. Herbal intrauterine and Antibacterial action once, Calcium-

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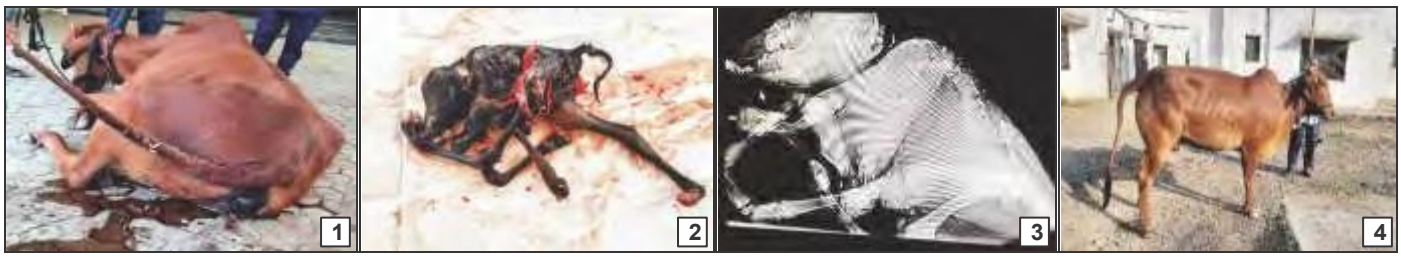

Fig. 1-4. **(1)** Reddish bloody vaginal discharge; **(2)** Ankylosis of the joints; **(3)** Radiological projection showing abnormality of vertebral column, Scoliosis and Brachygnathism; **(4)** Cow after delivery of fetus and treatment

magnesium-borogluconate 450 ml i.v. once. Cow recovered from lateral recumbency just after the delivery and treatment (Fig. 4).

By visual examination, it was noticed that the fetus had constricted neck and spinal cord together with ankylosed joints of all the limbs and improperly developed hindquarter (Fig. 2). In radiographic examination, it was found that the fetus has visibleunderdeveloped lumbar vertebrae, under developed lower mandible (Brachygnathism), Scoliosis, Constricted superficial and deep digital flexor tendon (Fig. 3). The characteristics of the deformed fetus were indicative of a condition known as Arthrogryposis (Malik *et al.*, 2016). Arthrogryposis is a severe form of constricted tendon that results in several joints being flexed position. It is one of the reported congenital abnormalities in cattle (Prasad *et al.*, 2010; Sharma *et al.*, 2010), buffalo (Singh *et al.*, 2019; Dutt *et al.*, 2021).

Arthrogryposis caused by congenital defect (Prasad *et al.*, 2010). Arthrogryposis can also be caused by prenatal infections with Akabane virus and Bluetongue virus (Hartley *et al.*, 1977; Sharma *et al.*, 2010) commonly caused by plants containing alkaloid toxin ingested during gestation (Robert, 2004; Sharma and Kumar, 2017) suppression of foetal mobility during crucial gestational phases caused by an alkaloidal toxin (Malik *et al.*, 2016). The current foetal arthrogryposis case was successfully delivered with manual correction, co-ordinated traction and uneventful recovery of the dam. On follow up, the cow showed estrus after 120 days with normal estrus discharge and bred naturally. Pregnancy diagnosis yet to be needed.

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