



Janiceps Perosomus Elumbis: A Rare Fetal Monstrosity in Holstein Friesian Cattle

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ABSTRACT

The present clinical article reports a rare case of *Janiceps Perosomus elumbis* fetal monster in a Holstein Friesian (HF) cross bred cattle and its successful per-vaginal delivery using partial fetotomy. A HF crossbred cattle was presented with history of completed gestation period with rupture of water bag 6 h ago and straining with failure of delivery of fetus per-vaginum. The animal was examined at field level and both forelimbs were pulled by the local paravet with retention of head inside the birth canal. Per-vaginal examination revealed fetus in anterior longitudinal presentation, dorso-sacral position with both forelimbs extended in birth canal and two heads. The fetotomy was done for decapitation of both the heads. Then, the fetus was delivered per vaginal by traction. The fetal monster was enumerated as “*Janiceps Perosomus elumbis*” as the two heads were facing opposite to each other with absence of vertebrae after thoracic region.

Key words: *Perosomus elumbis*, Cattle, Dystocia, *Janiceps*, Monster.

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INTRODUCTION

Congenital fetal monstrosities are not uncommon clinical finding in dairy cattle where multiple anatomical defects could be found in the fetal monsters. Although, the exact etiologies for these conditions are not known but their clinical presentation sometimes causes life threatening condition to the dam along with the loss of calf crop. The incidence of fetal monstrosities as a cause of fetal dystocia has been reported to be 16% (Sharma *et al.*, 1992a). Conjoined twins arise from the single zygote with duplication of some or all body parts where *Janiceps* is the term

defined for a monster with two faces on opposite sides of the head (Roberts, 1971). It is a rare fetal monstrosity with meager reports in the bovine literature (Sathiamoorthy *et al.*, 2011).

Perosomus elumbis (PE) is a lethal congenital fetal monstrosity seen sporadically in HF cattle mainly and characterized by a lack of vertebrae and spinal cord caudal to the thoracic region and usually associated with ankylosed hindlimbs, atrophy of musculature and deformed pelvis (Roberts, 1971; Agerholm *et al.*, 2014). The first report regarding PE in the bovine is referred to 1832 by Jones who reviewed literature on bovine PE (Windsor, 2019).

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The recent reports have suggested that there could be genetic etiology behind the PE monstrosities in HF cattle (Agerholm *et al.*, 2014). PE abnormality has also been reported in Online Mendelian Inheritance in Animals (OMIA) as OMIA 000789 in HF cattle (Agerholm *et al.*, 2014). The perusal of literature revealed that there is no finding reporting the occurrence of facial abnormality of *Janiceps* along with the PE syndrome in HF cattle. This case report presents a rare fetal monstrosity in a crossbred cattle and its successful per-vaginal delivery after decapitation via partial fetotomy.

CASE HISTORY AND OBSERVATIONS

A HF cross bred cattle in its 2nd parity was presented in the university clinics with history of completed gestation period with rupture of water bag 6 h ago. The animal was straining with failure of delivery of fetus per-vaginal since rupture of water bag. The animal was examined at field level and both forelimbs were pulled by the local paravet with retention of head inside the birth canal. The general clinical examination of the animal revealed temperature 101°F with normal pinkish mucus membranes and normal vital parameters. The per-vaginal examination of the animal was done with proper lubrication using 2% carboxymethyl cellulose (CMC) gel (Honparkhe *et al.* 2009). The fetus was in anterior longitudinal presentation with both forelimbs extended in birth canal with palpation of two heads inside. The presumptive diagnosis made was that it could be a case of dicephalus monster. Therefore, fetotomy was chosen as obstetrical operation of choice for successful per-vaginal delivery of the monster.

TREATMENT AND DISCUSSION

The animal was treated with fluid therapy (Normal saline 2litre, Dextrose normal saline 3litre) along with antimicrobial (Ceftiofur @2.2mg/kg b.wt), analgesic (Flunixin meglumine @2.2 mg/kg b.wt.) and steroid (Dexamethasone@20 mg total dose) before starting of fetotomy. Complete threading was done in the Thygeson's fetotome and the loop of wire saw was passed from both heads to reach at the level of atlanto-occipital joint. The head of the fetotome was placed behind the posterior borders of both mandibles and decapitation of both the heads was done. After decapitation, the heads were removed and both forelimbs which were secured before fetotomy; tied using obstetrical chains and the stump of neck was covered with skin over it and by putting hand. Then, the fetus was

delivered per vaginum by traction on both the fore limbs. The fetal membranes were also removed after delivery of the fetal monster.

After delivery of the fetal monster the animal was treated medicinally with calcium therapy (calcium magnesium borogluconate 450 ml slow IV) and fluid therapy and was subjected to treatment for next five days consisting of antimicrobials, analgesic and ecboic. The animal recovered uneventfully and started intake of feed and water next day with milk yield of 16 Kg after 20 days post-partum (asked telephonically to owner).

The delivered fetal monster was having two faces on the opposite side of the two heads with four ears, four eyes along with the absence of vertebral column posterior to thoracic region so, it was designated as "*Janiceps Perosomus elumbis*" (Fig. 1, 2). The tail was present as well as the contracture in the hind limbs was not evident. PE is a spinal cord deformity found mainly in HF cattle and has been reported to be having a genetic causality (Agerholm *et al.*, 2014). A 6.7 kb deletion in the COL2A1 gene in a Holstein calf with achondrogenesis type II and perosomus elumbis has also been reported (Jacinto *et al.*, 2021). PE has been reported earlier in crossbred cattle as well as in buffaloes by many workers (Tiwari *et al.*, 2011; Mehmood *et al.*, 2014; Jasmer and Kumar, 2016) but, its reporting in association with facial deformity was lacking prior. The poor development of the lumbar and sacral region of fetus leads to pelvic deformity as well as arthrogryphosis and hind limb muscle contracture resulting in fetal mortality (Roberts, 1971; Agerholm *et al.*, 2014) but, in the current report the contracture in hindlimbs was not much evident as well as the tail of fetus was present.

Usually, the dystocia due to PE occurs at the posterior region where posterior limbs ankylosis usually develops (Jana and Jana, 2010) which is contrary to the present report as there was facial abnormality including the double face on opposite side of head resulting in dystocia at anterior part. Fetotomy is the obstetrical operation of choice for management of fetal monstrosities if there is adequate space for the placement of the fetotome and wire saw because it will prevent the dam from cesarean section as well as there will be greater chances of survivability of dam (Sharma *et al.*, 1992a; 1992b). The present case findings are not in agreement with Tiwari *et al.* (2011) as well as Son *et al.* (2008) where cesarean section was opted as the method of delivery of PE fetus instead of using fetotomy for per-vaginal delivery.

Janiceps like abnormality has also been meagerly reported in the veterinary literature where Sathiamoorthy *et al.* (2011) reported a case of *Janiceps* fetal monster along with



Fig. 1: *Janiceps Perosomus elumbis* fetal monster with two faces on opposite side of head, depressed lumbar region depicting absence of vertebrae.



Fig. 2: Two heads facing opposite sides along with the site of fetotomy cut showing complete decapitation

uterine rupture in a cow. It has been reported that duplication of cranial part of the fetus is more common than that of caudal parts (Roberts, 1971) which is in agreement with the present case where only duplication of head and face was observed while posterior parts were not duplicated.

CONCLUSIONS

Therefore, this case report presents a concurrent occurrence of rare facial anomaly (*Janiceps*) along with *perosomus elumbis* in a HF crossbred cattle and use of partial fetotomy for successful delivery of monster per-vaginally.

CONFLICT OF INTEREST

None.

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