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A case of prolonged gestation and breech presentation with abnormal fetus having cleft palate-lip complex

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Abstract

A pluriparous Holstein Friesian Crossbreed cattle was presented at Veterinary Clinical Complex DUVASU, Mathura with the history of prolonged gestation (10 month 5 days) with bilateral abdominal enlargement and loss of appetite since one month. Animal was off-feed in the past 2 days. Respiration rate, heart rate, temperature was within normal range. Per-vaginal examination revealed closed cervix. Per-rectal examination revealed large fluid filled uterus, placentome and fetus. Parturition was induced. After 28 hours of induction, second prostaglandin treatment also given. Fetus was in breech presentation. A dead male abnormal fetus having cleft palate-lip complex was delivered by assistance.

Keywords: Prolonged gestation, cleft palate-lip, fetus, parturition

Introduction

Parturition in cattle initiated by rising cortisol levels in the fetus that provokes a cascade of endocrine activity in the dam. Fetal cortisol increases as a result of increased adrenocorticotrophic hormone production by the maturing fetal pituitary caused by fetal stressors such as hypoxia and hypercapnia [4]. True prolonged gestation of a living fetus is relatively rare and is due to a defective hypothalamic-pituitary-adrenal axis [4]. In bovine fetus, fusion of the facial fissure and palate formed at day 34 and 56 of gestation, respectively. Exposure of fetus to teratogen during this critical period may bring the failure of the fusion of the facial fissure and/or palate in early embryogenesis [2]. Prolonged gestation in dairy cattle results from fetal anomalies and requires differentiation from fetal loss or fetal mummification because affected cattle fail to show signs of impending parturition at their due date [3].

Case history and clinical observations

A pluriparous Holstein Friesian crossbred cattle (4th parity) was presented at V.C.C. DUVASU, Mathura with the complaint that parturition was not progressing even the gestation period was prolonged (10 months 5 days). Gradual increase in abdominal size within last few months was also observed by the owner. There was also history of decrease in appetite of the animal in the last one month. Physical observation from rear end of dam manifested appreciable bilateral abdominal distention (Figure1). Animal was having normal temperature, heart rate and respiration rate. Per-vaginal examination revealed closed cervix. Texture of cervical tissue was slightly harder. On per-rectal examination, large fluid filled uterus, placentome and fetus were palpable. Therefore it was decided to go for induction of parturition.

Treatment

Parturition was induced with cloprostenol Na @ 500µgm IM, valethamate bromide @ 48mg IM, dexamethasone @40mg IM, and estradiol benzoate @ 2mg IM. Upto 28 hours there was no improvement in cervical dilation, therefore second injection of Cloprostenol Na @ 500µgm given. After 14 hours of second prostaglandin injection, cervix was completely dilated and copious amount of fluid came out which was mucoid in nature (Figure-2a). On per-vaginal examination, fetus was in posterior longitudinal presentation with bilateral hip flexion (breech presentation). However the fetus was dead as no anal reflexes were present. Initially, well lubricated gloved hand was inserted through vulva and fetus was repelled inside birth canal to

create some space for correction of presentation. After correction, a dead male fetus with abnormal cleft palate-lip complex (Figure 3a,b) was delivered.

Discussion

The incidence of craniofacial skeletal defects of cleft lip, jaw, and palate has been reported to be very rare [9]. In the present case, management of prolonged gestation concomitant with breech presentation and cleft Palate-lip complex was performed successfully. Clefts of the face anomaly occurs due to failure of closure in facial processes such as the frontonasal, maxillary and mandibular processes [13]. Cleft palate (harelip) includes developmental anomalies of the lips anterior to the nasal septum, columella and premaxilla and secondary cleft palate (cleft palate, palatoschisis) results from failure of ingrowth of the palatine shelves from the maxillary processes which results in a central cleft that communicates between the oral and nasal cavities [6]. The defects appear in the lateral or median site of the rostral face as cleft lip, jaw and palate [1]. Apart from genetic factors, drugs, infectious agents, metabolic disturbances and environmental pollutants have been incriminated in the etiology of facial clefts [9]. A case of rare cleft palate-lip complex associated with macroglossia and absence of facial bones was reported in crossbred cattle where delivery required caesarean section [12]. In recent literature, a case of bilateral cleft lip-jaw-palate was reported in Holstein Friesian crossbred cow and fetus was delivered by decapitation and detrusion foetotomy [7]. Prolonged gestation with craniofacial defects in the fetus has been reported in Holstein-Friesian, Ayrshire, Guernsey, and Jersey breeds of cattle and is thought to be caused by a recessive gene. There is no spontaneous parturition in affected cattle because of the nonfunctional or absent pituitary gland in the fetus [5]. The prepartum rise in fetal cortisol stimulates the expression of the enzyme 17 alpha-hydroxylase-C17 (CYP 17) and cyclooxygenase 2 (COX2) in the uninucleated trophoblastic cells of the bovine placenta [11]. These enzymes play a key role in the synthesis of oestrogen and prostaglandin by the placenta, which are responsible to initiate parturition. In cattle, sheep and goats it was observed that prolonged gestation was usually associated with abnormalities of the fetal brains and adrenal [8]. In the present case, gross

examination of dead male fetus showed cleft palate-lip complex which showed the defective development of the fetus during embryogenesis.



Fig 1: Bilateral abdominal distention



Fig 2a: Gushing of viscous and syrupy fluid from vagina



A.



B.

Fig 3a&b: Fetal head anomaly

Conclusion

Cases of prolonged gestation associated with abnormalities of the fetal brains can cause further complications if not treated at appropriate time. Breech presentation of fetus can be delivered per-vaginally if there is sufficient space inside the uterus.

References

1. Barker IK, Van Dreumel AA, Palmer N. The alimentary system: The oral cavity. In: Jubb KVF, Kennedy PC, Palmer N (eds.): *Pathology of Domestic Animals*. Edn 4, Academic Press, San Diego. 1993; II:1-31.
2. Evans HE, Sack WO. Prenatal development of domestic and laboratory mammals, Growth curves, external features and selected references. *Anatomia, Histologia, Embryologia*. 1973; 2:11-45.
3. Hillman R, Gilbert R. Rebut's Disease of Dairy Cattle, Edn 3, Elsevier Inc. Philadelphia, USA. 2008, 431-432.
4. Jackson PGG. Prolonged gestation in cattle and sheep. In: *The Merck Veterinary Manual*. 9th edn. Ed M. A. Kahn. Whitehouse Station, Merck. 2005, 1137-1141.
5. Jackson PGG. Prolonged gestation associated with fetal deformity In: *MSD Veterinary Manual*, White house Station, Merck, 2013.
6. Jubb KVF, Kennedy PC, Palmer N. *Pathology of Domestic Animals*, Edn 3, Academic Press, Orlando. 1985.
7. Kalirajan R, Uma Rani R. Congenital bilateral Clift Lip-jaw-palate in a male Holstein Friesian crossbred calf. *Indian Veterinary Journal*. 2020; 97(02):52-53.
8. Noakes DE, Parkinson TJ, England Gary CW. *Veterinary Reproduction and Obstetrics*. Edn 10, Elsevier, Ltd., Netherlands. 2019, 117-118.
9. Noden DM, De Lahunta A. Craniofacial muscles and connective tissues. In: Noden DM, De Lahunta A (eds.): *The Embryology of Domestic Animals – Developmental Mechanisms and Malformations*. Williams & Wilkins, Baltimore. 1985, 156-195.
10. Roberts SJ. *Veterinary Obstetrics and Genital Diseases (Theriogenology)*. Edwards Brothers Inc., Ann Arbor, Michigan 1971, 52-54.
11. Schuler G, Ozalp GR, Hoffmann B, Harada N, Browne P, Conley AJ. Reciprocal expression of 17 α -hydroxylase-C17, 20-lyase and aromatase cytochrome P450 during bovine trophoblast differentiation: a two-cell system drives placental oestrogen synthesis. *Society for Reproduction and Fertility*. 2006; 131:669-679.
12. Singhal S, Honparkhe M, Kumar A, Singh H, Singh N, Brar, PSA. Case of Rare Cleft Palate-Lip Complex Associated with Macroglossia and Absence of Facial Bones. *Indian Veterinary Journal*. 2016; 93(07):86-87.
13. Smolec O, Vnuk D, Kos J, Bottegaro BN, Pirkic B. Repair of cleft palate in a calf using polypropylene mesh and palatal mucosal flap: A case report. *Veterinari Medicina*. 2010; 55:566-570.