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Management of dystocia due to primary uterine inertia in a dairy cow

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Abstract

Dystocia is a major health concern of pregnant cattle and is a major cause of calf mortality. Dystocia may be maternal or fetal in origin. Primary uterine inertia is a significant cause of maternal dystocia in dairy cattle. Dystocia due to primary uterine inertia was observed in a 5 year-old Holstein Friesian cow with prolonged straining and no progression of parturition. Assisted delivery by forced traction resulted in expulsion of a dead fetus. Postpartum treatment was provided, and the cow recovered uneventfully.

Keywords: Dystocia, holstein friesian, dairy cattle, fetus, etc.

Introduction

Dystocia, a term derived from the Greek words *dys*, meaning difficult, and *tokos*, meaning birth, refers to an abnormal or difficult labor that can compromise both maternal and fetal health (Youngquist R.S. & Threlfall W.R, 2006) ^[1]. It is the inability of the dam to deliver its young through its own effort (Jackson, 2004) ^[2]. It is highly prevalent in mammals, especially in cattle worldwide, with incidences of 1.5–6.6% in dairy cows and 4.1–8.7% in beef cows (Mee, J.F. 2008; Citek, J *et al.*, 2011; Mee, J.F. 2008; Edwards, S.A 2009 & Whittier, W.D *et al.*, 2008) ^[3, 4, 3, 6, 7]. Of the many factors affecting calf survival, dystocia is the most important (Bellows *et al.*, 1987) ^[8]. It is responsible for 49% of newborn mortalities, 28% of heifer involuntary culling (Barry *et al.*, 2007), and lower milk production [Lombard *et al.*, 2007] ^[10]. Based on the etiology, dystocia is classified into maternal and fetal dystocia. Maternal causes include fetomaternal disproportion, incomplete cervical dilation, uterine torsion, uterine inertia and hernia of gravid uterus, and fetal causes are fetal malposition, fetal oversize and fetal monstrosities (Blate M.E, 2023) ^[11]. In maternal cause, uterine inertia is a significant cause of dystocia in cattle, defined by the failure of uterine contractions to expel the fetus. It is classified into 2 types Primary & Secondary. Primary inertia indicates Weak uterine contractions from the start of labor, often failing to initiate the process properly while Secondary Uterine Inertia occurs after a period of normal or prolonged, intense labor. The uterine muscles become exhausted and cease contracting, often due to an obstruction (e.g., malpresentation, large fetus). The present report, describes the case of maternal dystocia in a dairy cow due to primary uterine inertia.

Case History and Clinical Observation

A 5 years old full term pregnant Holstein Friesian cow was presented by a farmer in Rongmen village, Ribhoi District. The animal had a history of previous normal calving. The cow had been straining for the last 8 hours following the rupture of the first water bag, with no progression in parturition. On clinical examination the physiological parameters viz. rectal temperature (101 ° F), pulse rate (65 beats/minute), heart rate (80 beats/ minute) and respiration rate (35/ minutes) were found to be within the normal limit. Per vaginal examination revealed fully dilated cervix, well-lubricated birth canal without lacerations and a

weak uterine contraction. The fetus was found to be in posterior longitudinal presentation, dorsosacral posture with complete extension of the hind limbs indicating normal presentation and posture. Based on these findings, the case was diagnosed as dystocia due to primary uterine inertia, and assisted delivery by forced traction was planned.

Treatment & Discussion

The animal was properly restrained in a standing position using a rope halter. Preoperative supportive therapy included administration of 10 mL Avil® Vet (antihistaminic) intramuscularly along with intravenous fluid therapy consisting of 2 L each of 10% dextrose and Ringer's lactate solution to correct dehydration and maintain fluid balance. Epidural anesthesia was achieved using 5 mL of 2% lignocaine hydrochloride administered in the epidural space to relieve pain, prevent straining (tenesmus), and facilitate obstetrical manipulation without affecting uterine contractions necessary for parturition. After adequate lubrication of the birth canal with liquid paraffin, soft ropes were securely applied to both fetal hind fetlock joints that were present in the birth canal. Gentle traction was first applied backward by two assistants and subsequently directed downward toward the cow's hock joints to facilitate fetal extraction. A dead fetus without any congenital abnormality was successfully delivered, and the placenta was expelled simultaneously.

Post-partum treatment included intravenous administration of 450 mL calcium-magnesium-boro-gluconate (Mifex®, Novartis India), intramuscular oxytocin 40 IU, 10 mL vitamin B-complex injection (Tribivet®), ceftriaxone injection (Intacef® @ 10 mg/kg body weight), and meloxicam injection (Melonex® @ 1 mL/10 kg body weight, i.m.) for five days. Additionally, Exaparl liquid, a herbal uterine tonic, was administered orally at 100 mL daily for five days. The animal recovered uneventfully without any post-partum complications.

Primary uterine inertia is associated with 10% of total dystocia encountered in dairy cattle, primarily in pluriparae (Purohit and Mehta 2006) [12]. Primary uterine inertia in cattle is often associated with subclinical hypocalcemia (SCHC) in old aged dairy cattle. In primary uterine inertia, although the cervical dilation occurs and the fetus is in normal presentation, position and posture but it is not delivered due to lack of uterine contractions (Noakes 2009) [13]. Phogat *et al.*, (1992) [14] reported the incidence of primary uterine inertia to be 5.9 percent. The animal in the present case is a high yielding dairy cow of 5 years old and such animal commonly had subclinical hypocalcaemia which predisposes to primary uterine inertia at the time of calving. Delivery by forced traction is indicated when the foetal presentation and posture is normal and the cervix is well dilated with no laceration.



Fig 1: A dead foetus with no congenital abnormality

Conclusion

Dystocia is a major animal welfare concern requiring immediate veterinary intervention because it can lead to severe economic losses associated with fetal death, decreased milk production, reduced fertility, and increased treatment costs. Maternal dystocia caused by primary uterine inertia commonly occurs in dairy cattle due to mineral deficiencies, hormonal imbalance, exhaustion, or advanced age of the animal. Early diagnosis and prompt obstetrical intervention are essential to improve the survival and recovery of the animal and to reduce post-partum complications. Obstetrical procedures such as forced traction are highly effective for the management of dystocia caused by primary uterine inertia, particularly when the fetus is of normal size and posture and the birth canal is adequately dilated and well lubricated.

Conflict of Interest

Not available

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