

Management of Fetal Dystocia Caused by Carpal Flexion in A Cow: A Case Report



A clinical report presented in partial fulfillment of the requirement for the degree of DVM (Doctor of Veterinary Medicine)

Presented by

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Reg. No: 762

Internship ID: 52

Session: 2011-2012

Faculty of Veterinary Medicine

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September 2018

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PLAGIARISM CERTIFICATE

Myself MD. Rahmat Al-Amin Talukdar strongly assures you that I have performed all works furnished here in this report. Information has been collected from Military Farm Chittagong, Bangladesh Army & national journals, website and reference books.

All references have been cited duly. No data have been copied in any form.

Therefore I reserve entire responsibility of this report.

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ABBREVIATIONS

Abbreviations

CVASU

RVFC

Ctg.

I/V

Bwt

Elaborations

Chittagong Veterinary and Animal Sciences University

Remount Veterinary & Farms Corps

Chittagong

Intravenous

Body Weight

ABSTRACT

Dystocia as one of the reproductive problems in cows may be defined as the inability of the dam to deliver its calf through its own effort. This condition occurs as a result of problems with the dam's uterus or birth canal, or with the fetus. The usual clinical signs are the onset of labor without delivery of fetus or fetal membranes and later regression of parturition signs. An incorrect diagnosis of dystocia may result in fatal condition to both fetus and mother. The present report describes the management of dystocia in a cow caused from fetal abnormal posture. A crossbred Jersey cow in its sixth parity was presented in Military Farm, Chittagong, Bangladesh Army with the history of complete gestation and violent straining for three hours without any progress in calving. Physical examination of the cow revealed that the animal was dull, depressed and anorexic. One leg of the fetus was found as protruding out from the vulva region. Based on per-vaginal examination, the condition was diagnosed as fetal dystocia caused by unilateral carpal flexion posture of the fetus. Treatment and management plans given to the cow were manipulative delivery of the calf via mutation and forced extraction technique. Post-operative treatment was given with calcium with normal saline. Oxytocin was given intramuscularly and repeated after 4 hours. Amoxicillin was administered intramuscularly for a period of 5 days and Pheniramine maleate was given intramuscularly daily for 5 days. The healthy recovery of the cow was observed after one week.

Keywords: Fetal Dystocia, Mutation, Force Extraction

INTRODUCTION

Dystocia or calving difficulty is referred to as difficulty in parturition to the point of needing human intervention (Blood et al., 2011). In normal parturition of cow there are three stages of labor - initiation and preparation for expulsion of fetus (lasts from 4-24 hours), passage of fetus through the birth canal (lasts from 30 minutes to 3 hours) and expulsion of the placenta (lasts 12 to 24 hours). It is an indication of difficulty in birth or dystocia if the labor is prolonged or beyond the normal parturition times [9]. There are two factors that lead to incidence of dystocia in cow – fetal and maternal factors. The fetal factors include oversized fetus, malposition, postural defects and congenital abnormalities. The maternal factors consist of uterine inertia in polytocous ewes, and small diameter of pelvic canal (Pugh et al., 2012). Maternal dystocia occurs less frequently than fetal dystocia in the cow. Amen et al. (2010) reported 8.3% prevalence of dystocia due to fetal malposition, 5.3% due to narrow pelvic canal, and 3.0% as a result of fetal monstrosities. In another study, Ali (2011) reported 37.1% prevalence of dystocia in cow due to ring womb.

Dystocia is a great problem in village farming due to the ignorance of the farmers and the physical condition of the cows and heifers. Birth canal of our local cows and heifers are somewhat constricted than the other pure and crossbred cows. Due to the artificial insemination of local cows and heifers with the semen of heavy breeds, fetal oversize occurs at the time of parturition. On the other hand farmers do not offer sufficient amount of nutritious feed to the local cows due to their lower production performances, so most of the cows suffer from malnutrition during pregnancy. The frequency of occurrence of dystocia in cows at village level was 3.54% among different diseases in cows. Among the reproductive diseases it was 22.42%. In first calving heifers it was 70.84% and 29.16% in cows having more than one parity. The local breeds (62.5%) were more susceptible to dystocia than other cross bred cows (37.5%) [4]. The incidence of dystocia is higher in cattle and buffalo compared to other farm animals [4]. The incidence of dystocia appears to be higher in the larger breeds, such as the Holstein, Brown Swiss, and Hereford.

Economic losses associated with dystocia have severe consequences in dairy herds due to an increased number of still birth, maternal injury and calf mortality. Dystocia also negatively affects the productive and reproductive performance of lactating dairy cows due to increased risk for uterine diseases. As one of the reproductive problems in cows, it is important to prevent and reduce the incidence of dystocia.

Dystocia cases can either be handled medically or surgically (Scott, 2006). Medical management is an option when the dam and the fetus are remained as stable where there is proper fetal position, presentation and posture with no obstruction (Noakes, 2009). Oxytocin can be administered intramuscularly with or without calcium borogluconate to assist in contraction of uterus (Smith et al., 2009). On the other hand surgical management or cesarean section is needed in obstructive dystocia,

dystocia accompanied by shock or systemic illness, uterine inertia, prolonged active labor or failure in medical management (Majeed et al., 1993). Cesarean section was reported to be an effective method for the treatment of dystocia in ruminants, especially when it is performed early after onset of labor (Majeed et al., 1993). An incorrect diagnosis of dystocia may result in fatal condition to both fetus and mother. This clinical case report presents the management of dystocia in a cow caused from fetal abnormal posture.

CASE DESCRIPTION

Case History and Observation

A crossbred Jersey cow weighing 300kg in its sixth parity was presented to Military Farm Chittagong, Bangladesh Army with the history of complete gestation and violent straining for three hours without any progress in calving. Physical examination revealed that the cow had tachycardia and pale mucous membrane. Rectal temperature was normal. The animal was dull and depressed with severe and frequent straining attempts to deliver the fetus in standing position. The placenta and extremity of one leg was found at vulvar orifice. During per vaginal examination, cervix was fully dilated and relaxed.

There was rupture of the fetal membrane and one leg of the fetus was observed as protruding out from the vulva region. Fetal examination revealed that the fetal was found with anterior presentation, normal position with dorso-ventral position, but posture was abnormal where the carpal joint was flexed at right forelimbs. This posture resulted in the engagement of the fetal chest in the pelvic brim of the dam. Based on physical evaluation of the cow by per vaginal examination, the condition was diagnosed as fetal dystocia due to unilateral carpal flexion posture of the fetus.

Treatment and Management Procedure

The therapeutic plan for this case was to deliver the fetus via traction and rotation method. First of all the leg that was outside the vulva was tied by a calving rope around the leg (Figure A), just above the hoof. After that the whole calf was repelled back into the birth canal (Figure B), until there was enough room around the calf to rotate the bent leg. When there was enough room, applied generous amounts of lube in hand and reached inside the birth canal to find the head. When the head had been found, went down the side of the head towards the bent leg. Grabbed the leg at the carpal region; pulled the leg up towards the body of the calf, causing the shoulder joint to flex. Then, when the hoof could be reached, cupped the hoof in hand and extend the leg outwards towards the vulva. Then a rope was wrapped around the hoof and extended outwards and the leg couldn't slip back into a bent position (Figure C). By pulling the leg with forced traction (Figure D and E), the calf was released from the birth canal (Figure F).

After calving the cow was given with Calcium 100 ml with normal saline, Oxytocin 20IU intramuscularly and repeated after 4 hours. The placenta was released after 6 hours. Amoxicillin (10 mg/kg body weight) was administered intramuscular daily for a period of 5 days. In addition Pheniramine maleate (0.1 mg/kg body weight) was injected intramuscularly daily and continued for 5 days.

Progression

The case was followed up for 2 weeks after treatment, and the cow was found to respond well to the treatments. The cow was found bright and alert and completely cured after two weeks.

LIST OF FIGURES



Figure A. The leg that was outside the vulva was tied by a calving rope.



Figure B. The whole calf was repelled back into the birth canal.



Figure C. A rope wrapped around the hoof and extended outwards and the leg couldn't slip back into a bent position



Figure D. Pulling the leg of the calf by rope



Figure E. Pulling the leg with forced traction



Figure F. Relieving of the fetus by forced traction.



Figure G. The calf after released from the birth canal



Figure H. The calf presented to the front of mother for liking the slime and giving stimulation to the calf to stand on its leg.

DISCUSSION

In general, while approaching a case of dystocia it is advisable to assess the extent of cervical dilatation and the presentation, position, and posture of the fetus before making a decision about therapeutic treatment or obstetrical intervention.

In this clinical case, the fetal abnormal posture characterized by unilateral carpal flexion was the cause of dystocia where both of the forelimbs were flexed at the knee joint region. This is the most common and easily corrected dystocia (Majeed et al., 1993). There are a few obstetrical procedures that can be done to remove the fetus (Majeed and Taha, 1995); these procedures include (1) mutation to correct abnormal presentation, position and posture of fetus by manipulation, (2) traction where application of outside force used to assist dam to expel fetus, (3) fetotomy to reduce the size of dead fetus within the uterus, and (4) cesarean section by delivering fetus through laparohysterotomy. Procedure (1) and (2) were used in this case to expel out the fetus. Procedure (3) was not used because this is only for dead fetus. Procedure (4) was also not applied here because the fetus was already engaged within the pelvic canal.

The treatment approach in this case was manipulative delivery with manual repulsion and traction method was in consonant with the recommendation of Noakes (2009) and Youngquist et al. (2007). In this case, both the dam and the fetus were saved due to timely presenting the case where delay in treatment of dystocia and prolonged dystocia in cow may cause necrotic metritis and is usually fatal (Mee, 2008; Christos et al., 2012).

In short, this case report described the successful management of dystocia in a cow using manipulative delivery of the calf via mutation and forced extraction method with medicinal approach.

ACKNOWLEDGEMENT

All praise are due to Almighty Allah, the creator and supreme authority of the universe, who enable me to complete this report.

It is impossible to acknowledge a debt of this nature individually but I am most grateful to my honorable teacher Dr. Himel Barua, Professor Department of Microbiology and Veterinary Public Health, Chittagong Veterinary and Animal Sciences University, Chittagong for his constant inspiration and encouragement to do this work.

I am also very grateful to my classmates for their valuable comments/suggestions.

Indeed, I extend my deepest appreciation to Major Hossain Muhammad Riad, the officer in-charge of military farm Chittagong who helped me to fulfill this report by giving necessary information.

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