ISSN (O): 2581-8740 | ISSN (P): 2581-8732
Kolagani *et al.*, 2023
DOI: 10.21276/SSR-IIJLS.2023.9.1.1

Case Report

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Dystocia Due to Secondary Uterine Inertia and its Obstetrical Management- A Case Report

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Received: 16 Aug 2022/ Revised: 29 Oct 2022/ Accepted: 23 Dec 2022

ABSTRACT

Background: A full-term pregnant Ongole cow was presented to the Large Animal Obstetrical Ward with a history of reduced feed intake, dull and ruptured foetal membranes 24 hours before presentation without progress in parturition. The temperature was within the normal physiological range. Per-vaginal examination revealed second-degree cervical dilation, lack of uterine and abdominal contractions and the vaginal discharges were reddish brown and putrid.

Methods: The case was diagnosed as secondary uterine inertia and treated with an intracervical application of misoprostol and intravenous calcium therapy.

Results: Three hours after the application of misoprostol and calcium therapy, full dilatation of the cervix was achieved to facilitate the delivery of the dead male emphysematous foetus by traction. Uneventful recovery of the dam was noticed.

Conclusion: Usage of misoprostol along with CMC massage and calcium therapy resulted in speedy recovery of dystocia suffering with incomplete cervical dilation.

Key-words: Ongole cow, Emphysematous foetus, Maternal Dystocia, Misoprostol, Carboxy methyl cellulase, Secondary uterine inertia

INTRODUCTION

Dystocia is a common obstetrical problem that occurs when the first or second stage of labour was prolonged and delivery requires assistance [1]. primarily the case history should be taken since it is necessary for the handling of dystocia [2]. For assessing an individual animal and formulating a clinical management plan, it is advised to divide the causes of dystocia into those of foetal origin or maternal origin [3].

How to cite this article
Kolagani HB, Borra CP, Manda S. Dystocia Due to Secondary Uterine Inertia and its Obstetrical Management- A Case Report. SSR Inst. Int. J. Life Sci., 2023; 9(1): 3136-3140.

Access this article online
https://iijls.com/

The causes may be maternal (uterine inertia, inadequate size of birth canal) or foetal factors (oversized foetus, abnormal orientation of foetus) [4]. Incomplete cervical dilation of maternal causes is found to be a more frequent cause of dystocia [5]. Dystocia due to secondary uterine inertia obstructs to delivery of the dead foetus through the cervical canal and is rarely observed in companion animals [6]. Secondary uterine inertia commonly occurs due to uterine exhaustion leading to obstructive dystocia [7]. The condition occurs mainly due to an obstruction in the birth canal or can happen spontaneously at the second stage of parturition [8]. Weak uterine contractions often resulted in relatively inefficient dilation of the ripened cervix, which is the probable pathogenesis.

The period, when the cervix is fully dilated is relative to short duration. If the calf is not delivered through the

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ripened cervix, it will start to involute, thus trapping the foetus within the uterus [9].

CASE PRESENTATION

A full-term pregnant Ongole cow in its fourth parity was presented to the Large Animal Obstetrical Ward with a history of ruptured foetal membranes 24 hours before presentation without progress in parturition. Clinical examination revealed relaxation of sacro-sciatic ligaments, enlarged udder and edematous vulval lips. Per rectal examination revealed the absence of fremitus, foetal movements, and foetal reflexes with crepitation. Upon obstetrical examination revealed second-degree cervical dilation, and lack of uterine and abdominal contractions; the birth canal was dry and inflamed with reddish brown and putrid vaginal discharges. The presentation, position and posture of the dead emphysematous foetus could not be fully determined as the cervix was not fully dilated. The case was handled by a field veterinarian, who failed to deliver and thus, referred the case.

The animal was restrained by caudal epidural anaesthesia @ 5 ml of 2% lignocaine hydrochloride solution. The animal was treated with Inj. Valethamate bromide (Epidosin 50 mg IM), Inj. Dexamethasone sodium phosphate (Dexacare-Vet 20 mg IM), Inj. Cloprostinol sodium (Pragma 500 µg IM) along with fluid therapy (25% Dextrose and Ringers Lactate @ 2 litres each) for rehydration. Feathering of the cervix was done by massaging the cervix with arms by using lukewarm carboxy methyl cellulose (CMC) for 15 minutes. After 1 hour of feathering slight progress in cervical dilatation was noticed but was not sufficient to facilitate the delivery of the dead foetus. As the texture of the cervix was moderately soft and partially lobulated, it was decided to dilate the cervix's medical management. Carboxymethyl cellulose gel mixed with Tab. Misoprostol @ 1600 mcg (Misoprost 200 mcg, Cipla, 8 tabs) was applied intra-cervically. Three hours after the application of Misoprostol, complete dilatation of the cervix was achieved. Detailed obstetrical examination revealed the presence of a dead emphysematous foetus in anterior longitudinal presentation, dorso-sacral position with head, neck and forelimbs extended into the birth canal. A slow intravenous infusion of 150 ml calcium borogluconate was administered to improve the uterine tone. Carboxymethyl cellulose solution (2%) @ 5-6 litres was infused into the uterus as a lubricant. Calving ropes were applied above the fetlock joints of both the forelimbs and the loop of the snare was applied to the neck behind the ears. As the foetus was dead and emphysematous, the gas from the sub-cutaneous tissues was removed by incising the dorsal areas of the foetus with a blunt scalpel (Fig. 1). Forced traction led to detachment of the posterior portion of the foetus and only the anterior portion of the foetal body could be delivered by traction (Fig. 2). Hindlimbs of the foetus were identified and version was performed on the posterior portion of the foetus to extend the hindlimbs into the birth canal. The loop of the calving ropes was placed above the fetlocks of both hindlimbs and the posterior portion was delivered by traction (Fig. 3). Further, some the internal organs of the foetus like kidney, liver and intestines were removed in portions. After removal of foetus and its parts (Fig. 4), the uterine lumen was thoroughly examined to rule out the presence of tears and haemorrhage.

Fig. 1: Traction of the anterior portion of the dead fetus

Fig. 2: Delivery of the anterior part of the dead fetus by traction

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Fig. 3: Delivery of the posterior part of the dead fetus by traction

Fig. 4: Delivery of dead emphysematous fetus in two portions

Animal was treated with Inj. Oxytocin 25 IU as single dose, Inj. Moxel 3 gms BID (Amoxycillin sodium 1500 mg and Cloxacillin sodium 1500 mg), Inj. Megludyne @ 2.2 mg /kg body weight (Inj. Flunixin meglumine), Inj. Zeet 60 mg (Inj. Chlorpheniramine maleate) and fluid therapy with 2 litres of Ringers lactate and Normal saline, each. Antibiotic therapy was continued for 5 days post-operatively and the cow experienced an uneventful recovery.

DISCUSSION

All obstetrical cases were to be treated as emergencies [10]. Incidence of dystocia can be prevented by good nutrition, and by reducing the fetomaternal disproportions by appropriate dam and sire selection [11]. Incomplete cervical dilation may occur both in the multiparous animals and heifers. Dystocia caused exhaustion of the uterus leading to secondary uterine inertia and the affected cows had a very low survival rate [12].

Obstruction or a maldisposed or oversized fetus in the birth canal could result in dystocia, which if not corrected in time lead to uterine muscle exhaustion and resulted in a condition called secondary uterine inertia [13]. The condition was characterized by the presence of weak and transient uterine contractions with the inability to deliver the foetus. The onset of parturition was normal with rupture of the foetal membranes, but the long duration of the dystocia could have led to secondary uterine inertia and partial involution of the cervix [14].

In prolonged cases of dystocia, the presence of a dead foetus at body temperature would cause putrefaction and bloating of the foetus if delayed beyond 24-48 hours. Further, prolonged dystocia resulted in weak and intermittent abdominal contractions within a few hours and later ceased due to exhaustion. The more prolonged dystocia, the poorer the progress [15].

Ripened cervix dilation is regulated mainly by myometrial contractions [16]. Weak myometrial contractions can become the causative factor for incomplete cervical dilation and finally results in dystocia [17]. Secondary uterine inertia is one of the major factors for incomplete cervical dilation occurs because of malposition, twin calving, and prolonged dystocia [18]. Prostaglandins play an important role in cervical ripening because of their increased levels in the fetal membranes, uterus, and cervix [19]. Misoprostol is the analogue of prostaglandin E1, which is commonly used to ripen the cervix [20].

In the cases of incomplete cervical dilation, cervical massage with sodium carboxy methyl cellulose could be done, otherwise leaving the cervix to dilate on its own causing the hardening of the cervical texture and followed by failure of dilation [21]. Cervical dilation improved by the combination of the warm sodium carboxy methyl cellulose gel addition with cervical massage can induce the activities of collagenolytic enzymes improving cervical softening [22]. cervical massage can be done by warm sodium carboxy methyl cellulose with the gloved hand at the region of the external os. Calcium therapy helps in dilating the cervix by improving the uterine contractions which further resulting the dilation of the cervix [23].

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CONCLUSIONS

Maternal factors especially improper cervical dilation appeared to frequent cause of dystocia which eventually leads to exhaustion of uterine muscles, causing secondary uterine inertia. Incomplete cervical dilation is the more frequent cause of dystocia leading to secondary uterine inertia.

Usage of misoprostol along with CMC massage and calcium therapy resulted in speedy recovery of dystocia. Administration of hyaluronidase in the cervix of pregnant animals can improve cervical ripening and helps to shorten the length of labour without producing any side effects.

CONTRIBUTION OF AUTHORS

Research concept- Manda Srinivas
Research design- Manda Srinivas
Supervision- Borra Chandra Prasad
Materials- Kolagani Hima Bindu
Data collection- Kolagani Hima Bindu
Data analysis and Interpretation- Kolagani Hima Bindu
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