Short Communication

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Management of Late-Pregnancy Colic by Inducing Foaling

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ABSTRACT

A four-year-old nulliparous mare was presented with a history of full-term pregnancy and colic signs. On general clinical examination, the mare was dull with bilateral distension of the abdomen. Vaginal examination revealed a softened cervix with evident liquefaction of the cervical seal. The mare was induced for parturition using oxytocin at 100 IU diluted with 1000 ml of normal saline as a slow intravenous infusion. The cervix was relaxed at one hour of intervention, enabling manual delivery of a live male foal. The mare was treated with antibiotics and anti-inflammatory drugs for three days and had an uneventful recovery. Further vaginal examination revealed an appreciable involution of the cervix with normal lochia.

***Keywords*:** Colic**,** Foaling, Induction, Mare, Oxytocin

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INTRODUCTION

The induction of parturition is a commonly practiced procedure in numerous livestock species to facilitate enhanced support during parturition. In equine practice, inducing parturition could streamline mare management and reduce instances of unattended foaling, consequently diminishing the occurrence of stillborn foals or rectovaginal trauma in mares (Villani *et al.,* 2008). Despite the evident benefits, the induction procedure has been discouraged in horses due to the risks associated with peri-partum or neonatal complications (Jeffcott and Rossdale, 1977). Extensive documentation supports the notion that to mitigate these risks, the induction of delivery should only be undertaken in mares nearing spontaneous delivery (Ousey, 2002). Oxytocin is the commonly preferred pharmaceutical agent for inducing foaling in mares (Card, 2010). Indications for a controlled induction of labor in mares include clinical purposes such as managing high-risk pregnancies, monitoring labor in mares with a history of dystocia or still-

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birth, addressing premature separation of the placenta, and managing other foaling complications. Apart from breeding issues, induction or termination is recommended in colicky mares. This communication reports a case of the induction of foaling in a colicky mare with its successful management.

CASE HISTORY AND OBSERVATIONS

A four-year-old nulliparous mare was presented to the casualty unit of the Veterinary Clinical Complex, Veterinary College, and Research Institute, Orathanadu, with a history of nearing term pregnancy and signs of restlessness and intermittent rolling on the ground for the past 24 hours. On general clinical examination, the animal was found to be dull, with a rectal temperature of 38.3°C, and with congested conjunctival mucous membranes. External examination revealed bilateral distension of the abdomen and dribbling of urine was observed. On rectal examination, fetal parts were noticed in the pelvic cavity with positive fetal reflex, suggesting nearing pregnancy. On vaginal examination, the cervix was closed and external os was softened with evident liquefaction of cervical seal. Since the mare was symptomatically treated for colic signs with no progress and a poor prognosis, induction of foaling was attempted.

TREATMENT AND DISCUSSION

The mare was induced for parturition using oxytocin at 100 IU diluted with 1000 ml of normal saline as a slow intravenous infusion over the period of 60 minutes. The cervix was examined at a 30-minute interval for relaxation, and after one hour of intervention, relaxation of cervix was evident. Caudal epidural anaesthesia was performed with 2% lignocaine hydrochloride (4 ml) at the inter-coccygeal space using a 20G needle. Tail bandaging was performed to prevent hair contamination and prevent mechanical injuries during the interventional procedure. Upon rupturing of the red bag (Fig.1) the fetus was examined and it was found to be in anterior longitudinal presentation, dorso-sacral position with extended limbs. By moderate traction, the fetus was relieved (Fig.2 and 3); consequently, the placenta was removed en masse by gentle separation (Fig.4), and the umbilical cord was cut, and the foal was nursed by the dam. The mare was treated with Flunixin meglumine (1.1 mg/kg; i.v.), a combination of streptomycin and procaine penicillin 5 g IM (20 mg/kg and @ 22,000 units/kg) for four days resulting in uneventful recovery. Vaginal examination on three days post foaling revealed an appreciable involution of the cervix with normal lochia.

For clinical purposes, such as managing high-risk pregnancies, monitoring labor in mares with a history of dystocia, addressing premature placental separation, or handling other foaling complications, controlled induction of labor may be administered to a mare (Ousey, 2002). The voluntary induction of labor now adheres to predefined criteria. The mare should be beyond 330 days of gestation, exhibit a well-developed udder, possess a relaxed cervix as determined by rectal palpation, and demonstrate a milk calcium carbonate content exceeding 200 parts per million (Ley *et al*., 1998; Macpherson *et al.,* 1996). During the final month of pregnancy, primiparous or elderly mares might encounter slight discomfort or experience low-grade colic attributable to fetal movements and positioning or minor displacement of the large colon by the gravid uterus. Observable signs may include yawning, pawing, lethargy, and occasional rolling or grunting while lying on their side, which may be categorized under idiopathic colic (Tibary and Pearson, 2012), similar to the present case where the mare had a colic sign with no progress in symptomatic treatment. Inducing parturition in such cases poses the risk of premature foal delivery but could potentially save the mare.

In emergency situations, the use of pharmaceutical intervention to induce foaling in mares becomes a crucial life-saving measure. In extended circumstances, attempts to induce foaling have been made using varying doses of oxytocin alone or in combination with other therapeutic medications, with varying levels of results (Jeffcott and Rossdale *et al*., 1977)., Exogenous oxytocin and $PGF_2\alpha$ may cause significant uterine contractions during the final stage of labor to facilitate foal delivery (Nagel *et al.,* 2020). Oxytocin effectively induces foaling towards the end of pregnancy, but high doses can lead to premature births. Recent research has aimed to reduce the dosage to induce foaling only in mares that are ready. Mares meeting clinical criteria typically receive a single dose of 2.5 to 3.5 IU of oxytocin, with a repeat dose allowed after 24 hours if there is no response, indicating the mare is not yet ready (Nagel and Aurich, 2022). In mares nearing term, the use of low doses of oxytocin has been linked to complications such as dystocia, premature placental separation, retained placental membranes, and the premature delivery of foals. These complications are particularly noted when oxytocin injections are administered repeatedly at short intervals (Duggan *et al.,* 2007). Oxytocin administration at a dose of 40 IU in two liters of saline (Hadiya *et al.,* 2015) or 60–100 IU through a 60-minute slow saline drip (Jackson, 2004)

Fig.1. Retrieval and rupturing of red bag

Fig.2. Delivering fetus by traction

Fig.3. Live male foal

Fig.4. Diffuse epitheliochorial type of placenta separated after assisted foaling

has been shown to induce foaling within 30 minutes, a result that aligns with our observations. Mares experiencing colic with no improvement from therapeutic interventions during term gestation may be induced for foaling, potentially saving the lives of both the dam and the foal, contingent upon lung maturity.

CONCLUSION

During the last month of pregnancy in mares, veterinarians encounter challenges due to various syndromes related to pregnancy and their metabolic and physical effects. Addressing medical issues in high-risk pregnant mares, especially in idiopathic colic, requires veterinarians to develop comprehensive plans, including therapeutic interventions for induction of foaling.

CONFLICT OF INTEREST

None

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