

Partial Fetotomy to Relieve Dystocia due to Bilateral Carpal Flexion of Fetus in a Primiparous Mare

Brijesh Kumar¹, Abhishek Kumar^{1*}, Amit Khatti¹, Amarjeet Bisla¹, Dushyant Yadav¹, Rohit Kurhe¹, Deepesh Gautam², Naveen Kumar Verma², Athanas Alex Ngou¹ and Harendra Kumar¹

¹Division of Animal Reproduction, ICAR-IVRI, Izatnagar, Bareilly-243122, Uttar Pradesh, India

²Division of Surgery, ICAR-IVRI, Izatnagar, Bareilly-243122, Uttar Pradesh, India

*Corresponding author: abhiawadhesarita@gmail.com

ABSTRACT

A primiparous mare was presented to the Referral Veterinary Polyclinic with the history of full term gestation, off-fed and straining since morning on the day of presentation. On gross observation, the animal was in sternal recumbency with fetal head protruded out from the vulva. Per-vaginal examination revealed oedematous and dry birth canal impacted with dead fetus in anterior longitudinal presentation, dorso-sacral position and bilateral carpal/knee flexion, causing obstruction and dystocia. After restraining the mare and giving initial therapy, birth canal was lubricated with ample amount of liquid paraffin. Manual resolution of dystocia was first attempted with no improvement. Thereafter, it was decided to go for partial fetotomy with Thygesen's fetotome, and head along with neck was amputated. Amputation of both forelimbs was carried out at the level of carpal joint due to lack of space for mutation. Then, two point tractions were applied and female fetus was extracted out. Mare was put on intensive therapy and recovered uneventfully.

Keywords: Mare, Dystocia, Partial fetotomy, Thygesen's fetotome

Incidence of dystocia in equines is low compared to other domestic animals because of strong uterine contraction and relatively shorter 2nd stage of labor (15-30 min.), but when it occurs it should be considered as an emergency and handled promptly to increase survivability of dam as well as fetus (Norton *et al.*, 2007; Wilkins, 2008). Although the causes of dystocia can be classified into fetal and maternal causes however, most reports depict that fetal maldisposition i.e. malposture of long foetal extremities (flexion of limbs and deviation of head) accounting 95% of the cases and uterine torsion in 5% of the cases; are most common cause of dystocia in equines (Frazer *et al.* 1997; Chaney *et al.* 2007; Threlfall, 2007; Lopez and Carmona, 2010).

Dystocia cases in mare can be corrected by controlled or assisted vaginal delivery, fetotomy, and cesarean section (Roberts, 1986; Byron *et al.* 2002). Fetotomy should be done only when fetus is dead; enough space is not present in birth canal to correct fetal maldisposition per-vaginally through mutation and to avoid the cost and risk of cesarean section. Fertility after fetotomy, defined as live foal production, was reported as 42% in 52 mares (Vandeplassche *et al.*, 1972). Percutaneous fetotomy is performed to reduce the size of the fetus either by cutting some of its parts (partial) or by division of the whole fetus in 4 or 6 cuts (complete); with correct instrument either Thygesen's or Utrecht fetotome and fetotome wire placement and cuts are made as such to minimize fetal bone exposure, trauma, or injury to the dam birth

canal during traction. Experienced practitioners, quick decisions, atraumatic technique or gentle handling, and partial fetotomy involving 1-3 cuts, can minimize complications and maintain future fertility (Nimmo *et al.*, 2007). The present case report describes partial fetotomy to relieve dystocia in a mare due to bilateral carpal/knee flexion of the fetus.

History and clinical examination

A primiparous mare was presented to the Veterinary Gynaecology and Obstetrics wing of the Referral Veterinary Polyclinic (RVP) of Indian Veterinary Research Institute, Izatnagar with the history of full term gestation, off-fed and straining since morning on the day of presentation.

On gross observation, animal was dull, depressed and presented in sternal recumbency with fetal head protruded out from the vulva (Fig. 1). Rectal temperature was 101.3°F with bright pink mucous membrane. Detail history revealed that the case was handled by local practitioner for more than an hour, later, referred to the RVP. Per-vaginal examination revealed oedematous and dry birth canal having dead fetus with anterior longitudinal presentation, dorso-sacral position and bilateral carpal/knee flexion causing obstruction and dystocia.



Fig. 1: Mare presented at RVP with protruded fetal head outside the birth canal

Obstetrical and therapeutic management

Mare was restrained and tail was wrapped with bandage, then, perineal region was thoroughly cleansed with antiseptic solution. Then, Tetanus toxoid[®] (Serum Institute of India Limited, India) - 5mL deep IM; Epidural anaesthesia (2% Lignocaine hydrochloride[®] inj.)- 5 mL; Antibiotics Ceftriaxone plus Tazobactam inj. (Intacef Tazo[®]- Intas, India) - 3375 mg IM and Flunixin inj. (Megludyne[®], Virbac, India) - 7mL (1 mL per 45 kg body weight) slow I/V were administered. The birth canal was lubricated with ample amount of liquid paraffin. Manual resolution of dystocia was first attempted by holding the mare in lateral as well as in dorsal recumbency. However, there was no improvement as the extremities were too long; and space in birth canal was too small to correct malposture of fetus through mutation. Therefore, it was decided to go for fetotomy to relieve dystocia.

Fetal head was protruded from vulva which put hindrance in correcting carpal flexion, therefore, both tubes of the fetotome were threaded and the wire loop was passed over the fetal head, behind the ears and guided forwards along the neck as far as possible; and the head of fetotome was positioned alongside the neck, close to the scapula. While fixing head of fetotome, another person applied handgrips to the wire saw and commenced cutting with slow, short to and- fro arm movements. After a while, head along with neck was amputated (Fig. 2).



Fig. 2: Partial fetotomy with Thygesen's fetotome for amputation of head along with neck

Again, even after creating some space after amputation, fetal limbs failed to be brought back in birth canal as it was suspected for bilateral carpal contraction, therefore, amputation of both forelimbs was carried out through positioning head of fetotome against the distal row of carpal bones and both forelimbs were amputated below the knee or carpal joint. Then, two obstetrical ropes were anchored against the tuberosities of the distal radius separately and two point tractions were applied and female fetus was extracted out (Fig. 3). Fetal membranes were easily detached or removed after extraction of fetus.



Fig. 3: Extracted dead female fetus with amputated extremities through partial fetotomy

Mare was given intensive fluid therapy i.e. normal saline (NS) - 5L, dextrose normal saline (DNS)-7L and ringer lactate (RL)-5 L over a period of 6 to 8 hours and it was continued for 3 days. Antibiotics (Intacef Tazo®) - 3375 mg IM *sid* for 3 days; Megludyne® - 7mL slow I/V *sid* for 3 days; Dicyclomine inj. (Spamovet®, Vetoquinol, India) - 10 mL IM *sid* for 3 days and Antioxidant- Ascorbic acid inj. (Ascorvet®, Phoenix, India) - 20 ml IM *sid* for 5 days were administered.

DISCUSSION

Fetotomy is done only when fetus is dead and preferred over cesarean section due to post-

operative complications which endanger dam's life especially in mare (Roberts, 1971). Therefore, partial fetotomy was performed in this case as reduction of dystocia was not amenable to manual correction (Vandeplassche, 1980). Fetotomy should be performed immediately after mare is examined for fetal viability; therefore, manipulations of the fetus in the birth canal can be minimized (Carluccio *et al.*, 2007). The present case was a delayed case while considering the equine species and to avoid cesarean complications, fetotomy was performed. Fluid therapy along with antibiotics and anti-inflammatory drugs were administered and mare recovered uneventfully within three days of treatment (Fig. 4).



Fig. 4: Mare after relieving dystocia

CONCLUSION

A case of bilateral carpal flexion/ contraction of fetus causing dystocia in a mare and its successful management is detailed.

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