Clinical Report

Partial fetotomy: technique to resolve wry neck dystocia in mare

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Received September 23, 2020

Revised December 5, 2020

Accepted December 7, 2020

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ABSTRACT Foaling is a process of giving birth to foal which is prompt and forceful event in equine breeding. Dystocia is declared when 2nd stage of parturition exceeds from 20 min without fetal movements in mare. Dystocia is very challenging situation for both mare and veterinarian. Survivability of mare and foal, and subsequent fertility of mare depends on efficient management. Therefore, the current report described a rare case of wry neck (torticollis or unilateral bent neck) resulted in dystocia, that was efficiently resolved by partial fetotomy and repulsion technique in mare under field conditions. Intensive post operative care was performed to avoid infection and to achieve fertility subsequently.

Keywords: dystocia, mare, wry neck

INTRODUCTION

Horse-human interaction varied from centuries depending on the need of humans. Horse-human affiliation was greatest due to its strength to carry and pull load, and swiftness of humans mobility (Clutton-Brock, 1992). Horse usage for farm work and transport decreased in developed countries during the last forty years (Robinson, 1999). Breeder's interest is increasing to keep horse for leisure, hobbies for riding, tent pegging, dancing, derby, breeding, sale and purchase of excellent genetic foals. The biggest bottleneck is to yield viable and healthy foal from conception to birth during pregnancy (Ensminger, 1990).

Foaling is a process of giving birth to foal which is prompt and forceful event in equine breeding (Thanga-

mani et al., 2018). Dystocia is declared when 2nd stage of parturition that exceeds from 20 min without fetal movements in mare (Frazer, 2009). Mare and foal morbidity, mortality and future fertility depend on time and decision made during foaling (Freeman et al., 1999). Dystocia is rare in mare compared to other domestic animals. Limitation is that its occurrence is 4% in thoroughbred (Morrow, 1986) and causes a challenging condition to many equine practitioners (Purohit, 2011). Dystocia is caused by maternal or fetal factors, among which fetal causes are most common in all animals (Threlfall, 2007). Fetal factors includes malpresentation (24%), malposition (30%) and malposture (86%). Moreover, dystocia occurred in anterior (99%), posterior (0.9%) and transverse (0.1%) presentation in mare (Frazer et al., 1997). Malposture of long fetal extremities such as limbs, head, and neck of fetus in uterus

are the main factors for fetal dystocia (Frazer et al., 1997). Abnormality or delay during foaling prone to dystocia is very challenging situation for both mare and veterinarian (Purohit, 2011). Survivability of mare and foal, and subsequent fertility of mare depends on efficient management (Pynn, 2014). Different procedure are used to resolve dystocia in different farm animals and mare, including rotation, repulsion, traction, caesarean section and fetotomy of foal (Frazer, 2007).

Fetotomy is classified as partial and complete. 80% of dystocia cases are resolved through partial fetotomy in mare (Vandeplasse, 1987). Longer birth canal and swiftly detachment of fetal membranes make fetotomy more difficult in mares compared to cows (Frazer, 2007). Resection of one part or more in fetus is used to resolve dystocia if posture of head, neck and limb are abnormal (Frazer, 1997). Therefore, the current report describes a rare case of wry neck (torticollis or unilateral bent neck) resulted in dystocia, that was efficiently resolved by partial fetotomy and repulsion technique in mare under field conditions.

CLINICAL CASE

A five-year old, white, desi mare, weighing 500-550 kg, having full term pregnancy during third parity was presented to extension services of College of Veterinary and Animal Sciences Jhang, with the history of straining form last five hr. Mare had thrown the first water bag three hr ago.

General clinical examination revealed 38.6°C of body temperature 44-46 of heart beats and 24-30/min of respiratory rate. The animal was in right lateral recumbency with immoderate straining. Perineum was washed with povidone-iodine scrub and then rinsed with clean water.

Epidural anesthesia with 5 mL of 2% lignocaine hydrochloride was conducted to reduce the straining.

Vaginal examination was performed with lubricated plastic sleeves to assess the presentation, position and posture of the foal. On vaginal examination, fetus was found dead without showing any reflex having anterior longitudinal presentation, dorsosacral position with deviation of head and neck on right side and flexion of forelimbs beneath the body. Examiner tried to correct the posture manually and found the neck torticollis (stiff, wry neck) and fore and hindlimbs overlapped. Considering all these conditions, it was decided to resolve dystocia by partial fetotomy. Forelimbs were separated by applying resection on the knee joint of foal. Amputated foal legs were removed by traction. Following fetotomy, the foal was repelled in the uterus. Obstetrical chains were applied on hind limbs. Liquid paraffin was used continuously for lubrication during this process. Torticollis neck was made straight in front of the birth canal and removed by traction as shown in Fig. 1A.

Antibiotic (Penivet-5, Benzyl Penicillin Procaine Penicillin G Streptomycin Sulphate Star Laborites Pvt, Pakistan) was administered for five days to cope up the infection. Supportive therapy (Ringer's Lactate) was performed to hydrate the mare and referred to the common veterinarian for medical follow-up. Anti-tetanus toxoid was also administered as shown in Fig. 1B. Mare was healthy and conceived in the next breeding season narrated by the owner on telephonic follow up.

DISCUSSION

To the best of my knowledge this is the first report in mare dystocia resolved through partial fetotomy performed during field condition in Desi mares. Dystocia

Fig. 1. (A) Wry neck foal after resolving dystocia (B) mare for post-operative treatment.

is declared when 2nd stage of parturition that exceeds from 20 min without fetal movements in mare (Frazer, 2009). Deviation of head and neck is the major cause of dystocia resulted in worse condition. This condition can be prevented by application of rope on the head of the foal before manipulation. Two type of deviations of head and neck such as ventral and lateral among which lateral deviation is extremely difficult to correct. Wry neck is proved to be the most difficult and rewarding conditions for mare dystocia (Pynn, 2014).

Equine dystocia is resolved through different techniques which include assisted vaginal delivery (rotation, repulsion and traction) in recumbent or standing mare and controlled vaginal delivery (caesarean section and fetotomy) (Frazer, 2007). Manipulation decision depends on foal status, economic value of both mare and foal, duration and severity of dystocia and clinician expertise. Foal viability is the prime consideration for making decision for adaptation of obstetrical procedure. One or two partial cut mostly resolve dystocia in live foal (Frazer et al., 1997) but for dead foal, fetotomy is preferred by skilled person because this condition is most challenging and hazardous for mare life (Higgins and Wright, 1999). Fetotomy is classified as partial and complete fetotomy. Earlier studies reported that partial fetotomy shorten the duration of intervention for delivery of a non viable fetus (Nimmo et al., 2007). During fetotomy, cuts are important for resolving dystocia. Previous studies reported 57% cases of dystocia were resolved by one or two cuts and 21% cases were resolved by three fetotomy cuts (Frazer, 1997). Previous studies found 95.8% survival of mare after dystocia through fetotomy (Carluccio et al., 2007). In another report, 80% of dystocia cases are resolved by partial fetotomy technique in mare (Vandeplasse, 1987). Fetotomy is more difficult in mare compared to cow due to longer birth cavity and faster separation of placental membranes (Frazer, 2007). Dystocia due to postural defects of head and neck is efficiently resolved by applying one or two fetotomy cuts (Frazer, 1997). In the present report, dystocia was resolved by applying partial fetotomy technique. Forelimbs were separated by applying cuts on the knee joint of foal. Amputated foal legs were removed by traction. Following fetotomy foal was repelled in the uterus. Obstetrical chains were applied on hind limbs. Liquid paraffin was used for lubrication during this process. After resolving for post operative care antibiotic was

recommended for five days to cope up the infection. This technique is cheap and easy than cesarian section in this type of rare cases of dystocia in mare.

CONCLUSION

It is concluded that by partial fetotomy followed by repulsion are the safe and practical solution to resolve dystocia during field condition. Furthermore, this technique is comparatively economical to handle emergency cases as compared to cesarean section, better recovery can be achieved by proper postoperative care.

CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

AUTHOR CONTRIBUTIONS

M Hassan and AR Asif performed this procedure on mare. M Hassan and S Shahid wrote the initial draft. MI Naveed, AH Shahzad and MA Khan help in critically reviewing this draft.

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