Case Report

Sahel Journal of Veterinary Sciences

Sahel J. Vet. Sci. Vol. 17, No. 2, pp. 45-48 (2020)

Article History
Received: 26th Feb, 2020
Revised: 28th April, 2020
Accepted: 1st May, 2020
Published: 30th June, 2020

Management of Dystocia Due to Uterine Torsion in a Murah Buffalo Using Schafer's Technique

[1,2*] Mustapha, A. R., [1]Gosh, S. K., [1]Prasad, J. K.,[2]Peter, I. D., [2]Iliyasu, D.,[2]Alkali, I. M.,[2]Asuku, S. O., [3]Abba, A. and[3] Bamanga, U. M.

[1]Germplasm Centre, Division of Animal Reproduction, Indian Veterinary Research Institute, Izatnagar, Bareilly (Deemed University), India
[2]Department of Theriogenology, Faculty of Veterinary Medicine, University ofMaiduguri, Nigeria
[3]Veterinary Teaching Hospital, University of Maiduguri.

[*] *Author for Correspondence:madambe72@gmail.com*

ABSTRACT
Uterine torsion is considered an obstetrical emergency and should be corrected as soon as it is diagnosed. It occurs frequently in buffaloes as compared to other species of animals, mainly due to their peculiar anatomy and physiology. This case report describes the occurrence of uterine torsion in a pregnant pluriparous buffalo. The buffalo was presented with history of persistent straining for over 6 hours. The cervix was fully dilated and obstetrical examination revealed dystocia due to a left sided uterine torsion. Haematological results revealed a normal PCV but with an accompanying macrocytosis. There was also neutrophilia, eosinophilia as well as lymphopenia as well as hypocalcium and hypomagnesemia. The dystocia was corrected using the Schafer's technique. This involved the placing of the free end of a wooden plank on the left flank while the other free end, having an assistant standing on it rested on the ground. Rolling the buffalo twice with this arrangement corrected the anomaly.

Keywords: Buffalo; Dystocia; Obstetrical Emergency; Reproduction; Schafer's Technique; Uterine Torsion

INTRODUCTION

Dystocia is one of many causes of peri-natal death of newborns and dams. Dystocia may be caused by maternal or foetal factors or sometimes both (Ali, 2011; Bhattacharrya *et al*., 2015; Ahmed *et al*., 2019). The diagnosis and management of dystocia is an important aspect of obstetrics and usually requires a complete understanding of parturition as well as practical competency (Noakes *et al*., 2009). Uterine torsion is the rotation of a uterine horn along its longitudinal axis with a resultant stenosis of the birth canal thereby causing dystocia (Alfaris *et al*., 2014; Jeengar *et al*., 2015). The condition usually occurs at full term (Frazer *et al*., 1996; Ali *et al*., 2011). To date, the main cause of uterine torsion in animals is not fully understood but there are some postulations. A decrease in amniotic fluid, sudden strong vigorous foetal movements and frequent rising and fallings during the first stage parturition generally predispose pregnant animals to uterine torsion (Kolla *et al*., 1999; Schonfelder and Sonbiraj, 2005; Noakes *et al*., 2009). Uterine torsion is the single most important cause of dystocia in large animals to presented in Indian Veterinary Hospitals. The incidence ranges from 52-83% in all obstetrical cases encountered with buffaloes being the predominantly affected animal (Jeenger *et al*., 2015). In buffaloes, uterine torsion occurs more frequently in pluriparous buffalo cows (56%), at full term (72%), in clockwise direction and usually at post cervical locations (80%) (Jeenger *et al*., 2015). Spontaneous recoveries have been recorded but unresolved cases isgenerally believed to progress to foetal/maternal death, putrefaction and fatal maternal toxaemia (Noakes *et al*., 2009). This case report describes the clinical management of dystocia due to uterine torsion in a buffalo cow.

CASE PRESENTATION

Case History and Clinical Examination

A Murah breed of buffalo in her third pregnancy was presented to the Veterinary Polyclinic at the Indian Veterinary Research Institute, Izatnagar, Bareiley (UP) with the chief complaint of persistent straining during her second stage of parturition. This had lasted for over 14 hours without delivery of the calf. The vital parameters were found to be within normal range; Temperatureis at 37.5℃; pulse rate is at 50 bpm; respiratory rate15 cycle per min). Obstetrical history showed that she had two uneventful deliveries during her previous pregnancies. The current pregnancy was also uneventful until this case developed. Vaginal examination revealed a definitive diagnosis of uterine torsion. Per folding between the vagina and the cervix was observed. The angle of twist was left sided and was about 180°. The diagnosis of uterine torsion and direction of twist were also confirmed by palpation per rectum.

LaboratoryAnalysis

Blood sample (10 mL) was collected to determine haematological and serum biochemistry parameters. 5 mL of the collected whole blood was collected in EDTA vacutainer tubes to determine haematological parameters (red blood cell (RBC) counts, haemoglobin (Hb) concentration, mean corpuscular volume (MCV), mean corpuscular haemoglobin (MCH), mean corpuscular haemoglobin concentration (MCHC), total white blood cell (WBC) count as well as differential leucocyte count). All haematological evaluations were performed using standard laboratory procedures.

The other 5 mL of blood was collected in plain vacutainer tubes and serum was harvested after centrifugation at 1200 x *g* for 10 minutes. Serum concentration of total protein (TP), albumin (Alb), creatinine (Cr), blood urea nitrogen (BUN), calcium (Ca), phosphorus (P), magnesium (Mg) as well as serum aspartate amino transferase (AST), creatinine phosphokinase (CPK) were also determined using either commercial tests kits (Egyptin Co. Cairo Egypt) or a digital VIS/Ultraviolet Spectrophotometer (Cecil Instruments, Cambridge, England).

The results of the haematological and biochemical analyses are presented in Tables 1 and 2. The result indicated a normal PCVbut with an increased MCV. The differential leucocyte counts showed neutrophilia, lymphopenia and eosinophilia. There was also hypocalcemia and hypomagnesemia.

Table 1. Haematological Parameters of Buffalo Cow with Uterine Torsion

Haematological parameter	Values obtained	Reference Value
Red blood cell ($x10^{12}$/L)	8.25	6.41-10.64
Haemoglobin (g/L)	12.40	95.7-170.5
Haematocrit (%)	39.00	30.25-50.08
Mean corpuscular volume (fl)	64.00	40.26-54.24
Mean corpuscular haemoglobin (p/g)	21.00	12.77-18.55
Mean corpuscular haemoglobin concentration	36.00	29.36-36.95
White blood cell ($x10^9$/µL)	9.00	7.35-16.94
Neutrophills ($x10^9$/L)	7.10	1.39-6.78
Lymphocytes ($x10^9$/L)	2.00	4.79-11.05
Eosinophils ($x10^9$/L)	1.20	0.00-0.87
Basophils ($x10^9$/L)	0.00	0.00-0.00
Monocytes ($x10^9$/L)	0.53	0.00-8.00
Band cells ($x10^9$/L)	0.00	0.00-0.48

Table 2. Biochemical Parameters of Buffalo Cow with Uterine torsion

Biochemical parameter	Values obtained	Reference Value
Albumin (g/L)	38.60	24.9-40.7
Globulin (g/L)	24.30	23.4-50.0
Aspartate amino transferase (U/L)	51.80	22.29-68.71
Creatine phosphokinase (U/L)	73.80	14.66-309.80
Blood urea nitrogen (mmol/L)	16.32	7.73-21.12
Creatinine (/µmol/L)	113.00	83.98-151.16
Phosphorus (mmol/L)	0.20	1.42-2.54
Magnesium (mmol/L)	0.30	0.73-1.48
Calcium (mmol/L)	1.40	2.03-3.12

Management

Three litres of 5% dextrose was administered intravenously as fluid therapy during the management of the condition. Correction of uterine torsion was performed according to Schaffer's technique using the plank and rolling method. The buffalo cow was placed on left lateral recumbence with both fore- and hind limbs held separately. A wooden plank approximately 4 m long and 30 cm wide was placed on the right flank to firmly fix the uterus to the body of the abdomen. An assistant was assigned to stand on the free end of the plank to provide pressure to the opposite end on the flank of the patient (Figure1). The buffalo was rotated twice in this arrangement (Figure 2). After each rolling, per vaginal examination was performed to assess the success of reversing the torsion. The two rotations caused a complete dilatation of the cervix and breaking of the amniotic sac and the resultant escape of amniotic fluid. Assisted delivery was performed to deliver a male calf.

Two boli of Cleanex® (Nitrofurazone, Metronidazole, Urea and Povidone Iodine) was deposited *in utero* after the delivery of the calf. Calcium borogluconate at 25mg/kg SID was administered IV for two days. Flunixinmeglumin at 5mg/kg body weight was administered intramuscularly BID for three days.The buffalo and calf were alert and active one week after the intervention.

DISCUSSION

Uterine torsion is a common obstetrical condition in large animals (Singh, 1991; Jeenger *et al*., 2015). The occurrence of uterine torsion is affected by the different stages of

pregnancy. For example, it is seen to occur usually during the third trimester and around time of parturition (Rakuljic-Zelov, 2002). Uterine torsion occurs more frequently during the second stage of labour (Arthur *et al*., 1989).

Figure 1: An assistant was assigned to stand on the free end of the plank to provide pressure to the opposite end on the flank of the patient

Figure 2: Correction of uterine torsion according to Schaffer technique using the plank and rolling method

Uterine torsion occurs more frequently during the second stage of labour (Arthur *et al*., 1989). Uterine torsion is a common obstetrical condition in buffaloes and this could likely be due to the weight of the fetus *in utero* and a relatively less foetal fluid in relation to the foetus compared with cows (Schondfelder and Sobiraj, 2005; Amer *et al*., 2008; Amin *et al*., 2011). Due to these reasons, strong foetal movement coupled with wallowing in water during summer results in high incidences of uterine torsion among pregnant buffaloes.

In this case, a left sided uterine torsion was observed. Left sided uterine torsions are quite rare in animals (Alfaris *et al*., 2014). Most uterine torsions are right sided (Jeengar *et al*., 2015). In buffaloes, uterine torsion is seen as a complicated maternal cause of dystocia and if not corrected within 24 hours, death of the foetus is common and in some cases may lead to death of the dam (Jeengar *et al*., 2015). In this case, the animal was presented at the veterinary clinic and prompt diagnosis of uterine torsion was made and followed by its correction. This quick diagnosis and intervention may have perhaps saved the lives of the foetus and dam. Buffaloes with complete milk let down and relaxed pelvic ligaments when the uterine torsion occurred can be corrected irrespective of the degree of torsion. Buffaloes that are presented with uterine torsion of between 36-72 hours of occurrence and with <180°, a partial milk let down and a slightly tightened pelvic ligaments can be corrected. However, buffaloes with >180° of uterine torsion with the aforementioned description are however difficult to correct. Furthermore, buffaloes having uterine torsion for over 72 hours with diminished udder, tightened pelvic ligaments are similarly difficult to correct (Alfaris *et al*., 2014). An excessive torsion and duration of time spent with the torsion possess a significant threat to life of both dam and foetus through compromised blood supply and weak foetuses (Kumar *et al*., 2018).The act of correction of uterine torsion further potentiates existing stress. Complete correction of uterine torsion must be performed using the Schafer technique and must also be achieved within one or two acts and performed quickly. In cases described where correction of uterine torsion is not indicated, uterine torsion in the affected animal are preferably corrected through caesrean section (Kumar *et al*., 2018).

The haematological result indicates a normal PCV, neutrophilia, lymphopenia, macrocytosis and eosinophilia. Neutrophilia in ruminants is associated with mild to moderate inflammation. Physiologic causes of neutrophilia are usually effects of stress and excitement. In this case, the twisted uterine horn might be had undergone mild or moderate inflammation which could most likely have cause neutrophilia in addition to an underlying stress. Lymphopenia in ruminants is usually caused by corticosteroid induced response. Dystocia is causes significant stress in affected animals and may cause a release of corticosteroids (cortisol) which eventually suppress the production of leucocytes especially lymphocytes.Eosinophilia frequently occur due to parasitic infections, cancer (eosinophilic leukemia) or allergy. Although the level of parasitemia was not investigated in this case report, it may likely be that eosinophilia may be associated with an underlying endoparasitism. Macrocytosis without anaemia is usually observed in vitamin B 12 deficiency. It can also occur without any underlying pathologic condition or processes but can occur during pregnancy (Aslinia *et al*., 2006).

Conclusion

Cases of uterine torsion must be considered as an emergency and correction should be attempted immediately after diagnosis. In this case report, per vaginum examination in a Buffalo presented with dystocia revealed uterine torsion. The Schaffer's technique was successfully used to relieve the torsion.

Acknowledgement
The authors wish to acknowledge with thanks the technical support for haematology and serum biochemistry as provided by the staff of the Veterinary Polyclinic, Indian Veterinary Research Institute, Izatnagar, Bareiley (UP) during the management of this condition.

Author Contribution
ARM, SKG and JKP received the affected animal at the clinic. They made the diagnosis and and assembled the team to relive the dystocia. ARM, IDP, DI and IMA wrote the first draft of this manuscript. SOA, AA and MBU revised the manuscript and made technical inputs. All authors read and approved the final manuscript.

Conflict of Interest
The authors declare that they do not have any conflict of interest.

REFERENCES

Ahmed, N., Baishya, M.P., Das, J.M., Das, A., Boro, P.K., Yadav, S.N. and Sarma B.K. (2019). Surgical Managememnt of Dystocia in an Assam Hill Goat: A Case report. Haryana Vet. 58(S.I)114-115.

Alfaris, A.A., Fahad, T.A. and Hassan, B.J. (2014). Comparison between roling and surgical treatment of uterine torsion in buffaloes (*Bubalus bubalis*) in Basrah province. J. Vet. Med. Anim. Health. 6(2):67-68.

Ali, A.M.H. (2011). Causes and management of dystocia in small ruminants in Saudi Arabia. J. Agric. Vet. Sci. 42(2):95-108.

Ali, A.A., Derara, R., Husseina, H.A., AbdEllahb, M.R. and Abdel-Razeka, A. (2011). Clinical, haematological and biochemical findings of uterine torsion in buffaloes (*Bubalus bubalis*). Anim. Reprod. Sci. 126(3)168-172.

Amer, H.A., Hashem, M.A. and Bader, A. (2008). Uterine twisting during pregnancy in bufalloes: relationship between clinical findings and Biochemical indices. J. Appl Biol Sci. 2(2): 31-39.

Amin, S.M., Amer, H.A., Hussein, A.E. and Hazzaa, A.M. (2011). Creatinine phosphokinase and aspartate aminotransferase profiles and its relation to the severity of Uterine torsion in Egyptian Buffalo. Anim. Reprod. Sci. 123: 163-168.

Arthur, G.H., Noakes, D.E. and Pearson, H. (1989). Maternal dystocia: Treatment. Foetal dystocia: aetiology and incidence. The caesarean operation. In: Arthur GH, Noakes DE, Pearson H (ed). Veterinary Reproduction and Obstetrics (Theriogenology). London: BailliereTindall. 195-310.

Aslinia, F., Maza, J.J. and Yale, S.H. (2006). Megaloblastic anaemia and other causes of Macrocytosis. Clin. Med. Res.. 4(3): 236-41

Bhattacharyya, H.K., Fazili, M.U., Bhat, F.A. and Buchoo, B.A. (2015) Prevalence of dystocia of sheep and goats: A study of 70 cases (2004-2011). J. Adv. Vet. Res. 5(1): 14-20.

Frazer, G.S., Perkins, N.R. and Constable, P.D. (1996). Bovine Uterine torsion: 164 hospital referral cases. Theriogenol, 46, 739-758.

Jeenger, K., Choudhary, V., Maharia, S., Vivekanand and Purohit, G.N. (2015). A retrospective study on type and extent of uterine torsion in buffaloes. Res. J. Vet. Pract. 3(1):25-28.

Kolla, K.M., Prasad, V. and Radha, P. (1999). Clinical observation on uterine torsion in buffaloes. Indian Vet. J. 76: 643-645.

Kumar, B., Kumar, A., Kharayat, N.S., Bisla, A., Rashid, M., Sheikh, PA., Ramamoorthy, M., Ngou, A.A., Kurhe, R., Kumar, H. (2018). Uterine Torsion associated with incomplete cervical dilatation and subsequent fetalmaldisposition: A Case Report. Res. J. Chem. Environ. Sci. 6(5): 72-74.

Noakes,D.E., Parkinson, T.J. and England,G.C.W. (2009). Veterinary Reproduction and Obstetrics. 9th Ed. WB Saunders Company.

Rakuljic-Zelov, S. (2002). Haematological abd biochemical profile of cows affected with Uterine torsion. Slo. Vet. Res. 39(1):1580-4003.

Schondfelder, A. and Sobiraj, A. (2005). Etiology of torsio uteri in cattle: a review. Schweiz. Arch. Tieheilkd. 147, 397-402.

Singh, P. (1991). Studies on broad ligament in relation to uterine torsion in buffaloes. Thesis, Punjab Agriculture University, Ludhiana, India.