

MANAGEMENT OF HAEMORRHAGIC SHOCK BY BLOOD TRANSFUSION IN A GRADED MURRAH BUFFALO AFFECTED WITH CERVICO-VAGINAL PROLAPSE

Selvaraju Mani*, Periyannan Mani, Varudharajan Venkatraman,
Gopikrishnan Duraisamy, Raju Sreeranjani and Senthilkumar Krishnamurthy

Received: 02 April 2021

Accepted: 20 March 2025

ABSTRACT

A full term pregnant primiparous graded Murrah buffalo was presented to the Large Animal Obstetrics Unit, VCC and VCRI Namakkal with the history of cervico-vaginal prolapse with profuse bleeding. Animal was cast in the hindquarter elevator and blood vessels of the prolapsed mass were clamped temporarily with artery forceps and further ligated. Cervix was dilated after fanning and feathering and a dead male fetus was delivered by traction by keeping the prolapsed mass outside the vulva. After fetal delivery prolapsed mass was repositioned as per standard procedure. Since the PCV value was less than 15%, blood transfusion was done. Post operatively the animal was treated for five days with antibiotics and the buffalo recovered uneventfully. The present communication reports the significance of blood transfusion for the successful management of prepartum cervico-vaginal prolapse with severe blood loss.

Keywords: *Bubalus bubalis*, buffaloes, blood transfusion, cervico-vaginal prolapse, fetus, haematology

INTRODUCTION

Cervico-vaginal prolapse or casting of wethers is characterized by the prolapse of the floor, lateral wall, roof of the vagina through vulva with cervix and uterus moving caudally. Cervico-vaginal prolapses common in late pregnancy especially bovine and ovine species than the other species (Arthur *et al.*, 1996). Prevalence of vaginal prolapse is comparatively higher during the last 2 to 3 months of gestation. It might be during last trimester of gestation the increased estrogen concentration causes softening of the tissue (Kumar *et al.*, 2015). Prepartum vaginal prolapse occurrence is one of most common maternal gestational complication in water buffalos (Derar *et al.*, 2018) and higher incidence has been described (3 to 13%) in water buffalo (Pandey *et al.*, 2006). Recently, the occurrence of vagino-cervical prolapse with dystocia in a crossbred Jersey cow (Palanisamy *et al.*, 2018) and with multiple vaginal tears in a buffalo (Manokaran *et al.*, 2014) were reported. Cervico-vaginal prolapse comparatively easy to treat first few hours of occurrence and prolongation of treatment will cause circulation impairment leads to enlargement prolapse mass

Department of Veterinary Gynaecology and Obstetrics, Veterinary College and Research Institute, Namakkal, Tamil Nadu Veterinary and Animal Sciences University, Chennai, India,

*E-mail: drmselvaraju1969@gmail.com

due to oedema, stranguria, severe abdominal straining, septicaemia, necrosis of mucosal layer with multiple tears and all the above untoward events results in poor prognosis. The present case was reported to communicate the significance of blood transfusion in a graded Murrah buffalo affected with haemorrhagic due to profuse bleeding in the prolapsed cervix and vagina.

CASE HISTORY AND CLINICAL OBSERVATIONS

A full term pregnant primiparous graded Murrah buffalo was brought to the Large Animal Obstetrics Unit VCC, VCRI Namakkal with the history of protrusion of vagina and cervix. The animal was in sternal recumbency with severe abdominal straining. Physical examination revealed prolapse of the cervix and vagina with profuse bleeding. Clinical examination revealed subnormal temperature (36.8°C) with tachycardia, dyspnoea, pale mucus membrane. Vaginal examination through the prolapsed mass revealed three finger dilatation of the cervix and able to palpate the fetal extremities. The haematological and serological profiles were estimated before treatment which revealed 14% PCV, 5 gm% Hb, 6.5 mg/dl Calcium, 3.7 mg/dl Phosphorus, 1.7 mg/dl Magnesium and 73 u/l SGOT. It was found the animal was in haemorrhagic anaemia due to injury in the prolapsed mass.

TREATMENT AND DISCUSSION

The blood vessel was clamped with artery forceps immediately after being cast in the hindquarter elevator (Figure 1). The animal was

restrained with epidural anesthesia (2% Lignocaine hcl, 5 ml). The blood vessels were ligated with chromic catgut No. 2 and the bleeding was arrested. Urinary catheterisation was performed to relieve the urine (Figure 2). The cervix was dilated by fanning and feathering and a dead male fetus was relieved by traction (Figure 3). The lateral wall of the torn vagina was sutured following fetal delivery using chromic catgut No.2 (Figure 4). The prolapsed mass was washed with 2% KMnO₄ and the mass was repositioned after liberal lubrication with cetrimide cream. The vulval retention suture was applied to prevent recurrence. In order to prevent the haemorrhagic shock, it was decided to transfuse the blood to save the life of the animal. The required blood volume was calculated based on PCV and body weight. The blood was collected in Citric acid, Sodium citrate, Sodium di hydrogen, Phosphate, Dextrose and adenine contained 350 ml latex free blood bag (Sang X) from a healthy donor buffalo which was maintained in Livestock Farm Complex, VCRI, Namakkal. Cross mating of the blood was done with the buffalo affected with cervico-vaginal prolapse. Then the blood was transfused with 1.5 litres of blood to the affected buffalo at the rate of 150 drops/min (Figure 5). Further, the animal was treated with Inj. Calcium Borogluconate 450 ml i/v, Inj. Meloxicam (0.5 mg/kg i/m), Inj. Chlorpheniramine maleate (0.5 mg/kg i/m), Inj. Vitamin B1, B6, B12, Inj. Iron-Dextran and rumenotronics for five days. The blood profile was analysed once after 24 h of transfusion revealed 22% PCV, 9 gm% Hb, 9.3 mg/dl Calcium, 3.9 mg/dl Phosphorus, 1.8 mg/dl Magnesium and 75 u/l SGOT. The animal showed significant response and recovered uneventfully.

Vaginal prolapse in cows is often a chronic, recurrent, hereditary pre or peri partum disease and occurs most commonly in heavy



Figure 1. Clamping the blood vessel.



Figure 2. Urinary catheterisation.



Figure 3. Delivery of the dead male fetus by traction.



Figure 4. Suturing the lateral wall of the vaginal tear.



Figure 5. Blood transfusion in a graded Murrah buffalo.

dairy cattle before calving especially in the last trimester of pregnancy (Roberts, 1971). Varudharajan *et al.* (2019) reported mishandled cases of cervico vaginal prolapse in two cows with foreign bodies. The vaginal floor and lateral walls of the vagina were severely damaged along with the tears, lacerations and necrosis in the vulvar lips and managed by suturing (Manokaran *et al.*, 2014). Peripartum cervico vaginal prolapse with dystocia in a Jersey crossbred cow was managed with cervicotomy by Palanisamy *et al.* (2018). Increased intra-abdominal pressure associated with increased size of the pregnant uterus, intra-abdominal fat, rumen distension superimposed upon loose tissue structures in the pelvic canal and perineum mediated by increased circulating concentrations of estrogen and relaxin during late pregnancy are also certain predisposing factors of

parturition vaginal prolapse (Kumar *et al.*, 2015).

The occurrence of death of the animal due to hypovolemic shock in parturient periods could be handled immediately to save the economic loss to the poor farmers. The blood transfusion is one of the reliable procedures to save the animal from the hypovolemic shock and very first-time blood transfusion usually of low risk to the recipient. The volume of blood to be transfused is determined according to the recipient's body weight, estimated blood volume, PCV of the recipient and the donor accordingly to the extent of blood loss. Citrate phosphate dextrose adenine (CPDA-1) and acid citrate dextrose (ACD) are most used anticoagulants for storage of blood and heparin is only preferable for immediate transfusion because it activates platelets. For blood collection latex free plastic bags or plastic syringes should be used for

better result (Kumar, 2017). In the present report, we used the latex free blood bags for the blood transfusion. There is no report on haemorrhagic shock in obstetrical problem like CVP and total uterine prolapse. The death of dam in fresh cases is mainly due to heavy blood loss. The present case documents the successful management of haemorrhagic shock due to profuse bleeding in a graded Murrah buffalo affected with cervico vaginal prolapse by blood transfusion. Hence in the present case, blood transfusion at the earliest helped in saving the life of the dam.

REFERENCES

- Arthur, G.H., D.E. Noakes and H. Pearson. 1996. Veterinary reproduction and obstetrics. *Theriogenology*, 6th ed. Elsevier, WB Saunders Company, London, UK. p. 134-140.
- Derar, R.D., M.S. Rawy, H. Salah and M. Samy. 2018. Caesarian section as a last resort to treat a non-reducible cervico-vaginal prolapse in full term pregnant pluriparous buffalo cow: A case report. *Buffalo Bull.*, **37**(2): 241-247. Available on: https://kukrdb.lib.ku.ac.th/journal/BufferoBulletin/search_detail/result/380920
- Kumar, P., S. Dayal, R. Tiwari, D. Sengupta, S.K. Barari and A. Dey. 2015. Vaginal prolapse in peripartum primiparous Murrah buffalo complicated into endometritis and cystitis: A case report. *Buffalo Bull.*, **34**(2): 153-159. Available on: https://kukrdb.lib.ku.ac.th/journal/BufferoBulletin/search_detail/result/310279
- Kumar, R. 2017. Blood transfusion in veterinary medicine. *Journal of Hematology and Transfusion Medicine*, **4**(4): 116-122. DOI: 10.15406/htij.2017.04.00093
- Manokaran, S., M. Selvaraju and M. Palanisamy. 2014. Management of vagino-cervical prolapse with multiple vaginal tear in a buffalo. *Intas Polivet*, **15**(2): 468-469.
- Palanisamy, M., S. Manokaran, K.K. Ponnusamy, M. Selvaraju, P. Vikramachakravarthi, R. Ezakial Napoleon, G. Senthilkumar and S. Prakash. 2018. Peripartum vagino cervical prolapse with dystocia in a Jersey crossbred cow. *Indian Vet. J.*, **95**(4): 86-88.
- Pandey, A.K., S.P. Shukla and S.P. Nema. 2006. Incidence and therapeutic management of prepartum cervico-vaginal prolapse in buffaloes (*Bubalus bubalis*). *Indian Journal of Animal Production and Management*, **22**: 108-111.
- Roberts, S.J. 1971. Veterinary obstetrics and genital diseases. *Theriogenology*, 2nd ed. C.B.S. Publishers and Distributors, New Delhi, India. 69p.
- Varudharajan, V., M. Selvaraju, S. Prakash and K. Ravikumar. 2019. Management of mishandled cases of post-partum vagino-cervical prolapse by recurrence prevention with foreign body in two cows. *International Journal of Current Microbiology and Applied Sciences*, **8**(5): 68-71. DOI: 10.20546/ijcmas.2019.805.009