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Handling of pre-partum vaginal prolapsed in an advanced pregnant murrah she buffalo (*Bubalus bubalis*) followed by hypocalcaemia: A case report

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Abstract
A she buffalo of institutional livestock farm aged about 7 years and 3rd parity with advance pregnancy presented to gynaecology clinic with complaint of vaginal prolapsed. The prolapsed mass was replaced to normal position and prior to reposition animal has been given posterior epidural anaesthesia, anti-inflammatory, antihistaminic preparation as well as rope truss for a week. The green fodder Berseem which was used for routine feeding since 15 days was reduced to half. After a week, animal did not show any vaginal prolapse onwards. Later after 12 days, since report of vaginal prolapsed, animal successfully delivered a healthy male calf. A day after parturition animal became weak, anorectic, and inactive and finally went into sternal recumbency with hypothermia and ruminal stasis. The animal was tentatively diagnosed as hypocalcaemic. Blood serum calcium level showed 5.87 mg/dL. The buffalo successfully recovered after administration of calcium borogluconate together with Magnesium and Phosphorous and Dextrose solution. Excess feeding of phytoestrogenic fodder may have detrimental effects in the form of prolapsed of vagina especially in last trimester of gestational stages.

Keywords: berseem fodder; hypocalcaemia; prolapse; vagina; rope truss; phytoestrogen

1. Introduction
Prolapse of the cervix and vagina is a disorder of ruminants, normally in late gestation (Arthur, 1996)[5]. It is one of the major reproductive disorders in buffalo (Azawi, 2010) [6]. It is usually connected with pregnancy and parturition, which require immediate attention and efficient management because it is one of the grave obstetrical emergencies. It can be recognized by the protrusion of varying parts of the vaginal wall and some time the cervix through the vulva so that vaginal mucosa is exposed. Retention of prolapsed part is most important to prevent trauma to the prolapsed part (Rai and prabhakar, (2000) [19]; Kumar *et al.*, (2015) [14]. The exact cause of this ailment has not been found out but several factors are responsible for occurring this condition, the factor are nutritional imbalance Ahmed *et al.*, (2005) [1], hormonal imbalance (Galhotra *et al*., 1991) [9], seasonal-managemental factor (Mishra *et al*.,(1998) [16]; Gurchan *et al.*, (2003) [11]; Akhtar *et al.*,(2010) [2] and deficiency of serum minerals (Sah and Nakao, (2003) [20]; Ahmed *et al.*, (2005) [1]; Akhtar *et al.*, (2008) [4]; Umadevi and Umakanthan, (2011) [24]. A very few reports are also available which shows the diet of the animal containing a high estrogens content as in mouldy maize and barley, this can result in a high incidence of prolapse including relaxation of pelvic ligaments (Bnnetts, 1944) [7] and in sheep (Pugh,2002) [17]. Furthermore, the role of calcium in maintaining the adequate tonicity of vaginal musculature is well understood in preventing the occurrence of vaginal prolapsed (Marques *et al.*, 1996) [15]; Salmanoglu and Salmanoglu, (1998) [21] Ahmed *et al.*, (2005) [1].

2. Case History and Clinical Observation
An indigenous she buffalo of Institutional livestock composite farm, aged about 7 years and 3th parity with advance pregnancy of more than 10 months was presented to the gynaecology clinic of TVCC, BVC, Patna in the month of february'2018 with the complain of severe straining, restlessness and a very big size of round mass protruding from vulva cleft since 8 hours approx. On through gynaecological examination it was found that the mass came out of vulva was nothing but the vaginal mucus prolapsed (Figure 1. A).The protruded mass was moist, bloody red patches with diameter of more than 10 mm and soft. However, there was not any sign of traumatise lesion or necrosis. External os of cervix was examined, revealed that the animal would parturate soon as it was determined by the tenderness of the external os of cervix.

The body temperature was observed of 101^0F. On enquiry regarding the routine diet of the said animal it was informed that the buffalo has been usually given Berseem as green fodder besides concentrate and mineral mixture since 15 days. Later after 12 days the buffalo successfully delivered a healthy male buffalo calf. Foetal membrane was expelled after about 8 hour. A day after parturition animal became weak, anorectic, and inactive and finally went into sternal recumbency with hypothermia (<98^0F) and ruminal stasis. The animal was tentatively diagnosed as hypocalcaemic or so called Milk fever (Figure 1. C), thereafter 5 ml blood from the jugular vein was collected in vial for estimation of blood serum calcium by Calcium Kit.

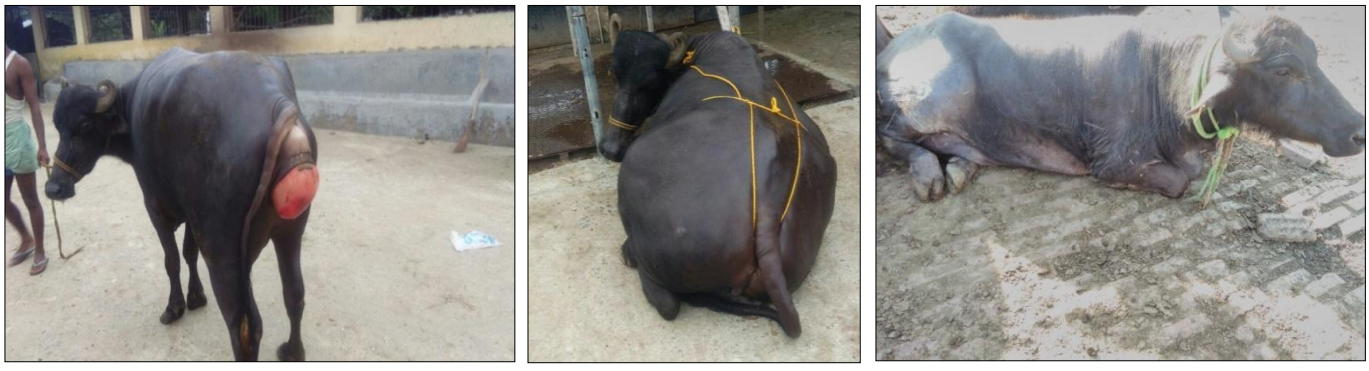
3. Treatment and Discussion

The buffalo was treated with Lignocain hydrochloride (Xylocaine® 2% German Remedies) injection 10 ml intercoccygeal to obviate continuous straining. The prolapsed mass and surrounding area were cleaned with $KMnO_4$ solution (1:1000) and prolapsed mass was lifted to the level of ischial arch and about 1000 ml of urine was relieved, thereafter, prolapsed mass was replaced with gradual force into normal position. Besides these treatments an anti-inflammatory Meloxicam (Melonex plus® Intas) injection 15 ml IM and antihistaminic chlorpheniramine maleate (Anistamine® Intas) injection 5 ml IM was given for 3 days as well as a rope-truss (Figure 1.B) was also applied for a week for controlling prolapse of vagina. The staffs of the farm was advised to reduce the half of the amount of fodder especially of Berseem, simultaneously an advice was also given to attending staff to have the animal standing, preferably with the rear parts elevated to the ground. After a week, rope-truss which was applied was removed, thereafter, the buffalo did not show vaginal prolapsed. Similar management of prepartum vaginal prolapse using a rope truss has been reported by Veeraiah and Srinivas (2010) [25]. Later after six days animal successfully delivered a healthy male buffalo calf. A day after parturition animal has been given slow intravenous infusion of 350 ml solution of calcium borogluconate together with Magnesium and Phosphorous and Dextrose (Mifex® Elanco) based on tentatively diagnosed milk fever as per Radostits, (2006) [18] and remainder 100 ml by subcutaneous route along with an advice to remove the calf from buffalo with instruction to sufficiently draw colostrums for maintenance of calf. Later after one day following Mifex infusion animal start to slowly recover. A second dose of Mifex infusion was also given after 24 hours. The buffalo completely recovered after 3 days.

Pre-partum prolapsed of vagina is most commonly observed complication of late pregnancy in buffalo. The estrogens and progesterone play an important role in maintaining pregnancy (Thota *et al.*, 2003) [23]. As phytoestrogen are substances found in plant which has similar effect as estrogenic hormones and chemically belong to the isoflavones as well as having significant biological effects in animals because of the large amount ingestions (Samanta *et al.*, 2004) [22]. The reason behind the occurrence of prolapsed of vagina in the present case might be the feeding of Barseem (Trifolium alexandrium) as green fodder, as because, this fodder contains 1079.11ppm of phytoestrogen which is more than the other fodders such as Lucerne, Subabool, Mustard, Maize, Oat and guinea grass (Kaur *et al.*, 1999) [13]. The present case is in-agreement with the report of Bnnetts, (1944) [7]. So it is imperative to link the feed high in phytoestrogen and may be one of the reasons for occurring prolapse of vagina in livestock. Moreover, the concrete scientific research reports on feeds that high in phytoestrogen with the occurrence of vaginal prolapse in animals are lacking The increasing of serum estradiol concentration with decreasing in progesterone concentration as a cause of vaginal prolapsed in affected buffalo has also been reported by Akthar *et al.*, (2012) [3] and cow (Vincenti *et al.*, 1992) [26].

Almost all dairy cows are usually experience subclinical hypocalcaemia within 24 hr after calving, while in some cows hypocalcaemia is more severe (Goff, 1999) [10].

In the present case, observed serum calcium concentration was 5.87 mg/dL (1.47 mmol/L) which is less than the normal serum calcium concentration in healthy lactating buffalo 11.21±0.9 mg/dL (2.87 mmol/L) as reported by (Hagawane *et al.*, 2009) [12] and in cows 8.69 mg/dL (Djokovic *et al.*, 2014) [8]. The total serum calcium level in the present case study was also concurred with the finding of Radostits, (2006) [18] with slight differences.



A. **B.** **C.**

Fig 1: showing Vaginal prolapsed, putting of rope-truss and hypocalcemic buffalo

4. Conclusion

Excess feeding of phytoestrogenic fodder may have detrimental effects as to prolapse of vagina especially in last trimester of gestational stages and moreover parity as well as ages of animal may influence calcium homeostasis and may led to occurrence of hypocalcaemia. Therefore, excess feeding of phytoestrogenic fodder should be avoided simultaneously proper control measure should be adopted against hypocalcaemia.

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