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SUCCESSFUL SURGICAL MANAGEMENT OF FETAL MACERATION IN CROSSBRED COW

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Article Info

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Abstract

A pluriparous Jersey crossbred cow, six years old and eight months pregnant in its third lactation, was brought to the Large Animal Obstetrics Unit of VCC, VCRI Orathanadu due to abdominal straining and vaginal discharge over the past 15 days. The cow appeared listless, had a wet muzzle, and exhibited an elevated rectal temperature of 40.2°C. A per-vaginal examination found a two-finger dilation of the cervix's external os and malodorous discharge. A per-rectal examination disclosed a thick-walled doughy uterus and fetal bones palpated within the uterine body. Trans-rectal ultrasonography verified the presence of fetal bones as echogenic shadows in hypo-anechoic fluid, resulting in a confirmed diagnosis of fetal maceration. As a result, a laparohysterotomy was performed using a left flank incision under local infiltration anesthesia. Adhering to the standard procedure, a Caesarean was conducted, and the macerated fetus' bones were fully extracted from the uterus. The uterine incision was closed with Cushing's and Lambert suture patterns, the abdominal muscles were secured with a continuous interlocking suture pattern, and the skin was closed with a horizontal mattress suture pattern using nylon. The cow received postoperative treatment, including Streptopenicillin, Oxytocin, Flunixin meglumine, Chlorphenaramine maleate, and Meloxicam, for seven days. The skin sutures were removed after 12 days, and the cow recovered without complications, becoming active after finishing the treatment.

Introduction

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Fetal maceration is a pathological condition that occurs when a dead fetus is retained in the uterus for an extended period, leading to the disintegration and absorption of fetal tissues (Gupta et al., 2013). This condition can have severe consequences on the health of the dam, including secondary infections, decreased fertility, and even death (Gupta et al., 2013). In cattle, fetal maceration is primarily associated with dystocia, abortion, and fetal mummification (Azawi, 2008). The incidence of fetal maceration in crossbred cows is not well documented; however, it has been reported to occur in 0.5-2% of calvings (Gupta et al., 2013). The successful surgical management of fetal maceration in a crossbred cow is essential to minimize the adverse effects on the dam's health and ensure future reproductive success.

Several factors can predispose a cow to fetal maceration, including genetic factors, infectious agents, and environmental stressors (Azawi, 2008; Kumar et al., 2016). In crossbred cows, genetic factors such as chromosomal abnormalities and congenital defects can lead to fetal maceration, as the fetus may not be viable (Kumar et al., 2016). Infectious agents such as Brucella abortus, Campylobacter fetus, and Tritrichomonas foetus can cause abortion and subsequent fetal maceration (Azawi, 2008). Environmental stressors, including heat stress, malnutrition, and trauma, can also contribute to fetal death and maceration (Kumar et al., 2016). Early diagnosis of fetal maceration is crucial for successful management and recovery. Clinical signs of fetal maceration in cows include foul-smelling vaginal discharge, enlarged uterus, and systemic signs such as fever, anorexia, and depression (Azawi, 2008). Diagnosis can be confirmed through ultrasonographic examination of the uterus and assessment of the foul-smelling discharge (Gupta et al., 2013). In some cases, radiography may also be used to visualize fetal bones (Azawi, 2008). The treatment of fetal maceration in cows depends on the severity of the condition and the health status of the dam. Conservative management, including antibiotic therapy and hormonal treatment, can be used in mild cases (Gupta et al., 2013). However, surgical intervention is often necessary in severe cases or when conservative treatment fails (Azawi, 2008). Surgical techniques such as fetotomy, cesarean section, and hysterectomy have been reported for the management of fetal maceration in cows (Gupta et al., 2013).

Fetotomy is the surgical removal of the dead fetus in pieces, which can be performed either vaginally or through a laparotomy (Gupta et al., 2013). This technique is recommended when the fetus is disintegrated and can be easily removed in pieces (Azawi, 2008). A cesarean section involves the surgical removal of the fetus through an incision in the abdominal wall and uterus (Gupta et al., 2013). This technique is indicated when the fetus is too large to be removed vaginally or when the dam's pelvic area is too small for fetotomy (Azawi, 2008). Hysterectomy, the surgical removal of the uterus, is considered a last resort when all other techniques fail or the dam's health is severely compromised (Gupta et al., 2013).

Fetal maceration is a severe pathological condition in crossbred cows that can have detrimental effects on the dam's health and future reproductive success if not managed appropriately. Early diagnosis and prompt surgical intervention are crucial for successful management and recovery. The choice of surgical technique depends on the severity of the condition and the health status of the dam. Further research is needed to better understand the predisposing factors and develop preventive strategies for fetal maceration in crossbred cows.

Treatment and Discussion

The cesarean section was decided to perform lapro-hysterotomy by left flank incision under local infiltration anaesthesia with 2% lignocaine hydrochloride using left ventro-lateral (Oblique) approach. As per the standard procedure, about 15 inches long incision (Fig. 3) was made on skin and muscles were severed. Gravid uterine horn was taken out and was packed with draper to prevent leakage of uterine contents into peritoneal cavity. About 8 inch long incision (Fig. 4) by using scalpel was made on the gravid horn and a macerated fetal bones

(Fig. 5) were taken out. The uterine incision was closed with Cushing's followed by Lambert suture pattern using PGA-2 and abdominal muscles were closed with continuous interlocking suture pattern by using PGA-2. Finally, the skin was closed by horizontal mattress suture pattern with nylon. The crossbred cow was treated post-operatively with Streptopenicillin 5gm, i/m, 40 IU of Oxytocin i/m, Flunixin meglumine @1.1mg/kg b.wt i/m, Chlorphenaramine maleate @ 0.5mg/kg b.wt i/m, Meloxicam @ 0.5mg/kg b.wt i/m for seven days and skin sutures were removed after 12 days. On per-rectal examination at 40 days of post surgery uterus was found completely involuted without any complication. The cow recovered uneventfully and become active after completion of treatment (Fig. 6).

The reason for the non-delivery of a dead fetus could be following death of the fetus if cervix is not dilated properly fetus is not expelled and there is history of chronic fetid mucopurulent

discharge from the vulva over a long period of time as was seen in the present case. The dead foetus and open cervix at the body temperature cause a rapid invasion of the foetus and membranes by the organisms already present in the uterus or from the more caudal portion of the reproductive tract. Caesarean section should be considered as a last resort in valuable cow otherwise slaughter is recommended (Roberts, 1971). In literature there are reports for expelling the fetus using several drugs including estrogen, prostaglandins and Valethamate bromide and failure of this therapy may be recorded if cervix is hard and indurated (Roberts, 2004) or presence of structure less macerated fetus (Ball *et al.,* 1980). Surgical removal is considered as the best resort in the cow. However, the future fertility is always doubtful (Noakes *et al*., 2001). Longer the condition exists greater the damage of the endometrium and poorer the prognosis. However, in our case, animal was completely recovered with no further complication probably because of earlier diagnosis of the condition and immediate removal of the macerated fetus (Bhattacharyya *et al.,* 2015). Left ventro-lateral/ oblique approach for caesarean is usually suitable as contaminated uterus can easily be retracted outside and thereby helps in easy expelling of the uterine contents. This approach was described by Parish and his coworkers (Paries *et al.,* 1995). It is concluded that the caesarian section should be performed immediately in the failure of expulsion of foetus within 72 hours after administration of PGF2α. The longer the condition had existed the greater the damage to the endometrium and the poorer the prognosis otherwise humane slaughter is recommended (Krishnakumar *et al.,* 2008).

References

Azawi, O. I. (2008). Postpartum uterine infection in cattle. Animal Reproduction Science, 105(3-4), 187-208.

Gupta, A., Malik, V., Kumar, A., & Singh, S. (2013). Surgical management of fetal maceration in a cow. Indian Journal of Veterinary Surgery, 34(2), 143-144.

Kumar, A., Roy, A., & Das, G. K. (2016). Management of fetal maceration in crossbred cows. International Journal of Science, Environment and Technology, 5(4), 2164-2168.**Case history and Observation**

A six years old, eight month pregnant pluriparous Jersey crossbred cow in third lactation was presented to Obstetrics Unit of VCC, VCRI Orathanadu with the history of abdominal straining and vaginal discharge for past 15 days. The history revealed that it was treated locally without success. Clinically the cow was dull with wet muzzle but rectal temperature was slightly elevated (40.2°C). Per-vaginal examination showed two finger dilatation of external os of cervix with foul smelling discharge. Per-rectal examination revealed thick walled doughy uterus and fetal bones were palpated in uterine body. The transrectal

ultrasonographic findings confirmed the presence of fetal bones as echogenic shadows in hypo-anechoic fluid (Fig. 1 & 2). The case was confirmatively diagnosed as fetal maceration.

Ball, L. and Brand, A., Elective termination of unwanted and pathological gestation. In: Current Therapy in Theriogenology. Ed D. A. Morrow. W. B. Saunders. pp 238-245 (1980).

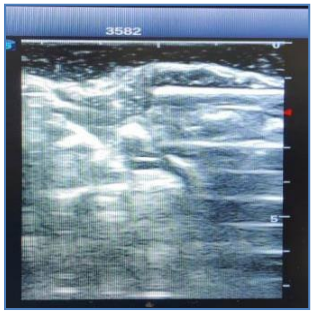
Bhattacharyya H. K., Dar. S. A. and Fazili. M. R. (2015) Fetal Maceration in Crossbred Holstein Frisian Heifer-A Case Report. *International Journal of Veterinary Sciences Research. Vol. 1, No. 1, pp. 1-4*

Drost, M. Complication during gestation in the cow. (2007). *Theriogenology,* vol. 68, pp. 487-491.

Krishnakumar, K. Prabaharan, V. Chandrahasan, C and Ezakial Napolean, R. (2008). Foetal Maceration due to Uterine Torsion in a Cross Bred Cow. *Tamilnadu J. Veterinary & Animal Sciences 4 (5) 203-204.*

Noakes D.E. (Eds). Arthur's veterinary reproduction and obstetrics, Philadelphia: W.B. Saunders, 2001, p. 138.

Fig .3



Irregular Hyperchoic Reflections

Fig .4

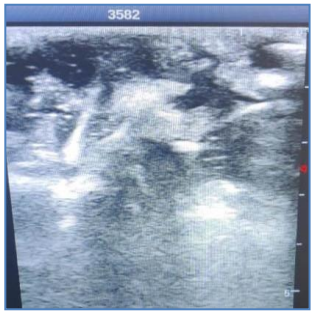


Fig .5

Abdominal Incision

Fig .6

Uterus exposing fetal bones

Arrangemnt of complete Fetal bones

Uneventul recovry