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Surgical management of fetal maceration in a Jersey crossbred cow

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Abstract

A six years old full term pregnant Jersey crossbred cow was presented to Large Animal Obstetrical Unit, VCRI, Salem with the history of inappetence, intermittent straining and reddish foul smelling vaginal discharge for the last 4 days. Vaginal examination revealed two finger dilatation of cervix with foul smelling reddish watery discharge from the uterus. Rectal examination revealed thick walled doughy uterus with crepitating mass of fetus inside the uterus indicating fetal maceration. An attempt to dilate the cervix by administration of cloprostenol and dexamethasone was futile. Therefore, it was decided to perform the caesarean section as per standard procedure and macerated fetus was removed. The fetus was pulled apart in removal through uterine incision. Post operatively the animal was treated with antibiotic, anti-inflammatory, antihistamines, ecbolics, IV fluids for 7 days. The cow recovered uneventfully and become active after completion of the treatment.

Keywords: Fetal maceration, C-section, Jersey crossbred cow

Introduction

Maceration may occur at any stage of gestation and has been observed in all species following fetal death, regression of corpus luteum and failure of abortion. It is described most frequently in the cow (Long, 2001) [1]. Fetal maceration is often observed in animals at term when a dystocia has been overlooked or neglected for 3-10 days. The two factors of an open cervix and a dead fetus at body temperature cause a rapid bacterial invasion of the fetus and membranes, fetal emphysema and maceration follow (Roberts, 1971) [2]. In early case of fetal maceration, the fetus may be removed per-vaginum by careful and gradual traction if the cervix sufficiently dilated and much lubrication is used (Shalini *et al.*, 2018) [3]. In few cases in cattle in which the cervix is contracted and the macerated fetus cannot be removed. These cases may be treated with estradiol or PGF_{2α} to cause dilatation of cervix (Anand Kumar *et al.*, 2020) [4]. Caesarean section should be considered as a last resort in cow to relieve the macerated fetus if the hormonal treatment is not effective (Kumar *et al.* 2013) [5]. The present paper describes management of fetal maceration through caesarean section in a Jersey crossbred cow.

Case history and Observation

A six years old full term pregnant pluriparous Jersey crossbred cow was presented to Large Animal Obstetrical Unit of Veterinary Clinical Complex, Veterinary College and Research Institute, Salem with the history of inappetence, intermittent straining and reddish foul smelling vaginal discharge for the last 4 days. Clinically, the animal was depressed and evidenced rectal temperature of 39.8 °C. The pulse and respiratory rate were also on higher side. Vaginal examination revealed two finger dilatation of cervix with foul smelling reddish watery discharge from the uterus. Rectal examination revealed thick walled doughy uterus with absence of fetal movements and fremitus indicating dead fetus. Rectal examination also revealed crepitating mass of fetus inside the uterus. Based on clinical examination, the case was diagnosed as fetal maceration.

Treatment and Discussion

An attempt was made to dilate the cervix and remove the fetus per-vaginum by administration of Cloprostenol 500 µg i/m, Dexamethasone 40 mg i/m, Calcium borogluconate 450 ml i/v and 25% Dextrose 500 ml i/v.

There was no change in the dilatation of cervix after 2 days and an effort to deliver the fetus per-vaginum was futile. Therefore, it was decided to perform the caesarean section by left flank incision under paravertebral nerve block with 2% lignocaine hydrochloride using left ventro-lateral (Oblique) approach. As per the standard procedure, about 15 inches long incision was made on skin and muscles were severed (Fig. 1). 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 by using scalpel was made on the gravid horn. The fetus was in advanced stage of emphysema, maceration and decomposition. The fetus was pulled apart in removal through uterine incision. The fetal parts were removed in pieces from the uterus (Fig. 2).

After removal of the macerated fetus, the uterus was cleaned with Normal Saline and diluted Povidone Iodine solution. The uterine incision was closed with Cushing's followed by Lambert suture pattern using PGA-2. The abdominal muscles were closed with continuous interlocking suture pattern by using PGA-2. Finally, the skin was closed by cross mattress suture pattern with silk. The crossbred cow was treated post-operatively with Streptopenicillin 5 gm i/m, Meloxicam @ 0.5 mg/kg b.wt i/m, Chlorphenaramine maleate @ 0.5 mg/kg b.wt i/m and 40 IU of Oxytocin i/m. Antibiotic, anti-inflammatory, oral ecobolics and supportive therapy were continued for seven days and skin sutures were removed after 12 days. The cow recovered uneventfully and become active after completion of the treatment.

In cattle, maceration occurs at any stage of gestation as a result of fetal death leading to bacterial decomposition, wherein the abortion fails or the dam is unable to expel the fetus due to uterine inertia (Long, 2001) [1]. If the bovine fetus is beyond the third month of pregnancy and if the usual expulsive efforts are not observed or are unsuccessful, the fetus develops emphysema in 24 to 48 hours and in 3-4 days maceration begins. Fetal maceration is often observed in animals at term when a dystocia has been overlooked or neglected for 3-10 days (Roberts, 1971) [2].

In early cases, palpation per rectum of a distended, swollen fetus with gas crepitating in the tissues is diagnostic of fetal emphysema and maceration in cattle (Roberts, 1971) [2]. In long standing cases, on rectal examination in the cow, fetal bones may be palpated in the uterus either floating in pus or crepitating against each other with some exudate around them (Kumar *et al.* 2013) [5]. Since the present case was brought earlier i.e. 4 days after onset of clinical signs, rectal examination revealed crepitating mass of fetus inside the uterus. The fetus was pulled apart in removal through uterine incision during caesarean section.

In early case of fetal maceration, the fetus may be removed per-vaginum by careful and gradual traction if the cervix sufficiently dilated and much lubrication is used (Shalini *et al.*, 2018) [3]. However, in the present case, 2 finger dilatation of cervix was noticed. Hence, an attempt was made to dilate the cervix and remove the fetus per-vaginum by administration of PGF_{2α} and Dexamethasone. There was no change in the dilatation of cervix after 2 days of the treatment. Similarly, failure of cervical dilation with PGF_{2α} or estradiol was also reported by Kumar *et al.* (2013) [5], Jasmer Dalal *et al.* (2018) [6] and Haben Fesseha (2020) [7].

Caesarean section should be considered as a last resort in cow to relieve the macerated fetus if the hormonal treatment is not effective. However, the future fertility is always doubtful (Long, 2001) [1]. Longer the condition exists greater the

damage of the endometrium and poorer the prognosis in fetal maceration (Bhattacharyya *et al.* 2015) [8]. However, in the present case, animal was completely recovered with no further complication probably because of earlier diagnosis of the condition and immediate removal of the macerated fetus. Successful surgical management of fetal maceration in cow was also reported by Kumar *et al.* (2013) [5], Bhattacharyya *et al.* (2015) [8], Jasmer Dalal *et al.* (2018) [6] and Prabakaran *et al.* (2020) [9]. The present case reports fetal maceration in a Jersey crossbred cow and its successful management through caesarean section.



Fig 1: Abdominal muscle incision



Fig 2: Removal of macerated fetus from uterus

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