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Olgu Sunumu / Case Report

Dystocia due to Dicephalus in a Cow

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Abstract: Dicephalus, which is also referred to as Monstroglia, is a congenital disorder with two heads on one body. A non-descript cow in the third stage of labor and four years of age was brought to the animal hospital of Veterinary Faculty of Atatürk University with the history of straining for the for 2 days with unsuccessful attempts to deliver the fetus. Successful delivery of a dead dicephalic monster fetus by cesarean was recorded. Cow was recovered without any post-partum complication.

Keywords: Caesarean Section, Cow, Dicephalus, Dystocia

Bir İnekte Dicephalus Bağlı Güç Doğum Olgusu

Özet: Monstroglia olarak geçen disefalus olgusu; iki başın tek gövdede bulunduğu kongenital bir bozukluktur. Bu olguda dört yaşında doğumun üçüncü aşamasında olan Simental ırkı bir inek son 2 gündür şiddetli kasılmaları olmasına rağmen doğumun gerçekleşmemesi şikayetiyle Atatürk Üniversitesi Veteriner Fakültesi Hayvan Hastanesine getirildi. Ölü dicephalus fetus sezaryen operasyonu ile başarılı bir şekilde uterustan çıkarıldı. İnek operasyon sonrası herhangi bir komplikasyon olmaksızın iyileşti.

Anahtar Kelimeler: Dicephalus, Güç Doğum, İnek, Sezaryen Operasyonu

1.Introduction

The targeted strategy of a dairy farm is to obtain one calf from a cow in a year (1). However, calf deaths and serious injuries to the dam due to dystocia cause significant economic losses (2,3). Monstroglia is also one of the most common causes of difficult birth in cattle (4). Monstroglia is a developmental disorder that causes disruption in the anatomical integrity of the fetus (5). Monstroglia calves are mostly stillborn while living ones die within a few hours of parturition (6). In order to prevent economic losses, it is very important to investigate the causes of monstroglia in detail and to diagnose them as early as possible (7). Dicephalus case, referred to as Monstroglia, is a congenital disorder with two heads on one body (8). Congenital duplication due to the almost complete fusion of two fetuses is rarely seen (9). Duplication of the caudal part of the body is more common than the cranial part possible (7,9). A dicephalic fetus is thought to develop possibly due to the partial or complete fusion of two developing embryos or partial replication of a body or anteroposterior compression of the embryonic disc (10). The embryonic disc begins to differentiate on the 13th day. If separation occurs after the 13th day, the twins share their body parts in addition to sharing their chorion and amnion (11). Various teratogens are the causative agents of monstroglia (6). The period of high sensitivity to tetragons is during organogenesis (6). If it is diagnosed early, the management of such twins is the termination of pregnancy, whereas cesarean section is the recommended approach for late cases or near parturition (12).

2. Case Presentation

A four years old Simmental cow, weighing approximately 350 kg, was brought to the animal hospital of the Veterinary Faculty of Atatürk University on 31st October 2020 with the complaint of dystocia. The cow had a full-term pregnancy and showed calving signs 48 hours before bringing to the clinic. Amnion and allantois sacs were ruptured, and the cow exhibited mild and intermittent straining. On clinical examination, the cow appeared awake and active with normal rectal temperature (38.7 ºC), high pulse (135/minute), and respiration (47/minute) rate. In a transvaginal examination, the position was posterior longitudinal lumbosacral position. Traction was done by the owner. However, it failed. As a result of strong traction, the hind limbs of the calf ruptured. The cesarean operation was decided after taking history and careful clinical examination. Fluid therapy (isotonic, lactated ringer) was initiated in the

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perioperative period to stabilize the dam's condition. Linear infiltration and paravertebral anesthesia were performed. An approximately 12 cm long skin incision was made. The uterus was reached after skin and abdominal dissection. The fetus removed after the hysterotomy was an emphysematous dead calf with two fully developed heads of one length (Figure 1). The two necks were fused caudally. The uterus was washed with 0.9% saline solution. The tablet containing sulfadiazine and trimethoprim was introduced into the uterus to prevent contamination. The laparotomy incision was sutured according to the standard technique. Five-day intramuscular Ceftiofur antibiotic, 3 days intravenous infusion Ringer's lactate 3000 ml and three days intramuscular Meloxicam were recommended.



Figure 1: Fetus with dicephalus and tetraopthalmus.

3. Discussion and Conclusion

Fetomaternal disproportion is the most common cause of dystocia in cattle. The disproportion can be relative or absolute (9). The fetus reported in this case had one neck (monauchenos), two heads (dicephalus), each with separate nostrils, two eyes (tetraoptalmus), and two ears. The fetus represented an infant of absolute size. Both heads were almost the same size. These observations were similar to previous findings (13). Numerous factors can cause the formation of dicephalus monstroglia, including genetic and environmental conditions. In this condition, twins don't separate 13 days after fertilization (12). Monstroglia is caused by adverse factors affecting the fetus in its early development stages. Adverse factors are mostly of genetic origin but can also be physical, chemical, and viral factors (14). When handling cases of dystocia, the birth canal should be taken into account, as well as the obstetric aspects of the fetus in the decision-making process. It should be noted that persistent application of extraction force can often lead to injury to the birth canal and other complications that can be fatal to the dam (2).

The outcome of such types of cases depends upon the timely diagnosis and appropriate line of treatment. Therefore, much of the time should not be wasted at the field level, and such cases should be referred to animal hospital.

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