

Management of fetal dystocia caused by carpal flexion in ewe: A case report

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ABSTRACT

Dystocia or difficulty in parturition in a ewe may need veterinary assistance for the successful parturition. An adult ewe weighing 30 kg was presented to the Hospital of Veterinary Medicine, Universiti Putra Malaysia with the history of difficulty in giving birth. Physical examination of the ewe revealed that the animal was weak and in recumbent position. Head of a dead fetus was observed as protruding out from the vulva region. Through physical evaluation of the ewe by per vaginal examination, the condition was diagnosed as fetal dystocia. Treatment and management plans given to the ewe were episiotomy and manipulative delivery of the dead fetus via traction and method. Post-operative treatment was given with Flunixin meglumine (dosed at 2.2 mg/kg bwt) for 3 days, and Norodine (dosed at 1 mL/16-kg bwt) once intramuscularly. The case was completely cured after 2 weeks. The risk of losing the lamb as well as the ewe increases with delay in treatment of dystocia.

Keywords

Dystocia, Clinical management, Carpal flexion, Ewe

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INTRODUCTION

The Dorper sheep is a hardy South African composite breed that was derived from the cross between the Black-headed Persian and the Dorset Horn sheep (Cloete et al., 2000). Dorper sheep is early maturing, and the ewe can lamb at an age of 1 year (Cloete et al., 2000). Abnormal or difficulty in giving birth is referred to as dystocia (Youngquist et al., 2007). Blood et al. (2011) also defined dystocia as difficulty in parturition to the point of needing human intervention. There are two types of factors that lead to incidence of dystocia in ewe. Firstly, the fetal factors which include oversized fetus, lamb malpresentation, malposition, postural defects, and congenital abnormalities. Secondly, the maternal factors which include over feeding of dam during pregnancy, uterine inertia in polytocous ewes, and small diameter of pelvic canal (Pugh et al., 2012). The risk of losing the lamb, and its mother increases with delay in treatment of dystocia, and prolonged dystocia in ewes may cause necrotic metritis which is usually fatal (Mee, 2008; Christos et al., 2012). Dystocia cases can either be handled medically or surgically (Scott, 2006). Medical management is an option when the dam and the fetus are remained as stable where there is proper fetal position, presentation and posture with no obstruction (Noakes, 2009). In this case, oxytocin can be administered intramuscularly with or without calcium borogluconate to assist in contraction of uterus (Smith et al., 2009). On the other hand,

surgical management or cesarean section is needed in obstructive dystocia, dystocia accompanied by shock or systemic illness, uterine inertia, prolonged active labor or failure in medical management (Majeed et al., 1993). Cesarean section was reported to be an effective method for the treatment of dystocia in ruminants, especially when it is performed early after onset of labor (Majeed et al., 1993). This clinical case report presents the management of dystocia in a ewe caused from fetal abnormal posture.

History: An adult female Dorper sheep weighing 30 kg was presented to the Hospital of Veterinary Medicine, Universiti Putra Malaysia with the history of difficulty in giving birth. The vaccination and deworming status were up-to-date. The process of parturition commenced the night before presentation to the hospital.

Physical examination: Physical examination revealed that the ewe had tachycardia, pale mucous membrane with capillary refill time of 3 sec. The ewe was weak and on recumbent position. There was rupture of the fetal membrane and protrusion of a fetus head out from the vulva region (Figure 1a). Fetal examination revealed that the fetus was already dead as there was no suckling reflex. The fetal presentation was found as normal with anterior presentation, normal position with dorso-ventral position, but posture was abnormal where the carpal joints were flexed at both forelimbs. This posture resulted in the engagement of the fetal chest in the pelvic brim of the dam. Based on the per-vaginal examination, the condition was diagnosed as fetal dystocia due to bilateral carpal flexion posture.

Treatment and Management Procedure: The therapeutic plan for this case was to remove the dead fetus via traction and traction method. Flunixin meglumine dosed at 2.2 mg/kg bwt was administered first intravenously as analgesic and anti-inflammatory. Then, 500 mL of 5% Dextrose fluid was administered intravenously to prevent shock during fetal extraction and to correct the dehydration status (Figure 1b). Caudal epidural anesthesia was performed between first and second intercocygeal space using 2.5 mL Lignocaine hydrochloride 2% before the procedure (Figure 1c). KY jelly and NaCl solution were pumped into the birth canal for lubrication, and to create a pseudo amniotic bag for easy manipulation of the fetus. Correction of the dystocia was performed using the repulsion and traction method where the fetus was pushed back into the uterine cavity to correct the fetus position and the fetus was then pulled out. However, there was limited space for manipulation of the flexed

carpal joint and therefore repulsion of the fetus could not be achieved. Thus, episiotomy was indicated. Ring block using 5 mL of Lignocaine hydrochloride was performed around the vulva region. After aseptic preparation of the area, ring block using 5 mL of 2% Lignocaine hydrochloride was performed around the vulva region. Then, curved incision was done at the posterior part of the vulva using scalpel blade size 24.

After vulval incision, gentle traction was applied again to evacuate the dead fetus along with the placenta (Figure 1d). Intrauterine flush was performed using 200 mL of 0.9% NaCl solution, followed by 10 mL of Oxytetracycline dosed at 20 mg/kg bwt (Figure 1e). Finally, Vitamin K3 was instilled onto the incision site to promote coagulation before the incision site was sutured using 3-0 silk with simple interrupted suture pattern (Figure 1f). Mixture of negasunt powder and iodine paste was applied at the suture site as antiseptic and fly repellent (Figure 1g). For post-operative medication, Flunixin meglumine (dosed at 2.2 mg/kg bwt) was given intramuscularly twice a day for 3 days as anti-inflammatory, and Norodine (dosed at 1 mL/16-kg bwt) was given intramuscularly once a day for 5 days as broad spectrum antibiotic.

Progression: The case was followed up for 2 weeks after treatment, and the ewe was found to respond well to the treatments. The ewe was bright and alert. The suture site was clean and intact, and suture removal was performed.

DISCUSSION

Dystocia or difficult birth is one of the major contributory factors in economic losses from perinatal death of dam and fetus (Brounts et al., 2004). The ability of the veterinary personnel to distinguish lambing and kidding difficulties is considered as an important step in treating dystocia (Ali, 2011). Generally, dystocia may result due to maternal or fetal effects (Noakes, 2009). The incidences of dystocia in the ewe flocks have been described to be 3% (Jackson, 1995). Ringwomb, or incomplete cervical dilatation, is one of the major causes of dystocia in some sheep and goats flocks. It accounted for an incidence of 20 to 30% of all dystocia cases (Jackson, 2005; Noakes, 2009). Dystocia due to fetal postural defect, as in this case, is one of the common cause of dystocia. Amen et al. (2010) reported 8.3% prevalence of dystocia due to fetal malposition, 5.3% due to narrow pelvic canal, and 3.0% as a result of fetal monstrosities. In another study, Ali (2011) reported the prevalence of 37.1% ringwomb, 21.7%

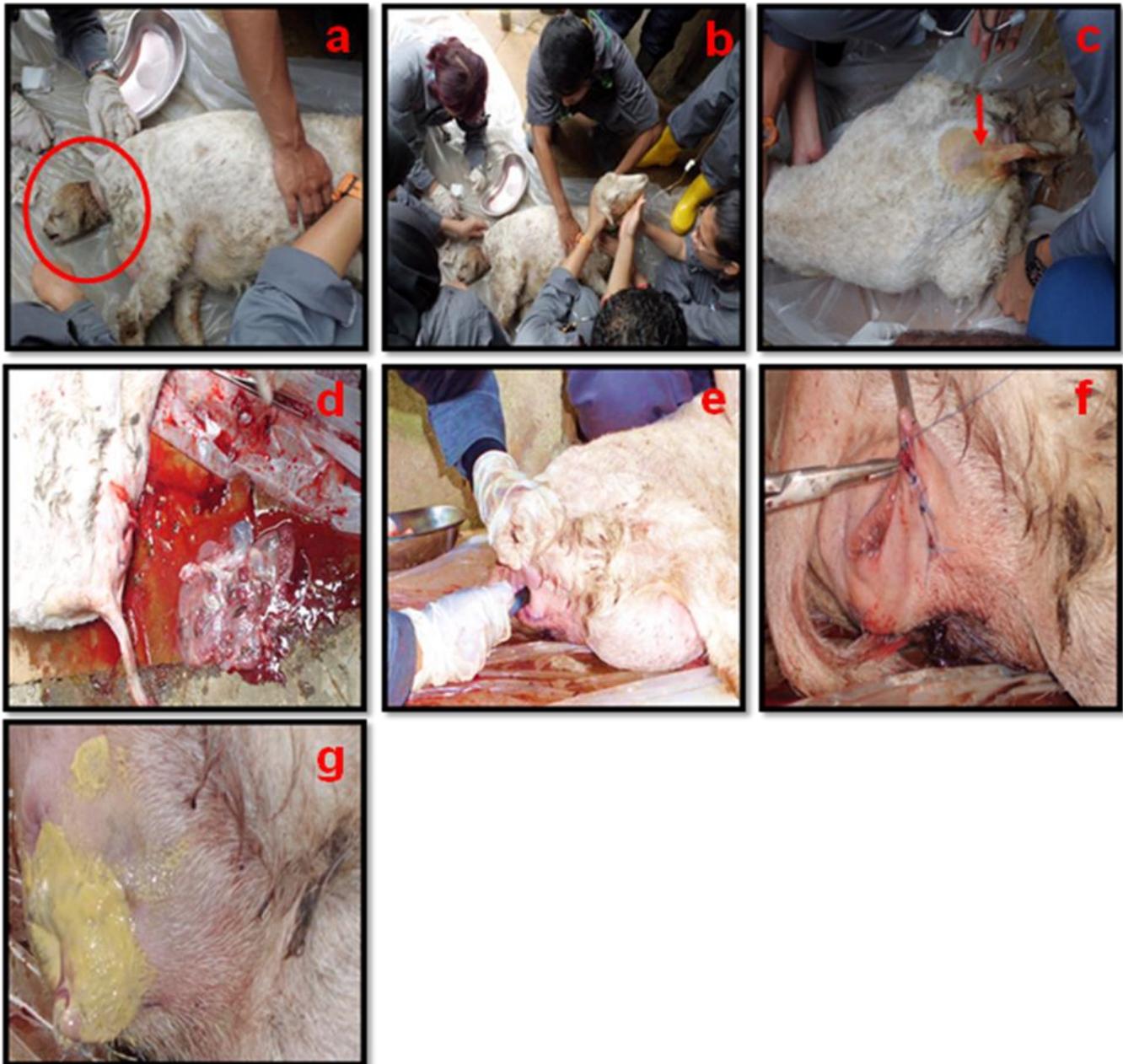


Figure 1: Management of fetal dystocia in a ewe. (a) Dead fetus head protruding out from the dam's vulva; (b) Intravenous fluid therapy to the dam; (c) Caudal epidural site preparation; (d) Removal of dead fetus and placenta; (e) Intrauterine flushing using NaCL and Oxytetracycline; (f) Suturing episiotomy incision using simple interrupted suture; (g) Applying negasunt powder and iodine paste mixture in the suture site.

narrow pelvis, 21.1% fetal maldisposition and 15% fetal oversize with other less important cases such as uterine torsion (4.4%), monsters (4.4%), and simultaneous presentation of twins (1.7%). In this clinical case, the fetal abnormal posture characterized by bilateral carpal flexion was the cause of dystocia where both of the forelimbs were flexed at the knee joint region. This is the most common and easily corrected dystocia (Majeed et al., 1993). There are a few obstetrical procedures that can be done to remove the fetus

(Majeed and Taha, 1995); these procedures include (1) mutation to correct abnormal presentation, position and posture of fetus by manipulation, (2) traction where application of outside force used to assist dam to expel fetus, (3) fetotomy to reduce the size of dead fetus within the uterus, and (4) cesarean section by delivering fetus through laparohysterotomy. Procedure (1) and (2) were used in this case to remove the dead fetus. Procedure (3) was not used to prevent further injury to the uterus. Procedure (4) was also not applied

here because the fetus was already engaged within the pelvic canal. However, it was obvious that procedure (1) could not be readily achieved hence procedure (2) with episiotomy were employed. The treatment approach in this case was manipulative delivery with manual repulsion and traction method following episiotomy was in consonant with the recommendation of Noakes (2009) and Youngquist et al. (2007) that if it is obvious that the vulva is relatively small and that further traction on the fetus will cause rupture of the vulva and perineum (with subsequent infertility), diameter of the vulval opening may be increased by episiotomy. In this case, the dam was saved but the fetus was death due to delay in presenting the case to the clinic where delay in treatment of dystocia and prolonged dystocia in ewe may cause necrotic metritis and is usually fatal (Mee, 2008; Christos et al., 2012). In short, this case report described the successful management of dystocia in a ewe using minor surgery combined with medical approach.

CONCLUSION

In conclusion, by determining the factors rapidly, the occurrence of dystocia can be prevented or treated quickly to save the lives of the dam and the fetus as well as to prevent economic losses. In this case, the prognosis of the ewe was good but poor for further breeding, because the incidence of dystocia may occur again. It is therefore recommended that more elaborate epidemiological studies can be done to ascertain the immediate and remote causes of dystocia with a view to elucidate the risk factors involved.

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