Surgical Management of a Second Degree Perineal Laceration in a Buffalo Sequel to Dystocia

1,3*Faez Firdaus Jesse Abdullah, 1,5Lawan Adamu, 1Nur Hazirah Binti Hashim
1Abdinasir Yusuf Osman, 1,3Abdul Wahid Haron, 1Nurhusein Yimer, 4Dayang Norhaizam Awang and 4Noorashimah Roslim

1Department of Veterinary Clinical Studies, Faculty of Veterinary Medicine, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia, 2Research Centre for Ruminant Disease, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor, Malaysia, 4University Veterinary Hospital, Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia, 5Department of Veterinary Medicine, Faculty of Veterinary Medicine, University of Maiduguri, PMB1069, Borno State, Nigeria

*Corresponding Author: drlawan3758@yahoo.com

Rec. Date: Jul 18, 2013 03:03, Accepted Date: Nov 23, 2013 21:42

Abstract

A 3-year-old female Murrah-Ravi Buffalo weighing approximately 300kg suffered a second degree perineal laceration following forced extraction due to dystocia caused by malpresented fetus on 13th October, 2012. Physical examinations modification as a detailed clinical examination that included both physical examination and an obstetrical examination revealed extensive, necrotic and foul smelling vulva with tear which extends from the ventral aspect of the anus to dorsum of the vulva and vagina. In rural or urban conditions fetal traction attempted by farm workers or the owners themselves without veterinary supervision and guidance always lead to complication. Flunixin meglumine (Banamine®) was administered before the wound cleaning and uterine lavage. Epidural anaesthesia was performed before debridement of necrotic tissues and surgical repair of the perineal laceration. The buffalo responded well to the treatments, however handling of dystocia cases under the supervision of veterinary surgeon is imperative even in farms which are aimed at the welfare of inflicted animals in order to avoid serious mishaps’ and future breeding of the buffalo is not advisable.

Keywords: Dystocia, Perineal Laceration, Surgical Management, Vulva Injury

Introduction

Perineal lacerations in domestic animals typically occur following parturition and involve the structures within the perineum. The perineum is defined as the region between the tail and the ischiatic arch; especially the region between the anus and genital organs, which is bounded ventrally by the pelvic symphysis, laterally by the ischial tuberosities, and dorsally by the coccygeal vertebrae (Blood et al 2007). Perineal laceration is the term for lacerations that occurs at the perineal area which is usually caused by the birth of offsprings. It is categorized into 3 degrees of severities, namely the first, second and third degrees.
Perineal lacerations occur recurrently in mares due to foaling strain. The timing of the operation and the severity of the lesion are some of the significant deliberations for surgical management predominantly lacerations relating to the rectum. Healing can typically be accomplished in perineal lesions that are surgically corrected on timely postpartum (Aanes, 1988; Trotter, 1992; Hospes and Bleul, 2007). In mares with third degree perineal laceration treatment should be effected within 3 weeks surgical correction should be executed when granulation tissue on the wound surface is replaced by the epithelium (Hospes and Bleul, 2007).

First degree perineal lacerations usually involve only the mucosa of the vulva and vagina and they are often unnoticed without close examination after parturition. Meanwhile, second degree perineal lacerations extend into the submucosa and muscularis layer of the vulva and vagina, the anal sphincter and the perineal body which compromise the ability of the muscles to constrict the vestibule and also causes the perineum to sink cranioventrally which can predispose the animal to pneumovagina and urine pooling (Mohamad et al 2013). Lastly, third degree perineal lacerations will include the rectovaginal septum, the muscles of the vagina and rectum, and the perineal body. They usually create a common rectal and vestibular vault, permitting direct faecal contamination that result in bacterial infection of the vagina, cervix, and uterus (Blood et al 2007; Brinsko et al 2011; Mohamad et al 2013).

Dystocia is defined as the delayed or difficult calving which sometimes requires significant human assistance, and it is one of the problems that could lead to the occurrence of perineal lacerations. In buffaloes, the incidence of dystocia is low at about 1-2% compared to cattles due to their anatomical differences whereby buffaloes have a more capacious pelvis, larger area of ileum, a free and easily separable fifth sacral vertebra, easily dilatable small sized vaginal canal, and elongated and wide apart vulvar lips (Purohit et al., 2012). Fetal malpresentation is one of the causes of dystocia whereby the fetus is not in the normal presentation, position and posture which is in an anterior longitudinal presentation, with dorso-sacral position and extended head and extremities (Purohit et al 2012).

**Patient Signalment and History**

Lucky was a 3-year-old female of Murrah-Ravi breed Buffalo weighing 300kg. Lucky was a primiparous, the pregnancy was by natural service. The body score at the time of calving was 3. The buffalo was managed semi-intensively. On 13th October 2012, Lucky was found to be having
difficulty in giving birth and thus the owner decided to assist her parturition. Through vaginal palpation, the owner discovered that the fetus was in an improper posture with the head deviated to the left. The owner then proceeded to retract the calf thereby inflicted the laceration prior to the presentation to the Veterinary teaching hospital. Lucky was presented on 15th October 2012, which was two days later.

**Physical Examinations**

Upon physical examination, Lucky was found on sternal recumbency and she was dull and depressed. Her vital parameters were within normal range. Apart from that, her mucous membrane was pink with capillary refill time (CRT) of 2 seconds and her body condition score was 3/5. The PCV of the buffalo was normal (0.35) and this value of the PCV suggested for the surgery. Examination of the perineal region revealed extensive, necrotic and foul smelling vulva with tear which extends from ventral aspect of anus to the dorsum of the vulva and vagina (Figure 1). Moreover, mucopurulent nasal discharge was also observed.

![Figure 1: Perineal laceration of the buffalo](image)

**Final Diagnosis**

Based on the physical examinations, Lucky was diagnosed with second degree perineal laceration.

**Treatments**

At the outset, 6.6ml of Flunixin meglumin (Banamine®) at the dose rate of 2.2mg/kg was administered intramuscularly. Then, the lacerated wound was washed with diluted hibiscrub followed by povidone iodine mixed with diluted hibiscrub. After that, the uterus was
lavaged with 2 litres of 0.9% sodium chloride using extension wire that was inserted into the uterus through the cervix (Figure 2). Once the lavaged fluids stopped flowing out, the uterus was flushed with 40ml of Oxytetracyline.

Next, epidural anaesthesia was performed using 5ml of 2% lidocaine. The dosage of lidocaine used for epidural anaesthesia is 1-1.25ml/100kg (Brinsko et al 2011). After that, debridement of necrotic tissues was done to promote the healing process. Once the necrotic tissues were debrided, the mucosa of the right side of vagina was sutured using 1 Safil simple continuous suture pattern followed by vulvar skin suture using 1 Ethilon simple interrupted suture pattern (Figure 3). The buffalo was kept for 3 days at the teaching hospital premises post-operative. Then, 30ml of Oxytetracyline (Terramycin®) at 20mg/kg was administered intramuscularly for 5 days and Flunixin meglumin (Banamine®) 6.6ml at the dose rate of 2.2mg/kg was administered intramuscularly for 3 days. Lastly, povidone iodine and woundsarex was applied at the suture site to prevent infection and maggot wounds. After the treatments, the owner brought the calf to the dam for suckling (Figure 4). The suture was removed after 14 days (Figure 5).

**Figure 2:** Uterus lavage using 0.9% NaCl  
**Figure 3:** Vulvar skin suture
Progression
Lucky responded well to the progression of the treatment. However, the owner was advised to cull the dam once the calf is weaned as there is a high chance of recurrence of perineal laceration.

Discussion
There are many causes of perineal lacerations which are commonly associated with calving process. One of them is the occurrence of dystocia due to fetal abnormalities which include malpresentation of the fetus, oversized fetus and also male-calf deliveries. Male calf is usually heavier than female calf and often causes more dystocia and damage to the birth canal (Farhoodi et al 2000). Dystocia also lead to the next cause of perineal laceration, which is obstetric trauma that usually occurs through forced extraction or careless use of obstetrical instruments such as fetotomy knife or embryotomy wire by the personnel assisting the parturition (Cuneo et al 1993; Farhoodi et al 2000). These findings are in accord to the case of the present study where the owner of the buffalo used force extraction due to malpresentation of the fetus which ultimately resulted on inflicting perineal laceration.

The timing of the operation and the severity of the lesion are some of the significant deliberations for surgical management predominantly lacerations relating to the rectum. The management consisted of immediate treatment and delayed surgical repair (Woodie, 2006). Preoperative and postoperative management regarding faecal evenness is deemed essential in perineal surgery in mares. The faeces must remain squashy for at least 2 weeks following repair.
to curtail the pressure required for defecation and thus to lessen the tension on the suture line (Schonfelder and Sobiraj, 2004; Hospes and Bleul, 2007). Enormous number of obvious successful feeding and laxative schedules has been reported (Colbern et al., 1985; Vaughan, 1986). These vary from dietary procedures that resulted in squashy but not fluid faeces to inclusive fasting of the mare for 5 days preoperatively to 4 days postoperatively (Kersjes et al., 1986; Aanes, 1988; Hospes and Bleul, 2007; Kazemi et al 2010). In the present, the buffalo was observed to defecate normally and with ease and therefore, no laxative was administered. The ease in defecation in the present study could be due to the frequency of water intake by the buffalo.

First-calf heifers also tend to have perineal lacerations as they have higher risk of dystocia. Apart from that they also tend to have violent expulsive effort to their nervousness during the parturition (Farhoodi et al 2000). Other causes of perineal laceration includes trauma during breeding which is most probably due to the aggressiveness of the bull. Other than that, perineal or perivaginal abscesses and congenital abnormalities such as stenosis of the vagina could occlude the genital passage and thus interfere with the calving process (Farhoodi et al., 2000; Purohit et al 2011). In this case, the buffalo was primiparous and suffered the perineal laceration due to forced extraction that was applied due to dystocia caused by fetus malpresentation.

A first degree laceration typically does not require any surgical intervention as the mucosa can heal very fast. However, caslick procedure may be opted if the skin of the dorsal aspect of the vestibule is involved (Ghamsari et al 2008). In a second degree perineal laceration, large blood vessels that are located at the dorsolateral vessels or region of the vaginal birth canal may be affected (Larson 2012). Thus, the haemorrhage should be controlled by either ligating the blood vessels or clamping using hemostat for 24 hours. Then, vestibuloplasty can be done to reconstruct the perineal body before proceeding to caslick procedure on the vulva in order to prevent the occurrence of pneumovagina (Brinsko et al 2011). This treatment should be applied in this case, in which the buffalo had suffered second degree perineal laceration. However, in the present case report the author’s applied Safil simple continuous suture pattern followed by vulvar skin suture using 1 Ethilon simple interrupted suture pattern was performed.

The treatments of third degree perineal lacerations are divided into 2 parts, which are
immediate treatment and delayed surgical repair. The initial immediate treatments usually include the administration of broad spectrum antibiotics and supportive treatments such as non-steroidal anti-inflammatory drugs, anti-tetanus and proper wound cleaning. Delayed surgical repair is done 4 – 6 weeks later to allow healing of the injured tissues so that the wound can reduce in size by contraction and also to allow any swelling to resolve. There are 2 methods for surgical repair of third degree perineal lacerations, which are Goetz one-stage technique and Aanes two-stage technique (Ghamsari et al 2008; Brisko et al 2011). However, in the present case report Safil simple continuous suture pattern followed by vulvar skin suture using 1 Ethilon simple interrupted suture pattern was performed.

Prevention of perineal lacerations is closely related to the successful management of dystocia cases. For dystocia cases that are caused by fetal malpresentation, manual manipulation which is done by the combination of mutation and traction can be applied once the fetus is confirmed to be alive. If the fetus is dead, fetotomy should be done. Dam with oversized fetus should undergo caesarean section as the pelvic canal is usually too narrow for the fetus to pass through. Fetotomy should also be opted if dead fetus is detected. Dystocia due to dam abnormalities such as stenosis of the vagina or perivaginal abscesses should be managed by caesarean section or episiotomy, which is the surgical incision into the perineum and vagina to allow delivery of the fetus without tearing the vulva (Purohit et al 2011; Purohit et al 2012). Other than that, pre-calving management could also be done by preventing the development of overweight dam which can be controlled by efficient pre-calving diet. Other than that, development of oversized fetus can be prevented by proper bull selection that has a proportionate size to the dam (Farhoodi et al 2000).

The question that leads to the last point of the discussion is whether the dam is suitable to be bred after the surgical treatment. It was reported that post-surgical treatment of perineal laceration usually leads to the formation of scar tissue that causes the inelasticity of the vaginal mucosa and submucosa. Other than that, it also causes fragile vaginal canal and impair the muscles of the vestibule and vulva (Farhoodi et al 2000). These will predispose the dam to the recurrence of perineal lacerations in the subsequent calving. Moreover, dams that suffered third degree perineal lacerations have increased risk of endometritis that can lead to reduced fertility. Apart from that, they also have higher incidence of perineal trauma recurrence. In a similar study conducted on mares it was found that the repair of a third-degree perineal laceration
using a Goetz technique apparently offered substantial promise for fertility in mares and also, dehiscence of the surgical wounds did not occur after the surgery (Kazemi et al 2010).

**Conclusion**

Dystocia is one of the most common causes of perineal lacerations, and thus proper assisting in parturition is important in order to prevent the occurrence of perineal lacerations. Handling of dystocia cases under the supervision of veterinary surgeon is imperative even in farms which are aimed at the welfare of inflicted animals in order to avoid serious mishaps’. Other than that, treatments of perineal lacerations depend on the severity and extensiveness of the laceration. Lastly, breeding after surgical treatment of perineal lacerations is usually not advisable.

**Acknowledgement**

The authors wish to acknowledge En Nazim Razali Kanini, En Mohd Jefri, University Veterinary Hospital (UVH) and faculty of Veterinary Medicine, Universiti Putra Malaysia for their technical assistance.

**References**

Veterinary Research, Shiraz University, (11) 2: 184-188.