

CASE REPORT

Successful management of downer cow in Limuru, Kenya

Mwaura Sarah Muthoni* and Kiarie Ng'ang'a

Farm and Community Technologies Ltd, P.O.Box 967-00217, Limuru, Kenya; Kilimo Agrovet, P.O. Box 1493-00217 Limuru, Kenya.

* Corresponding author email: sarah@elewa.org

Case details Species: Bovine, Breed: Fresian, Sex: Female, Age: Heifer, Name of Cow: Cool Marty Gacui

HISTORY

A two year old Fresian heifer was presented with signs of parturition on June 6 2009. The heifer was agitated, and moved continuously around the pen due to labour pains. Two calf hooves were protruding out of the vulva of the cow accompanied by mucus discharge. The heifer was observed to be straining in efforts to push out the calf. The attending veterinarian diagnosed this as a case of dystocia because the calf was too big and was stuck in the dam's (heifer) pelvis. After much traction, the calf was delivered dead. The dead calf was a large Fresian bull. After delivery, the dam remained down and unable to stand up in spite of repeated attempts to rise up. During the following two weeks the dam was treated as a downer cow. This paper documents the case management process.

PHYSICAL EXAMINATION

The limbs of the dam were checked for sensitivity to pain by pricking with a hypodermic needle. The fore limbs showed sensitivity (withdrawal reflex) from the shoulders down to the hooves. The hind limbs showed sensitivity only on the femoral region.

There was no sensitivity from the hock joint to the hooves. Obturator paralysis was suspected and manual rising of the dam was considered as the best means of treatment. The dam also had retained placenta, which was to be removed once the dam was raised up.

CASE MANAGEMENT

The dam was given calcium intravenously to rule out parturient paresis. This treatment however did not cause the dam to respond by rising up. The dam however was alert and bright. It fed well on the forage, concentrates and water provided. The dam was on sternal recumbency (dog sitting position) and hence hiding the udder. Wood sawdust was spread

around the cow to make dry and soft bedding. The dam was then pushed to lie on the lateral position, its fore limbs folded and the hind limbs stretched out on the side. In this position, the udder was exposed and observed to be swollen and edematous. It was washed with salty warm water and the colostrum milked out (Figure 1). The cow was left to rest overnight.



Figure 1: Udder of cow exposed for removal of colostrum. The udder was swollen and edematous.

On day 2 the dam was still down and had gone back to sternal recumbency. However, it was bright, alert and fed well on the feed and water provided. The lower hind limbs still showed no sensitivity (withdrawal reflex) from the needle prick test. A decision was made to manually raise the cow. Two large cotton bed sheets were folded to form a 1 foot wide strip. Sisal ropes were tied on each end of the bed sheet to make slings.

The slings were pushed under the recumbent cow. One sling was passed under the sternum right behind the fore limbs and the other sheet was passed right in front of the udder. The ropes were then tightened to posts on the sides of the pen. The four ropes were tightened on either side of the cow and the bed sheets lifted the cow up. The cow was simultaneously lifted upwards on the hips by 4 men and 2 bags of sawdust placed right behind the udder to support the hip area. The cow also had to be pushed forward to encourage it to lift

its own body weight. The ropes were tied securely to the posts and the bed sheets supported the dam in the standing position (Figure 2).

While trying to raise the cow, it was noted that the fetlock joints were weak and kept knuckling. Gauze bandages were used to tie the fetlock joints in extended position and the dam then could now support its weight on the hind limbs (Figure 3).

Massage of the abductor muscles, down to the hock joints and fetlock joints was done to increase blood flow and reduce numbness. The udder was then cleaned and milked. Watery fluid was milked out initially because of the edema aggravated by the recumbency. The retained placenta was then manually removed and intrauterine pessaries placed. The cow was left in the standing position supported by the improvised straps for 6 hours after which it was untied and let to rest on the sawdust bedding on the sternolateral position.



Figure 2: Cow standing supported with slings at two positions. One sling passed under the sternum right behind the fore limbs (left) and the other rear sling passed in front of the udder (right).



Figure 3: Gauze bandage used to tie the fetlock joints (arrow).

The dam was lifted up and supported on the straps each morning for the next 10 days. On the 11th day the bed sheet supports were loosened but not removed completely so as to find out if the dam could support its own weight while standing. For the next two days the cow could stand for only two to three hours with no support but once fatigued it would try to lie down, so the bed sheets would have to be completely loosened. The sensitivity to the hock joint and fetlock joint was recovered and now the cow could firmly step on the ground.

On the 14th to 16th day the dam was lifted up with the bed sheets and once it was standing on its own, the sheets would be removed and the dam left to stand for half a day. On the 17th day, the dam was supported to stand in the morning as usual with bed sheets, which were later removed. The dam later laid down to rest at 4pm and at around 8pm the dam stood up on its own with no support, to feed and drink water. On the 18th day in the morning the dam stood up again on its own with no support ready to go to the milk parlor for milking (fig. 4).



Figure 4: Cow standing up without support after about two weeks of treatment.

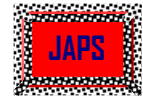
CLINICAL OBSERVATIONS/FINDINGS

When the cow was down, it preferred the sternal recumbency position with its hind legs extended parallel to the body. When on this position the cow hyperventilated and grunted due to discomfort. It had to be moved to lie on the sternum, with the posterior part of the body lying lateral and with both hind limbs on one side and partially under the body.

This position however caused numbness on the hind limbs. Due to the frequent dragging and pushing of the cow to encourage it to stand, the skin on the knee (carpal) joints were bruised and the joints were swollen. The skin on the lateral sides of the hock joints was also bruised and developed superficial wounds (figure 5).



Figure 5: Bruises on the joints on the fore and hind limbs due to dragging on the floor. The bruises are sprayed with oxytetracycline spray.



On day 4 the cow had a red-brown foul smelling watery vulva discharge. The attending veterinarian wore a protective plastic sleeve and scooped out all the fluid from the uterus and put intrauterine pessaries. The uterus was by now undergoing involution. No tears or injuries were found in the uterus. The cow however had one tear on the vulva which was washed with salty water daily until it healed.

DISCUSSION

The case was a downer cow because it had remained on sternal recumbency for more than 24 hours after initial recumbency, and after treatment for primary medical problems (Merck's Vet. Manual, 2005). The cow was diagnosed with obturator paralysis which was causing the inability to stand, knuckling of fetlock joints and the 'dog sitting' position that the cow preferred. Obturator paralysis commonly follows pressure on the obturator nerve during parturition causing inability to adduct the thighs and the cow does the splits. When recumbent the legs are splayed with one on either side of the body (Sack *et al.*, 2002). Because the adductors are innervated by the obturator nerve, an animal adopts a base-wide stance or, in recumbency, a sitting position with both hind limbs extended forward. There is considerable risk that the adductor muscles will be damaged and that permanent recumbency will result.

In addition to the base-wide stance, knuckling of the fetlock may be observed. This indicates injury of the ischiatic nerve. Both conditions may contribute to the downer cow syndrome (Merks vet manual, 2005). The cow

From day 10, whenever the cow lay down, a whitish mucoid discharge would come from the vulva but this later cleared up. On day 14 during milking, milk clots were noticed from the two hind teats. The veterinarian treated the cow with intramammary antibiotic infusions (Multiject®) for three days and injected penstrep® (penicillin and streptomycin antibiotic) intramuscularly for the three days. The mastitis cleared by the 4th day.

should be massaged daily on the adductor muscles to stimulate blood flow and the nerves in the area (Oglivie, 1998). In our case, this helped to return nerve sensitivity to the whole hind limb gradually and the cow was finally able to stand on its own.

The cow had mastitis and metritis which usually affect downer cows. The mastitis was observed by the edema and heat in the affected udder quarter, with the milk typically appearing as watery and serum-like. The cow was affected by metritis that is presented by downers which is usually toxic, with enlargement of the uterus and with malodorous, red-brown discharge (Van Metre & Callan, 2008).

CONCLUSION

A downer cow can be successfully treated if the correct diagnosis of the cause of the recumbency is noted early. A lot of special handling, care and patience are required to help the recumbent cow. Massaging of the limbs, turning of the cow and lifting the cow onto its feet will help the cow to recover faster.

REFERENCES

- Christopher Day, 2007. The Downer Cow, ALTERNATIVE VETERINARY MEDICINE CENTRE - Veterinary Surgeon www.alternativevet.org
- David C. Van Metre and Dr. Robert J. Callan 2008. DOWNER COWS – DIAGNOSIS AND ASSESSMENT www.downercow.com/.../downercowsvet/indicators%20and%20treatment.pdf
- Obturator Paralysis. The Merck Veterinary Manual Ninth Edition 2005, USA <http://www.merckvetmanual.com/mvm/index.jsp?cfile=htm/bc/91100.htm>
- Problematic Bovine Recumbency: Introduction. (Downer cow) The Merck Veterinary Manual Ninth Edition 2005, USA <http://www.merckvetmanual.com/mvm/index.jsp?cfile=htm/bc/91100.htm>
- Obturator paralysis. By permission from Sack W, Wensing CJG, Dyce KM, Textbook of Veterinary Anatomy, Saunders, 2002
- Ogilvie Timothy H. – 1998. Large animal internal medicine. National Veterinary Medical Series Edition Number: 11, Wiley, John & Sons.
- What is a Downer Cow? NADIS 2002 - 2007 NADIS (National Animal Disease Information Service) <http://www.thecattlesite.com/diseaseinfo/246/the-downer-cow>