

# Dystocia: Surgical Management in Cow

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## Abstract

The cow's inability to remove the fetus from the vagina is called dystocia. Maternal causes include malformed fetal-maternal ratio due to maternal pelvic stenosis and incomplete cervical dilatation. Animal immaturity is one of these reasons. This communication is designed to document the surgical treatment of dystocia and its effects on a term-pregnant three-year-old cow. Vaginal delivery was attempted but failed due to the narrow mother's pelvis. Surgical management relies on sterilization to prevent post-operative complications. 30 ml of 2% lidocaine hydrochloride was entered from the left side using the reverse L-block technique. When the cow is in the correct decubitus position. When the fetus is born, it still empties in the uterus, but the tissues return to the uterus together with the umbilical cord. For ten days, sutures were made using surgical techniques and postoperative care, and the heifer regained its health.

**Keywords:** dystocia, cow, surgical management

## 1. Introduction

Etiology of dystocia includes maternal or fetal defects and management or a combination thereof. In order to develop a treatment plan for an animal, it is easy to identify the cause of maternal or fetal difficult delivery (Youngquist, R.S. & W.R. Threlfall, 2007). As the fetus grows and the uterus expands, the pelvis's ability to respond to the additional needs of the fetus will be exceeded. These or other ambiguous stimuli elicit fetal stress responses (Jackson, P. G. G., 2004).

In cattle, the fetal hypothalamic-pituitary-adrenal system increases the production of glucocorticoids such as cortisol and steroid precursors of estrogen. In addition, estrogen and prostaglandins encourage mothers to secrete oxytocin, sensitizing the uterus to its actions and causing the cervix to dilate. Uterine muscles increase contraction due to stretching in the last period of pregnancy and as the cervix expands, it starts to contract continuously. As the cervix dilates, the fetus is partially forced into the birth canal. These create pressure points in the vagina that further stimulate the release of oxytocin and initiate labor. The process seems to have a gradual and irreversible effect (Regmi, B & Gautam, G., 2020).

Any delay or impairment of body functions due to maternal or fetal causes may cause dystocia. Dystocia is slow or difficult calving, sometimes requiring human assistance. It is a major problem in the dairy industry because it increases cow and cow mortality, reduces milk production, slows uterine involution and reduces fertility, ultimately leading to a huge economic loss. Its occurrence in cattle has been widely studied for its impact on production (Lombard, J. E., Garry, F. B., Tomlinson, S. M. & Garber, L.P., 2007). Predisposition factors for dystocia include birth, parity, calf sex, calf birth weight, pelvic size, long gestation, food, calving year and season. While non-genetic factors causing dystocia are age, parental parity and calf gender, genetics, environment and perinatal management are other factors that affect dystocia to varying degrees (Purohit, G. N. & Mehta, J. S., 2006). Dystocia is very important in the agricultural industry because it is an important factor in the death of cattle at or near calving. Among the many factors affecting the survival of cattle, the most important is the difficult birth.

Dystocia causes cattle and calf deaths, loss of calf and calf production, and delayed growth. Bovine dystocia is associated with a higher incidence of intestinal infections, uterine infections (endometritis, metritis, pyometra, and uterine rupture), and peripartum hypocalcemia in cows (Roberts, S. J., 2004). Therefore, the purpose of this document is to provide information on dystocia in heifers and its surgical treatment.

## **2. Case History and Physical Examination**

On March 06, 2021, a three-year-old local breed heifer from Hadiya Zone Licha kebele, was presented to Shone veterinary clinic with a history of vaginal delivery tried but failed due to the narrow maternal pelvis. The owner complained that his heifer, with a full-term pregnancy, had been unable to deliver then I and my local friends tried unsuccessfully.

On physical examination, the cow was weak, and recumbent, with a swollen vulva. The pulse rate was 90 beats per minute, while the temperature was 39 degrees Celsius, the respiratory rate was 20 beats per minute, and the mucous membranes were pale. The vulva and external genitalia were washed with water and soap solution, then cleaned with savlon to reduce swollen vulva.

## **3. Surgical Management**

After immobilizing the cow's leg by tying to the right supine position, the surgical site is aseptically prepared in the left ventral region. Then, using, 40 ml of 2% lidocaine hydrochloride was injected inverted L-block approach subcutaneously to generate a wall of analgesia encircling the operative area. A surgical blade was used to make a 45 cm-long vertical incision on the skin. The dissection continued gently through subcutaneous tissues all abdominal muscle layers, and the peritoneum to reach the uterus. After the incision of the uterus, the dead fetus was disconnected from the intact umbilical cord and taken from the womb (Figures 1 and 2).

The fetal membrane with the intact umbilical cord was left behind in the uterus. The uterus was dusted with procaine penicillin G powder 400,000 IU, and sutured in two layers using absorbable catgut size 2 in Lambert pattern. The peritoneum was sutured with absorbable catgut sutures in a basic continuous suture pattern (2-0). An interlocking pattern with chromic catgut size (3-0) was used to seal the abdominal wall (Assault suture, Switzerland). Finally, using nylon size 2-0 the skin was closed using a simple interrupted suture procedure. Penstrip at dose of 1 ml/20 kgs (16 ml/ 320 kgs body weight, IM for five days consecutively, oxytetracycline aerosol wound spray 3.6%, was sprayed on the surgical wound of operated heifer daily until healing completely. Multi-vitamin injection were used for post-operative management. The fetal membrane was expelled through the birth canal without any traction. The skin sutures were removed after 21 days of operation, and the wound had healed and was quite active. The heifer recovered completely without any post-operative difficulties. The owner was advised to closely monitor the cow and give good nutrition and bedding, clean of cow pen, and make it comfortable to facilitate wound healing.



Figure 1. Dead fetus disconnecting from the womb



Figure 2. Fetus (dead)

#### 4. Discussion

After aseptically preparing the animal, the ointment is placed in an inverted L-shaped block to create an analgesic wall around the surgical site. For this reason, this problem is treated surgically when the cow is in the right side lying position. This case study relates to a report by (3,5) describing that the lumbar paratomy approach is more appropriate for cows who cannot stand upright during the cesarean section. After subcutaneous

administration of analgesics, a surgical incision was made in the left oblique paralumbar fossa. After the fetus is removed, the membrane does not relax, so it goes back to the uterus. Cover the uterus with procaine penicillin G and Lambert model of 2 absorbable catguts. Close the abdominal wall using a size 3-0 chromic suture, followed by subcutaneous suturing of the chromic suture and oxytetracycline wound spray. Finally, the skin is permanently sealed. As explained (Fesseha H, Negash G & Gebrekidan B, 2020), early healing and successful surgery require regular management and monitoring of the wound to support the healing process. Hence the post-operative treatment. As a result, the animal recovered on the 21<sup>st</sup> day of surgery. Here, the main purpose of the cesarean section is to save the heifer as the fetus has died. Outcome The case in this report is a 3-year-old cow who was pregnant at the time of dystocia. As a result of anamnesis and genital examination, it was determined that the case had dystocia due to narrowing of the birth canal due to parental insufficiency. After a failed vaginal delivery, a cesarean section is performed using a similar technique as aseptic technique and post-operative care. Therefore, the cow fully recovered. Owners are advised not to breed or seed small or narrow pelvises. Local tests should not be ignored and it is best to go to a veterinarian as soon as possible.

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