

## Abstract

Dystocia is a common disorder in high yielding breeds. A 3 year Bengal goat doe of 3<sup>rd</sup> lactation was admitted to Upazila Livestock Office and Veterinary Hospital, Chokoria with a history of dystocia since last 8 hours and broken pelvic girdle at 3 month of pregnancy, was subjected to Caesarean section. The surgery was performed under distal paravertebral anesthesia at Thoracic13, Lumbar1 and Lumbar2 using 2% Lidocaine hydrochloride in laying position after proper restraining and sedation. The instruments were sterilized by boiling of water. The operated site was prepared for aseptic surgical procedure. An oblique incision was given in middle of the left flank region. Single live fetus was surgically and successfully removed with proper care to avoid proliferation of uterine contents into the peritoneal cavity. Penicillin and Streptomycin combined powder was dusted into the surroundings area of the uterus. The doe was treated with antibiotics (Ceftriaxone@10mg/kg, IM), antihistaminic (Pheniramin maleate@ 1.5mg/kg IM), painkiller (Ketoprofen@ 3.3mg/kg, IM), fluid (0.9% Sodium chloride, IV) and minerals (Ca, Mg, P, IV) during the first week post-surgery. Local antiseptic dressing was performed using povidone-iodine solution daily for one week and skin sutures were removed at 12th day post-operation. Finally it was the first successful caesarean section in Chokoria upazila so far and is covered by both national and local print media. My strong appeal is to improve the surgical facilities at the veterinary hospital.

Key word: First Caesarean section, broken pelvic girdle, aseptic.

## **Chapter: 1**

### **Introduction**

A caesarean section is a surgical procedure in which an incision is given through the abdominal wall into the abdomen and uterus in order to deliver kids. Dystocia is a common obstetrical problem in all farm animals. If not corrected dystocia leads to death of the fetus and sometimes to dam (Roberts, 1971; Arthur et al., 1982). It occurs in the domestic goat in approximately 3—5% of births and most cases are handled, at least initially, are by the breeder (Smith, 1980).

In Bangladesh, small ruminants (sheep and goats) are reared for meat, manure, skins, and wool. Small ruminants play a vital role in the rural economy, especially in areas where crop and dairy farming are not economical (Devendra, 2001). In small ruminants, dystocia contribute a significant economic loss in terms of loss of perinatal death of dams and fetus, uterine infections, more retained placentas, and longer lambing and kidding intervals (Rook *et al.* 1990, Ghosh *et al.* 1992, Brounts *et al.* 2004, Scott 2005). Dystocia may be of fetal or maternal origin (Noakes *et al.* 2009). Fetal causes of dystocia include mainly over size, mal-position, and monsters (Majeed and Taha 1989, Noakes *et al.* 2009). Maternal causes of dystocia include mainly incomplete cervical dilatation (ring womb), narrow pelvis, and uterine inertia (Majeed and Taha 1989b, Thomas 1992, Noakes *et al.* 2009). Incidence of ring womb is significantly high in sheep and goat flock (Jackson 1995, Noakes *et al.* 2009). Caesarean section i.e delivery of fetus by laparo-hysterotomy is indicated in small ruminants, to manage dystocia when the vaginal delivery of fetus is not possible (Scott 1989, Noakes *et al.* 2009). The present communication reports the causes of dystocia and outcome of dams subjected to caesarean section and to describe a surgical approach to deliver kids through left flank oblique laparotomy for relieving dystocia in small ruminants.

A number of surgical approaches are available for the caprine caesarean section recumbent left paralumbar laparotomy, recumbent right paralumbar laparotomy, recumbent ventral midline laparotomy, recumbent ventral paramedian laparotomy, ventro-lateral laparotomy and the recumbent left oblique laparotomy (Schultz et al.,

2008). Each of this approach varies greatly with its own advantages and disadvantages. Selection of an approach mainly depends on the training, experience and confidence of the veterinarian but other factors such as the type of dystocia, the doe's condition, the environmental conditions and the availability of assistance contribute in determining the appropriate surgical approach to perform (Campbell and Fubini, 1990). The veterinarian often has far less control over the patient status, availability of assistance and environmental contaminants. For this reason, it is worthwhile to select a suitable site for operation in a laying doe, and most often the left Para lumbar fossa approach is favored by most veterinarians (Vermunt, 2008).

This technique is less practiced in field condition in Bangladesh and reports on this procedure are limited. The objective of this study was to investigate Caesarean section in the Black Bengal doe performed under clinical conditions and attempt to describe a caesarean section in a doe with recumbent position using distal Para vertebral anesthesia.

## **Chapter 2: Case Description**

A one and half years old Bengal Goat (Doe) weighing 17 kg was brought to Upazilla Veterinary Hospital & Livestock Office, Chokoria with a history of broken pelvic girdle at 3 month of gestation & difficulty in parturition since 8 hours before(Figure1.1). Clinical examination of the animal includes temperature, respiration and pulse rate are normal. The behavior appetite of the animal was satisfactory. Per vaginal examination revealed opened of the cervix but due to congested pelvis it's difficult to deliver the fetus normally. Then it was decided to perform a cesarean section to deliver kids using left oblique laparotomy.

### **2.1. Restraining and anesthesia**

Both physical and chemical methods were used to control the doe. The animal was restrained using a halter, tied such that the animal's right flank is on the operation table and the head was bended in order to limit movement during surgery. After restraining, the animal was prepared for an aseptic surgery. The area of the intended incision was clipped, shaved and soaked with povidone iodine. After shaving local anesthesia using 1.8ml of 2% lidocaine hydrochloride (Inj. Jasocaine®2%) solution was administered in every spinal nerves site (T-13, L-1, and L-2) and in total 5.4ml Jasocaine® solution was used.

### **2.2. Surgical technique**

A left oblique laparotomy approach was used for cesarean section at laying position. A draper was placed over the area of the site of surgery and an about 8 inches long oblique incision along the skin of the lower flank was made and separated from the subcutaneous layer. The incision was given 2 to 3 cm ventral and cranial to the tuber coxae, extended cranio ventral at 45 degree angle to the ground. The external abdominal oblique muscle was incised in the same direction as the skin. The internal abdominal oblique muscle and transverses abdominus muscles were guided parallel to the incision using a combination of sharp and blunt dissection and ligating all the bleeding vessels and cutting by taking care to avoid major blood vessels. Following

separation of the muscles by blunt dissection the peritoneum was incised and then guiding a cut by a finger placed underneath the peritoneum. After identifying the uterus, the portion of the uterus containing a head was pulled up into the abdominal incision by grasping the kid's head. Then incision was given along the greater curvature of the uterus avoiding major blood vessels.

The huge amount of amniotic fluid was come out and one live kid was pulled out (Figure 1.3). Then the placenta was removed manually. Before closing the abdominal cavity, the inner surface of uterus and peritoneal cavity were given a good flush with normal saline to reduce contamination. The uterus was closed with a synthetic absorbable monofilament using an atraumatic needle starting well above the incision through "Czerny-Lambert suture" technique. The incised uterus, peritoneum and muscle layers were closed with using Catgut No.2 (Figure 1.4). The incised peritoneum, abdominal muscles and Individual abdominal muscle layers were closed by simple continuous suture (Figure 1.5.). Cross mattress sutures were used for the skin (Figure 1.6). Povidone iodine solution with a thin layer of cotton was applied over the sutured line. The animal was then monitored (Figure 1.7, 1.8). for a period of 10 days to observe any complication until complete healing.

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**Figure 1.1. Per-vaginal examination.**



**Figure 1.2. Preparation for surgery.**



**Figure 1.3. Live kid**



**Figure 1.4. Suturing of Uterus.**



Figure 1.5. Suturing of abdominal muscles.



Figure 1.6. Suturing of skin.



Figure 1.7. After 3 days of surgery



Figure 1.8. After 8 days of surgery



Source: The daily prothom alo



Source: Suprovat

### **2.3. Post-operative care of Dam**

After surgery, antibiotics, antihistaminic, painkiller, dextrose and calcium were given to early recovery of the dam. Combined antibiotics streptomycin and penicillin (SP Vet®-0.5gm) 1 vial was injected intramuscularly, antihistaminic such as pheneramin maleate 35.5mg (Histavet 1.5ml) administered intramuscularly daily for 7 days, whereas ketoprofen 10% (Kopvet® 0.6 ml) was administered intramuscularly daily for 3 days to check secondary bacterial infection, minimize inflammation and pain. Dextrose (Inj. DNS 5%-100ml) and calcium, magnesium, phosphorus (Inj. Cal D Mag-20ml) intravenously for 2 days to minimize the occurrence of metabolic diseases. Temperature, respiration, heart rate and other related physical examinations were checked regularly and no complications were noticed and the animal had an uneventful recovery. On the day 10<sup>th</sup> the suture was removed and it was noticed that the wound had healed complete.



### **Chapter3:**

#### **Discussion**

In the present case, a left oblique laparotomy approach was used for caesarean section in a recumbent doe to deliver one live fetus using distal paravertebral anesthesia. The procedure holds distinct advantages for surgeons with either smaller stretch or less physical strength. The manipulation and exteriorization of the gravid uterine horn is readily permitted, and the apposition of the transverses abdominis and internal abdominal oblique muscles are facilitated by use of this approach (Newman and Anderson, 2005).

Distal paravertebral anesthesia was used during the surgery. Distal paravertebral was found more suitable than proximal paravertebral block as it requires less skill. Although proximal paravertebral block is more challenging, this technique induces maximum relaxation of flank musculature (Newman,2008). Sometimes sedation is required and xylazine hydrochloride is commonly used in this purpose (Newman,2008).

The mummified and mummified fetus were found after the caesarean section. It is important to remember that caesarean section is a major abdominal operation and complications are common both during and after the operation. Common complications included metritis, adhesions, peritonitis, hemorrhage, wound *dehiscence etc*. *Patient and surgeon preparation, surgical technique*, kid's viability at the time of surgery and exteriorizing the uterus can affect outcome. No complications were occurred in the present case and the doe was fully cured up to 10 days observation.

A good preoperative preparation is required before surgery and should include hematologic and blood chemistry values, but laboratory investigation of the blood parameters and proper aseptic measure were not followed due to less facilities in field condition during the present surgery which is a limitation of this study.

## **Chapter: 4**

### **Conclusion**

Caesarean section through left flank oblique laparotomy is an effective method of resolving dystocia in small ruminants even if performed in delayed cases of dystocia in the field.

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