

# Emergency Cesarean Sections in a Goat Due to Feto-Pelvic Disproportion: A Clinical Case Report

Dr. Manjeet Kumar

Veterinary Officer, Department of Animal Husbandry, Himachal Pradesh, India

Email: [dr.manjeet.13\[at\]gmail.com](mailto:dr.manjeet.13[at]gmail.com)

**Abstract:** *Dystocia is a common reproductive disorder in small ruminants with significant welfare and economic implications. This report describes the successful management of dystocia in a primiparous goat caused by foeto-pelvic disproportion. A one-year-old goat presented with anorexia, restlessness, and prolonged straining. Clinical examination revealed elevated heart and respiratory rates with normal body temperature. Vaginal examination indicated full cervical dilation but inability to deliver the fetus due to a narrow maternal pelvis. A cesarean section was performed under regional anesthesia via the lower left flank approach. The fetus was successfully removed, and the uterus and abdominal layers were sutured using standard techniques. Postoperative care included antibiotics, analgesics, and antiseptic wound management. The animal recovered uneventfully. This case highlights the importance of timely surgical intervention in dystocia cases where vaginal delivery is not feasible, thereby improving survival outcomes.*

**Keywords:** Dystocia, Feto-pelvic disproportion, Cesarean section, small ruminants, and obstetrical management

## 1. Introduction

Dystocia (difficult birth) is relatively common in small ruminants (Phythian *et al.*, 2019) and has significant economic and welfare implications (Weldeyohanes and Fesseha, 2020). Dystocia frequently develops when some physical obstacle or functional defect hampers the birth process (Mota-Rojas *et al.*, 2020). Dystocia can be caused by important factors, often categorized by maternal factors, fetal factors, or both (Abera, 2017). Generally, it is possible to relieve a dystocia without surgical intervention if the cervix is fully dilated and the mother's pelvis is of sufficient size to allow manipulation of the fetus (Cowley *et al.*, 2023). The main indication for caesarean section in small ruminants has been identified as incomplete cervical dilatation (Brounts *et al.*, 2004). Other common indications include vaginal prolapse (Brounts *et al.*, 2004), abnormal maternal pelvis shape as affected by prior trauma (foetopelvic disproportion), foetal emphysema (Majeed *et al.*, 1993), metabolic bone disease, dysfunctional uterine action, cervical or vaginal stricture, and macrosomal anomalies such as gestational diabetes, hydrocephalus, and fetal hydrops (Weldeyohanes and Fesseha, 2020). In sheep, insufficient cervical dilation is reported as the main cause of dystocia (Voigt *et al.*, 2021) while in goats feto-pelvic disproportions reportedly account for majority of dystocia cases (Brounts *et al.*, 2004). Cesarean section in small ruminants is performed when animal is observed in active labor for more than an hour without signs of progression toward delivery of a fetus (Cowley *et al.*, 2023). This clinical case report aims to document and discuss surgical intervention in feto-pelvic disproportion.

### History and Clinical Presentation:

A goat of around 1 year of age in 1<sup>st</sup> parity and full term gestation was presented with anorexia, restlessness and prolonged straining due to dystocia. On clinical examination, animal was found depressed and exhausted due to prolonged recurrent straining. Clinical parameters like heart and respiration rates were elevated but body temperature was normal. On per-vaginal examination, cervix

was fully dilated but due to narrow pelvis, manual obstetrical removal of the fetus was not possible. The fetus was swollen and the dorsal portion of fetal neck was felt by fingers. The feto-maternal disproportion is commonly caused by a large fetus and fetal abnormalities, or abnormal presentation, position, or posture (Pearson *et al.*, 2014). Dystocia in primiparous animals due to the narrow pelvis may be because of breeding the animals at young age and/or poor state of nutritional management during gestation (Ahmed *et al.*, 2019). In goats, feto-pelvic disproportions reported as major cause of dystocia (Brounts *et al.*, 2004).

Sr. No.	Clinical Parameters	Observed Value
1	Rectal Temperature	102 °F
2	Respiration Rate	62/Min
3	Heart Rate	105/Min

### Surgical procedure and treatment given:

Animal was properly restrained in right lateral recumbency. Antimicrobial and anti-inflammatory drugs were injected intramuscularly (Ceftriaxone-Tazobactam @ 20 mg/kg and Meloxicam @ 0.5 mg/kg, respectively) along with adequate intravenous fluid therapy (Inj. Normal Saline) to correct any dehydration. Lower left flank region was clipped, aseptically prepared and draped for cesarean section. Regional anesthesia was given by infiltration 3mL of 2% lignocaine hydrochloride solution for desensitization of the surgical region. An approximate 10-12 cm skin incision was made at the lower left flank region followed by blunt dissection and separation of the abdominal muscles. After incising the peritoneum, the gravid uterus was separated and packed with sterile surgical drapes for preventing intra-abdominal sepsis. An incision was given on the uterus for extraction of the fetus and placenta. The incised uterus was repaired by applying double layer of continuous inversion suture pattern, with synthetic absorbable suture Chromic catgut no. 1-0. Lavaging of the inner surface of uterus was done with normal saline. The peritoneum and the individual muscular layers were sutured by applying continuous simple interrupted sutures with Chromic catgut no. 1-0 suture. Apposition of the skin incision was achieved with

application of interrupted sutures with synthetic non-absorbable suture material (Silk 1-0). Animal was injected intramuscular antibiotics and analgesics (Ceftriaxone-Tazobactam @ 20 mg/kg and Meloxicam @ 0.5 mg/kg for 5 days) along with antiseptic dressing of the suture site with povidone iodine solution for 7 days. In the present case, the goat was recovered uneventfully following successful caesarean section.

## 2. Discussion

Dystocia is life-threatening for both the mother and fetuses which needs immediate intervention. Proper diagnosis of causes of dystocia is very important to adopt desirable

obstetrical operations. Many researchers have reported that caesarean section becomes necessary in goat to relieve dystocia due to relatively oversized fetus and narrow pelvis of the mother when manual obstetrical operations are difficult for vaginal delivery (Zaid, 2010; Ahmed *et al.*, 2019). The prevention strategies for fetopelvic disproportion (fetal oversize relative to the pelvic canal) dystocia in sheep and goats focus on genetic selection, optimized nutritional management, and careful breeding practices to prevent oversized fetuses, particularly for primiparous (first-time kidding) does. Other strategies include the implementation of training and education programs for livestock owners on proper breeding techniques and improvement in nutritional practices.



Figure 1: Picture depicting surgical site preparation and incision on the skin



Figure 2: Picture depicting the gravid uterus and removal of fetus



Figure 3: Picture depicting suturing of uterus

## 3. Conclusion

Dystocia is a significant cause of economic loss and welfare compromise in small ruminants. In cases of foeto-pelvic disproportion where vaginal delivery is not feasible, cesarean section provides an effective and life-saving intervention. Early decision-making and avoidance of forceful manipulation are critical to improving maternal and fetal outcomes. This case demonstrates that timely surgical management can result in successful recovery without adverse effects on future reproductive performance.

## References

- [1] Abera, D. (2017). Management of dystocia cases in the cattle: A review. *Journal of Reproduction and Infertility* 8, 1-9.
- [2] Ahmed, N., Baishya, M.P., Das, J.M., Das, A., Boro, P.K., Yadav, S.N. and Sarma, B.K., (2019). Surgical management of dystocia in an Assam Hill goat: a case report. *Haryana Vet.* (April, 2019) 58 (S.I.), 114-115.
- [3] Brounts, S.H., Hawkins, J.F., Baird, A.N. and Glickman, L.T., (2004). Outcome and subsequent fertility of sheep and goats undergoing cesarean

- section because of dystocia: 110 cases (1981–2001). *Journal of the American Veterinary Medical Association*, 224(2), pp.275-281.
- [4] Cowley, J., Stockler, J. and Maxwell, H., (2023). A review of small ruminant cesarean section: case selection, surgical techniques, care of the neonates, and postoperative care of the dam. *Clinical Theriogenology*, 15, pp.70-81.
- [5] Majeed, A.F., Taha, M.B. and Azawi, O.I., (1993). Cesarean section in Iraqi Awassi ewes: A case study. *Theriogenology*, 40(2), pp.435-439.
- [6] Mota-Rojas, D., Martínez-Burnes, J., Napolitano, F., Domínguez-Muñoz, M., Guerrero-Legarreta, I., Mora-Medina, P., Ramírez-Necoechea, R., Lezama-García, K. and González-Lozano, M., (2020). Dystocia: factors affecting parturition in domestic animals. *CABI Reviews*, (2020), pp.1-16.
- [7] Pearson, L. K., Rodriguez, J. S., & Tibary, A. (2014). Postpartum Disorders. *Llama and Alpaca Care-E-Book: Medicine, Surgery, Reproduction, Nutrition, and Herd Health*, 297.
- [8] Phythian, C.J., Angell, J.W., Crilly, J.P. and Martin, A.D., (2019). Ewe Caesarean section: reviewing the evidence base and sharing cross-country experiences part one. *Livestock*, 24(2), pp.90-101.
- [9] Voigt, K., Najm, N.A., Zablotzki, Y., Rieger, A., Vassiliadis, P., Steckeler, P., Schabmeyer, S., Balasopoulou, V. and Zerbe, H., (2021). Factors associated with ewe and lamb survival, and subsequent reproductive performance of sheep undergoing emergency caesarean section. *Reproduction in Domestic Animals*, 56(1), pp.120-129.
- [10] Weldeyohanes, G. and Fesseha, H., (2020). Dystocia in domestic animals and its management. *International Journal of Pharmacy & Biomedical Research*, 7(3), pp.1-11.
- [11] Zaid, S.H.N., (2010). Dystocia in goats, causes and treatment. *Al-Qadisiyah Journal of Veterinary Medicine Sciences*, 9(1).