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Case Report

A CASE OF DYSTOCIA FROM DOWNWARD DEVIATION OF FETAL HEAD IN A 3-YEAR-OLD SAHELIAN DOE

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ABSTRACT

A case of dystocia due to downward deviation of foetal head in a three-year old Sahelian doe was presented. The primary compliant was that the patient had been straining for over 10 hours, with difficulty in giving birth. History further revealed that the client observed vulva discharge prior to presentation. Clinical examination revealed that the vital parameters were within normal range. Obstetrical examination revealed a dilated cervix and two viable foetuses, with a downward deviation of the head of the caudal foetus. Management approach was through retropulsion and manual traction. Retropulsion was employed to correct the fetal malposture. Thereafter, manual traction was adopted to pull the foetuses from the birth canal. In conclusion, the success of this procedure underscores the need for quick presentation of cases and adequate evaluation of management approach in cases of dystocia.

Keywords: Dystocia, Downward deviation of fetal head, Retropulsion, Manual traction

INTRODUCTION

Blood *et al.* (2011) defined dystocia as the condition in which an animal fails to expel the foetus at the time of parturition leading to human intervention. Devi *et al.* (2021) explained that it is the failure of transition from stage I labour to stage II or when little to no progress is made for 30 minutes or more after the start of stage II. Stage I labor is defined as the preparation for fetal expulsion which includes restlessness, decreased appetite, isolation from the herd, preparing a birthing area, and leading up to the early uterine contractions; stage II labor is defined as fetal expulsion, which includes uterine contractions up to the completion of delivery of the neonate; stage III labor is defined as uterine contractions causing expulsion of the placenta and remaining fetal fluids (Brounts *et al.*, 2004).

Although the incidence is comparably low in small, than in large ruminants (Sharma *et al.*, 2014; Bhattacharyya *et al.*, 2015), it still contributes to economic loss in the industry.

It is indicated when there is a compromise in the viability of the foetus, patency of birth canal or normal contractility of the abdominopelvic and uterine muscles necessary for parturition (Noakes *et al.*, 2009; Sharma *et al.*, 2014; Ukwueze *et al.*, 2017).

Other causes include foetopelvic disproportion (foetal oversize), foetal malposture/malposition or foetal malformation/monster (Hussain & Zaid, 2010; Ali, 2011; Devi *et al.*, 2021). Foetal malposture is a major cause of dystocia in small ruminants (Hussain & Zaid, 2010; Ali, 2011; Malik *et al.*, 2019). It presents as head deviation, forelimb flexion, breech presentation or "dog sitting" position (Hussain & Zaid, 2010).

Furthermore, foetal and maternal complications and losses increase with delay in intervention. Intervention ranges from non-surgical to surgical procedures. Non-surgical procedures include chemotherapy (drug and hormonal therapies), manipulation (repulsion, mutation and traction) and foetotomy.

The choice could depend on the cause of the dystocia. Dystocia due to ring womb or due to poor-/non- dilatation of

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the cervix have been corrected by the use of drugs and hormones such as prostaglandin F2α, valethamate bromide, cloprostenol sodium, calcium gluconate and/or estradiol benzoate (Ali, 2011; Bhattacharyya *et al*., 2015); conversely, dystocia due to lateral deviation of the head and neck were treated successfully by mutation and forced extraction (Hussain & Zaid, 2010), while that in goats due to bilateral shoulder flexion associated with absolute fetal oversize was treated using partial fetotomy by removing the forelimbs from the shoulder region (Hussain & Zaid, 2010).

This paper reports a case of dystocia in a 3-year-old Sahelian doe, due to a downward deviation of the foetal head, which was successfully managed by foetal manipulation only.

It underscored the success of a non-surgical intervention of dystocia in small ruminants, which has the advantage of reduced risk and cost of management.

SIGNALMENT AND HISTORY

The attention of clinicians on call at the Veterinary Teaching Hospital, University of Nigeria Nsukka was drawn to a farm in which a 3-year-old dark-coloured Sahelian doe (caprine), weighing 30.0 Kg was presented with a primary complaint of straining for over 10 hours, with difficulty in giving birth. History further revealed that the client observed vulva discharge prior to presentation.

The doe was managed on semi-intensive system

DIAGNOSTIC PLAN

A complete physical examination was carried out on the patient. Blood sample (5 mls.) was collected from the jugular vein, into a heparinized bottle for haematological investigation. Obstetrical examination of the birth canal resulted in the diagnosis of dystocia from downward deviation of fetal head.

PHYSICAL EXAMINATION

Distant examination revealed vulva discharges and abdominal distension (Figure I). Poor abdominal contraction was also observed. Further examinations revealed that the mucous membrane, the mandibular and the prescapular lymph nodes were normal. There was no tick infestation, and the doe was in the last trimester of gestation. Result of the body temperature, pulse and respiratory rates was reported on Table I. All these parameters were within the reference values.

HAEMATOLOGY

Table II was the result of the hematological parameters examined with the blood sample. The parameters were within the reference value, except for an elevation of the total white blood cell count.

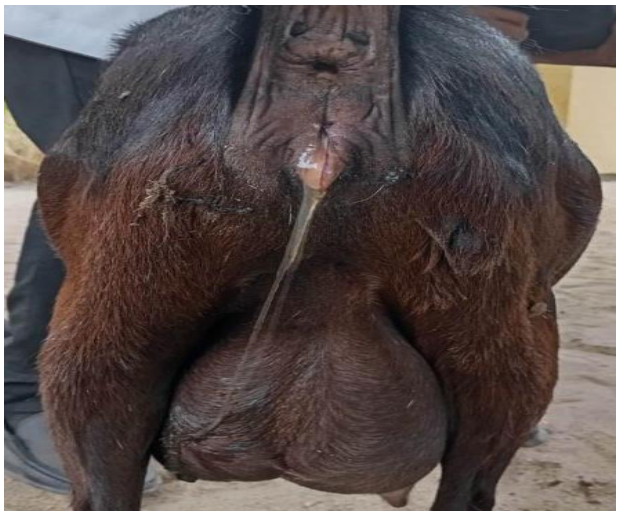

Figure I: Caudal view of the 3-year-old Sahelian doe presented with dystocia from downward deviation of foetal head, showing vulva discharges and abdominal distension

TABLE I: RESULT OF PHYSIOLOGIC PARAMETERS IN A 3-YEAR-OLD SAHELIAN DOE WITH DYSTOCIA FROM DOWNWARD DEVIATION OF FETAL HEAD

Parameter	Obtained Value	Reference Value
Temperature	40.0°C	38.0 - 40.0°C
Pulse rate	86 bpm	70 - 90 bpm
Respiratory rate	24 cycles/min	20-30 cycles/min

TABLE II: RESULT OF HEMATOLOGICAL PARAMETERS IN A 3-YEAR-OLD SAHELIAN DOE WITH DYSTOCIA FROM DOWNWARD DEVIATION OF FETAL HEAD

Parameter	Value	Reference
PCV (%)	28.95	22-38
HB (g/dL)	9.35	8-12
RBC (x106/µL)	12.54	8-18
WBC (x106/µL)	13.08	4-13
Neutrophils (%)	42.90	30-48
Monocytes (%)	3.73	0-4
Lymphocytes (%)	49.70	50-70

MANAGEMENT

Following aseptic preparation, the birth-canal was assessed per vaginum. Digital palpation of the foetus and evaluation of birth-canal using the fore and index fingers was conducted. The pelvis of the doe was confirmed to be adequate for normal parturition. The dystocia was managed by a combination of retropulsion and manual traction. The patient was sedated with xylazine at 0.1mg/kg intramuscularly, and placed on a right lateral recumbency on

a table provided on the farm. Physical restraint by two assistants supported the chemical restraint. Intra-vaginal manipulation of the birth-canal enabled retropulsion by pushing the caudal foetus from the dilated cervix back into the uterine body and horn (Figure IIA). This was applied intermittently, between episodes of straining, until the foetal head that deviated downward was freed.

Figure II: Management of the dystocia from downward deviation of fetal head in a 3-year-old Sahelian doe. A: retropulsion of caudal foetus; B: manual traction of caudal foetus; C: manual traction of cranial foetus; D: assisted expulsion of the placenta, following parturition

Manual traction was employed following the freeing of the deviated head of the caudal foetus. Manual traction was achieved by pulling the two foetuses, one after the other, starting from the caudal foetus (Figure IIB). The foetus was grabbed at the fetlock joint and gradually pulled out of the birth canal. This was repeated for the second/cranial foetus (Figure IIC). Thereafter, the placenta was manually expelled from the dam (Figure IID). Each kid was immediately dry-cleaned with a clean towel after removal of foetal membrane from the nose and mouth to ensure patency of the airway.

Figure III: The doe and kids

POSTOPERATIVE CARE

Oxytocin (10 iu/mL; I.M stat), diclofenac sodium (0.3mg/kg; I.M; x3/7), 5% oxytetracycline (1ml/10kg; I.M; x3/7) and multivitamines (1ml/10kg; I.M; x3/7) were administered to the patient, post management.

The client was advised to provide fresh water and high-quality feed, ensure the kids receive colostrum within the first few days after birth and contact the veterinarian if the doe exhibit abnormal discharge, lethargy or loss of appetite. He was also advised to always contact a veterinary surgeon whenever he notices any abnormality in his farm, and never to attempt self-medication.

DISCUSSION

In a study to report the different reproductive disorders presented at the Veterinary Teaching Hospital (VTH) of the University of Nigeria Nsukka (UNN) in the past ten years (2013 to 2023), the most frequently occurring reproductive disorder (irrespective of species) was dystocia (49.96%) while the least was orchitis (1.04%) (Ibe *et al.*, 2025). However, the highest frequency of dystocia (53.85%) among documented reproductive disorders presented at the VTH of UNN was reported in caprine species (Ibe *et al*., 2025). This may be due to the higher incidence of fetal malposture in small ruminants compared to canine and porcine species (Ennen *et al*., 2013).

Dystocia occurs in small ruminants when the first or second stage of parturition is delayed, or when the first stage fails to progress to the next stage within 30 minutes (Sharma *et al*., 2014; Bhattacharyya *et al*., 2015). The first stage involves the dam secluding itself from the rest of the herd, and becomes restless; the second stage is characterized by progressive abdominal and uterine muscular contractions which culminate in foetal explosion. Foetal membrane is expelled at the third stage. In goats, it is due to either fetal causes (such as fetal malpresentation, malposture, oversize, congenital defects) or maternal causes (such as uterine inertia, multiple foetuses, over feeding of pregnant dam and narrow pelvis) (Pugh & Baird, 2012).

The present case was caused by foetal malposture (downward deviation of fetal head). This differed from the cases reported by Odedara *et al*. (2017), Ukwueze *et al.* (2017) and Mekoria *et al*. (2002) caused by non-dilation of cervix and narrow pelvis, resulting to caesarean sections. This case also differed from another case of dystocia due to foetal monster as reported by Ate *et al*. (2011).

Monitoring and close observation of small ruminants during parturition is very important. It allows for early assistance if needed, so as to save the life of both the dam and the neonate. Retropulsion and manual traction is often the initial approach in the management of dystocia due to foetal

malposture. Retropulsion involves moving the foetus cranial, back into the uterus, to correct the malposture.

To prevent excessive straining, the repelling force was applied intermittently, between episodes of straining. Traction is the application of pulling-force to the presenting parts of the foetus during delivery to enhance or replace maternal forces. It can be performed manually or with the use of obstetric devices like obstetric chains or hooks. Various tools, such as a limb snare or rope, are attached above the fetlock joint to provide traction and assist in delivery. However, in the present case, traction was successfully performed manually. Similar manual traction was adopted by Lakavath (2021) in sheep.

Some predisposing factors to dystocia in small ruminants include twining, season of pregnancy and sex and size of foetus. In the prevalence study of dystocia involving 70 small ruminants by Bhattacharyya *et al*. (2015), the highest prevalence was observed in primiparous dams and in dams pregnant with big sized male foetuses. In another study, Sharma *et al*. (2014) observed that the highest prevalence was in primiparous ruminants. In the present study, the dam was not a primiparous, but had twin pregnancy. The later may have contributed to the condition.

Although retained placenta has been reported as a common complication following manual traction or caesarean section in ewes (Leontides *et al*., 2000), it was not the case in the present study as the placenta was expelled almost immediately.

Oxytocin was administered post management to promote uterine involution (Carbonari *et al*., 2024), ensure complete removal of detritus (Lim *et al.*, 2011), control post-partum bleeding, (Magata *et al*., 2013) and promote milk letdown (Morgan *et al*., 2000).

Diclofenac sodium, a non-steroidal anti-inflammatory drug, was indicated as an analgesic (Boothe, 2001). Oxytetracycline was administered to combat any secondary bacterial infection; multivitamins were also administered to boost the dam's basal metabolic rate, apatite and reduce stress.

CONCLUSION

A 3-year-old Sahelian doe with a full-term pregnancy was presented with dystocia in the current case report. While the physical parameters were within the reference value, obstetrical examination confirmed twin pregnancy and a downward deviation of the head of the caudal foetus. Management was by repulsion and manual traction. The foetuses survived the condition, and post-operative care was administered. The client was advised to avoid self-help and always consult a veterinarian as soon as possible once any abnormality id noticed on the farm.

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