

## **Dystocia due to foetal maldisposition and relative foetal oversize in a year-old West African Dwarf doe: a case report**

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### **ABSTRACT**

This study reports the case of dystocia due to foetal maldisposition and relative foetal oversize in West African Dwarf doe. The doe was brought to the large animal Clinic of Veterinary Teaching Hospital Joseph Sarwuan Tarka University Makurdi with a primary complaint inability of the doe to deliver despite protrusion of one foetal forelimb from the vulva. On per-vaginal examination, it was observed that the cervix was fully dilated and the foetus was in anterior longitudinal presentation, dorso-sacral position with downward deviation of head and unilateral shoulder flexion. Initial attempt to deliver the foetus through manual manipulation and traction failed due to relative foetal oversize. The doe was prepared aseptically for the laparohysterotomy and doe was anesthetized by infiltrating with 2% xylocain hydrochloride. Oxytocin 10 iu, Procaine penicillin 20,000 i.u/kg and streptomycin 10 mg/kg were administered for 5 days. The skin suture was removed after 7 days. The reproductive potential of the dam was conserved through surgical intervention.

**Keywords:** Foetal maldisposition, dystocia, foetal oversize, laparohysterotomy, West African Dwarf doe

### **INTRODUCTION**

Dystocia is one of the most important obstetrical conditions and requires immediate attention by Veterinarians. Bovines are the most commonly affected species with dystocia, which develops when the birth process is hindered by some physical obstacle or functional defects (Srinivas *et al.*, 2007). Dystocia aetiology has been classified into maternal and foetal types (Sloss and Dufty, 1980). The oversized foetus can be relative oversized or absolute oversized. The oversized fetus, a cause of foetal dystocia can be delivered either with by foetotomy or by performing caesarian section depending upon the condition whether the foetus is alive or dead (Arthur, 2001). Postural abnormalities have been reported between 63 to 69 % in sheep and goat (Sharma *et al.* 1999; Purohit *et al.*, 2006). Lateral deviation of the head and flexion of carpal and shoulder joints followed by relative foetal oversize are commonly occurring foetal causes of dystocia in both sheep and goats (Purohit, 2006). Foetal maldisposition (especially lateral deviation of the head) and obstruction of the birth canal (especially failure of cervix to dilate) are common causes of dystocia in sheep and goat (Purohit, 2006). This study, therefore, aims at highlighting

the management of dystocia due to foetal maldisposition and relative foetal oversize in West African Dwarf Doe.

### **CASE REPORT**

On the 2<sup>nd</sup> of October 2019, a 1-year-old primiparous West African Dwarf goat weighing 13kg was presented to the Large Animal Clinic of Veterinary Teaching Hospital Federal Joseph Sarwuan Tarka University Makurdi with a chief complaint of inability of the doe to deliver by its own force despite noticing vaginal discharges and protrusion of one forelimb from the vulva. The doe has no medical history, herd size is 5 (2 kids, 2 does and 1 buck). Upon physical examination, it was found that all the clinical parameters (Table I) were relatively within normal range with hanging forelimb from the vulva and the doe was weak. On per-vaginal examination it was observed that the cervix was fully dilated and the foetus was in anterior longitudinal presentation, dorso-sacral position with downward deviation of head and unilateral shoulder flexion.

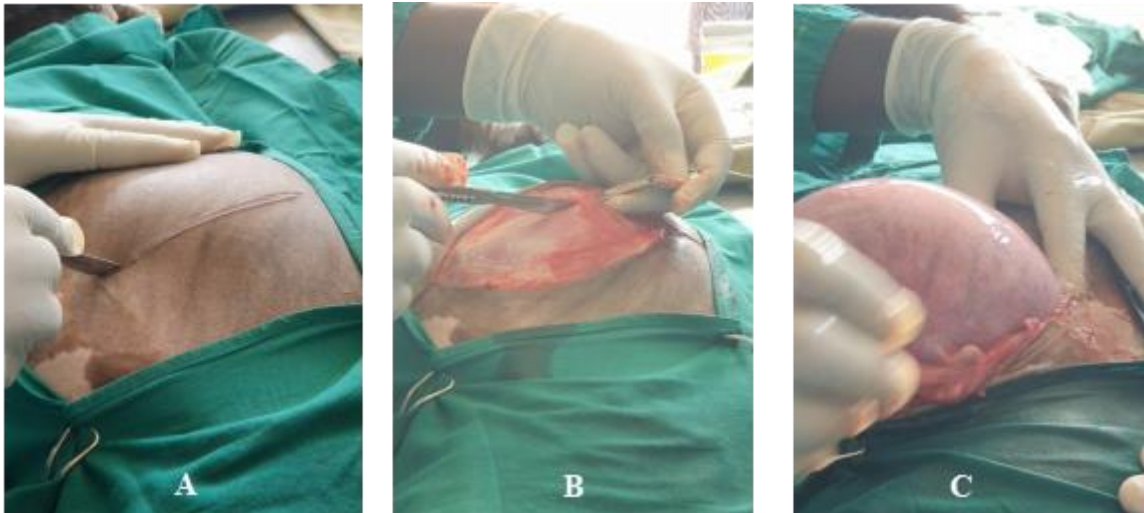
### **LAPAROHYSTEROTOMY**

Initial attempt to deliver the foetus through manual manipulation and traction failed due to relative foetal oversize and laparohysterotomy was the treatment of

**Table 1: Vital parameters of the West African Dwarf Doe**

Legends: bpm = beats per minute; cpm = counts per minute

PARAMETERS	Day 1	Day 2	Day 3	Day4	NORMAL RANGE (Ref. Bello <i>et al.</i> , 2016)
Rectal Temperature	38.2°C	38.6°C	38.7°C	37.9°C	38.0 – 41.0
Heart rate	128bpm	116bpm	114bpm	146bpm	72 – 106 bpm
Pulse rate	100 bpm	78bpm	80bpm	80bpm	70 – 102 bpm
Respiratory rate	120 cpm	24 cpm	24cpm	22cpm	15 - 30 cpm
CRT	< 2sec	< 2sec	< 2sec	< 2sec	< 2 sec



**Figure I: Showing surgical intervention, Draped surgical site and skin incision (A), Incision through the abdominal wall (B), Exteriorizing the gravid uterine horn (C)**



**Figure II: Image of the Dead fetus (A), Closure of the uterus using an inverting suture pattern Cushing (B) and Suturing of the subcutis using continuous interlocking mattress (C)**

choice. The paralumbar fossa was aseptically prepared for the laparohysterotomy, the doe was anesthetized by infiltrating with 2% xylocain hydrochloride as paravertebral anesthesia at T13, L1-3 after proper sedation with xylazine 20 (xylazine HCl 20 mgmL<sup>-1</sup>, Kepro Holland) at 0.025mgkg<sup>-1</sup> intramuscular and atropine sulphate 0.6mgmL<sup>-1</sup> (Laborate Pharmaceuticals India) at 0.05mg kg<sup>-1</sup> intramuscular as vagolytic agent. Left paralumbar flank was covered with sterile drapes and 20 cm vertical incision was made in middle of the flank. Abdominal content was pushed forward and greater curvature of gravid uterine horn was exposed towards the abdominal incision site to avoid spillage of the uterine content in the peritoneum (Figure I). The greater curvature of the uterus was gently pushed into the incision site and gravid horn was exteriorized, through which the foetus was delivered after opening the horn.

After delivery permit entry of hands into the uterus to locate fetus limbs and avoided to separate placenta from maternal caruncles of holding uterine incision in flank wound and removed loose protruding portions of placenta, and left remainder *in situ*. Evacuation of foetal and other contaminating fluids from abdominal cavity is usually unnecessary. Intrauterine pessaries penicillin G, 100,000 iu; streptomycin sulphate 50mg were used as prophylaxis, and uterus was washed with saline solution (0.9%) to prevent dehydration. The uterus wall was closed with continuous cushioning suture pattern using size 2 chromic catgut (Figure II). Parenteral antibiotic along with others medication on required base. Skin incision was closed by simple interrupted suture pattern with nylon, size 2.0. Oxytocin 10 IU, Procain penicillin 20,000 i.u/kg and streptomycin 10 mg/kg were administered i.m for 5 days. The skin suture was removed after 7 days. The vital parameters which were normal values when the animal was first presented were monitored on daily basis and still remained within the normal range on the fourth day of treatment.

## DISCUSSION

Deviation of the head may vary in degree. Lateral deviation of the head and flexion of carpal and shoulder joints are commonly occurring postural abnormalities causing dystocia in both sheep and goats (Purohit, 2006). Downward deviation of head with only one forelimb presented towards birth canal as observed in the present case is rarely reported. In delayed cases, the uterine wall tightly wraps around the foetus due to loss of foetal fluids. Great care must be exercised in correction of such cases to avoid damages to the uterine wall (Jackson, 1995). Deviation of the head may sometimes be coupled with flexion of the extremities. Manual correction of the deviation is possible in sheep and goat with sufficiently dilated birth canal and in cases presented timely with live foetuses. It may be difficult in

cases presented beyond 24 hrs of 2nd stage of labor (Mehta *et al.* 2002), which may require removal of one of the limbs by fetotomy or in some cases even caesarean section when fetus is dead and emphysematous. Carpal and shoulder flexions may be corrected manually and fetus can be delivered by traction after sufficient lubrication. Dystocia due to foetal maldispositions is usually corrected manually in sheep (25.2 %) and only a small number (1.1%) may require caesarean section (Sobiraj, 1994).

Per-vaginal delivery with the help of obstetrical manoeuvres like mutation and forced extraction is preferred to economize the treatment cost of the farmers by avoiding the caesarian operation.

The unsuccessful manual manipulation and delivery by forced extraction maybe due to relative foetal oversize. The present case of dystocia in doe due to foetal maldisposition sequel to relative foetal oversize was successfully managed using laparohysterotomy in order to save the dam and preserve its future reproductive cycle being a primipara.

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