
CORRECTION OF DYSTOCIA BY CAESAREAN SECTION IN A 1-YEAR-OLD PRIMIPAROUS WEST AFRICAN DWARF EWE: A CASE REPORT

Chike F. Oguejiofor^{1*} and Theophilus O. Nnaji²

¹Department of Veterinary Obstetrics and Reproductive Diseases and ²Department of Veterinary Surgery, Faculty of Veterinary Medicine, University of Nigeria, Nsukka, Enugu State, Nigeria.

=====

ABSTRACT

A one-year-old primiparous West African Dwarf (WAD) ewe weighing 12.5 kg was presented as an emergency to the University of Nigeria Veterinary Teaching Hospital. The primary complaint was that the ewe had been straining for more than 20 hours with an enlarged vulva. A diagnosis of pregnancy and prolonged dystocia was made based on the history and clinical findings. The foetus head presented anteriorly but with retained forelimbs indicating postural defect. The foetus was remarkably alive and displayed the suckling reflex although the narrow birth canal precluded any possibility of delivery by digital manipulation. Due to the need to save the life of the foetus, Caesarean section was carried out to deliver the foetus via a left-flank laparo-hysterotomy using inverted 'L' lignocaine local anaesthesia. The delivery of a relatively large male foetus compared to the pelvic capacity of the ewe suggested a dystocia caused, in part, by foeto-maternal disproportion. Post-surgical activities included daily clinical examinations, wound management and the administration of analgesic, antibiotics and oxytocin. The ewe recovered uneventfully and was discharged ten days post-surgery.

Keywords: Dystocia, Caesarian section, Primiparous WAD ewe, Live ram lamb.

=====

INTRODUCTION

Dystocia (difficulty in parturition) is one of the common reproductive abnormalities encountered in small ruminants. Consequences of the condition include increased neonatal/foetal morbidity and mortality, increased incidence of postpartum diseases, decreased productivity and fertility of the dam and poor financial returns in sheep and goat farming [1]. Dystocia can occur due to either maternal or foetal factors/abnormalities, and results from a delay in the first or second stages of parturition or the failure of the first stage to progress to the second stage within 30 min or more [2]. The incidence of dystocia in small ruminants is influenced by several factors including breed and management practices, and may be as high as 34-54% in different parts of the world [3,4,5]. Within the Nsukka area, the incidence of dystocia is always high around the months of July to September which coincides with the period of maximal rains and abundant pasture (unpublished observation). This report presents one of such dystocia cases.

CASE HISTORY

A one-year-old primiparous WAD ewe weighing 12.5 kg was presented as an emergency to the University of Nigeria Veterinary Teaching Hospital. The primary complaint was that the ewe had been straining since the previous day with an enlarged vulva. History revealed that the ewe had strained for over 20 h with some mucoid discharge from the vulva 12 h prior to presentation. The ewe had been recumbent and anorexic since the inception of the problem. A history of previous diet, illnesses, vaccinations and treatments were also recorded

CLINICAL EXAMINATION

On physical examination, the ewe was distressed with some mucoid discharge hanging from the enlarged vulva. The ewe was lethargic and in lateral and sometimes sternal recumbency. A body condition score of 3 (1-5 scale) with ruffled hair coat was observed. The rectal temperature was 38.4 °C (reference: 38-40 °C); pulse rate was 118 bpm (reference: 70-90 bpm) while the respiratory rate was 19 breaths/min (reference: 20-30 breaths/min). There was evidence of dehydration in the form of dry oral mucosa and loss of skin turgor, however the mucous membranes of the eyes were pink-coloured. The lung sounds were normal following auscultation and the peripheral lymph nodes were normal on palpation. There was abdominal enlargement and abdominal ballottement indicated foetal presence. Gentle digital probe into the anterior vagina revealed a presenting foetal muzzle with strong suckling reflex which indicated a live foetus with anterior-longitudinal presentation. The absence of extended forelimbs within the birth canal also indicated postural defect and retention of the forelimbs. Based on the history and clinical findings, a diagnosis of prolonged dystocia was made.

MANAGEMENT

An attempt to deliver the foetus manually was not feasible as the narrow birth canal did not allow enough space for digital/hand manipulation. Due to the need to save the life of the foetus, caesarean section (CS) was promptly recommended to deliver the foetus. The perineum and vulva were cleaned with warm soapy water and antiseptic solution (0.3% chlorhexidine gluconate; Saro Lifecare Ltd., Ibadan, Nigeria). The left paralumbar area was generously shaved and scrubbed with 0.3% chlorhexidine gluconate. Xylazine hydrochloride (Bioveta, Komenského, Czech Republic) was administered intramuscularly (IM) at the dose of 0.02 mg/kg for sedation. Anaesthesia was achieved by inverted 'L' block infiltration of 2% lignocaine hydrochloride (Hindustan Medicines Ltd., Barauni, India) in the paralumbar area. The patient was restrained on right lateral recumbency and properly draped. An infusion line of 5% dextrose and 0.9% saline (Dana Pharmaceuticals Ltd., Ibadan, Nigeria) was then set intra-operatively.

A 15 cm vertical incision was made below the transverse processes of the lumbar vertebrae at the left paralumbar area half way between the last rib and the tuber coxae. Following the flank laparotomy, the gravid uterus was gently exteriorized and packed off with gauze soaked in normal saline. The least vascularized area of the uterus was incised and the foetus removed. Detachable foetal membranes were removed while the remaining parts were carefully replaced into the uterine lumen. Blood clots were removed and the uterus was closed with a double row of Cushing sutures using size 2-0 chromic catgut. The peritoneum and the abdominal muscle layers were apposed with size 2-0 chromic catgut in a continuous lock suture pattern. Sub-cuticular sutures were also placed followed by closure of the skin incision with size 2-0 silk in a horizontal mattress pattern.

The following post-operative treatments were given: oxytocin injection (Sudent Healthcare Co., Ltd, Shanghai, China) at 30 IU stat IM; paracetamol injection (Pauco Pharmaceuticals Ltd., Awka, Nigeria) at 15 mg/kg IM x2/7, and procaine penicillin at 20,000 IU/kg with streptomycin at 10 mg/kg (North China Pharmaceutical Ltd., Shijiazhuang, China) IM x5/7. The remnants of the foetal membranes were expelled within two days post-surgery. The skin surgical wound was treated daily with gentian violet (New-Health Way Co. Ltd., Ajangbadi, Lagos, Nigeria). Physical examinations as well as physiologic parameters were

assessed daily to monitor the response of the patient to treatment. By day 2, the patient showed good signs of recovery including improved appetite, mobility and alertness. Observations recorded were rectal temperature (39.5 °C), pulse rate (110 bpm), respiratory rate (22 breaths/min) and body weight (10.5 kg). By day 3, there were increased signs of recovery and progressive healing of the surgical wound. The clinical parameters including rectal temperature (39.5 °C), pulse rate (85 bpm), respiratory rate (22 breaths/min) and body weight (10.3 kg) were all within the normal ranges. By day 4, there was an advanced wound healing and normal clinical observations: rectal temperature (39 °C), pulse rate (78 bpm), respiratory rate (22 breaths/min) and body weight (10.5 kg). By day 10, the patient had made good recovery and the surgical wound was adequately healed. All the clinical observations were within the normal: rectal temperature (39 °C), pulse rate (80 bpm), respiratory rate (25 breaths/min) while the body weight showed a slight increase (10.7 kg). The skin sutures were removed and the patient discharged uneventfully.



Figure 1. Primiparous WAD ewe following Caesarean section for the correction of dystocia

DISCUSSION

The causative factor in a case of prolonged dystocia (as reported here) is often difficult to isolate as multiple factors may act primarily or secondarily to induce or exacerbate dystocia. Factors such as failure of uterine contraction (uterine inertia), insufficient cervical dilation, foeto-pelvic disproportion or abnormal foetal presentation, have usually been associated with dystocia in primiparous ewes [2]. In this case however, the delivery of a relatively large male foetus compared to the pelvic capacity of the ewe indicated that foeto-maternal disproportion may have contributed to the dystocia. The absence of extended forelimbs within the birth canal also indicated postural defect possibly due to shoulder or limb flexion. Narrow maternal pelvis, foetal oversize and foetal mal-disposition may respectively account for up to 22%, 15% and 21% of dystocia cases in ewes [6]. Moreover, high prevalence of dystocia has been recorded in primiparous dams carrying large male foetuses [7].

The WAD ewe is a relatively small breed, therefore correction of the dystocia by manual manipulation and forced traction of the foetus was not prudent in this case due to the narrow birth canal and insufficient room for foetal manipulation and extraction. Hence caesarean section was considered the best approach to

correcting the dystocia due to the prolonged process of parturition, exhaustion of uterine and abdominal contractions, and the emergency condition of the patient. Any further delay in surgical delivery could have led to foetal or maternal death or both.



Figure 2. Live ram lamb delivered by Caesarean section following dystocia in a WAD ewe

It was remarkable that the foetus was still alive after more than 20 hours of straining. This suggested that the placental membrane may have ruptured lately in addition to the non-separation of the placentomes; otherwise the foetus would have died from lack of oxygen and nutrition. A low dose of xylazine was used for sedation in order to minimize the risk of placental drug transfer and foetal respiratory depression. Local anaesthesia of the paralumbar fossa with lignocaine was employed as this is the method of choice for CS in small ruminants. This blocks lumbosacral nerve transmission and desensitizes the flank abdominal tissues and visceral organs, while avoiding complications of general anaesthesia such as bloat, aspiration pneumonia and cardiopulmonary depression. An IV infusion of 5% Dextrose/0.9% saline was administered to provide energy and prevent shock during foetal extraction and to correct the dehydration in the patient. Oxytocin was administered to stimulate uterine contraction which expelled foetal membranes and controlled bleeding. Systemic administration of paracetamol was used to relieve pain associated with surgery and to improve animal welfare and appetite. A systemic antibiotic cover was also given to minimise the risk of post-surgical infection and complications such as metritis and peritonitis. It was recommended to the client to seek for early veterinary assistance whenever a pregnant ewe failed to deliver after 30 min or more of straining, to avoid foetal and/or maternal death or other complications. In order to avoid or reduce the incidence of dystocia due to feto-maternal disproportion, farmers are advised to prevent indiscriminate mating of premature ewes, to ensure proper feeding and adequate body weight of ewes at the time of breeding, and also to avoid breeding of small-sized ewes to relatively larger rams.

REFERENCES

1. Noakes, D. (2001). Dystocia and other disorders associated with parturition. In: *Arthur's veterinary reproduction and obstetrics*, 8th Edn. Noakes, D. E., Parkinson, T. J. and England, G. C. W. (Eds.). Saunders, Edinburgh, UK, pp 205. ISBN 13: 978 0 7020 2556 3.

2. Ismail, Z. B. (2017). Dystocia in sheep and goats: outcome and fertility following surgical and non-surgical management. *Macedonian Veterinary Review*, 40: 91 – 96. DOI: 10.1515/macvetrev-2017-0012.
3. Purohit, G. N. (2006). Dystocia in the sheep and goat- a review. *Indian Journal of Small Ruminants*, 12: 1 – 12. ISSN: 0971-9857.
4. Sultan, A., Islam, M. R., Yadav, R. K., Akhter, R. and Ahmed, J. U. (2015). Prevalence of different reproductive disorders of small ruminants in five upazillas of Mymensingh district. *Asian Journal of Medical and Biological Research*, 1: 74 – 79. DOI: 10.3329/ajmbr.v1i1.25501.
5. Ahmed, A., Balarabe, A. T., Jibril, A., Sidi S., Jimoh A. A. and Gobe R. M. (2017). Incidence and causes of dystocia in small ruminants in Sokoto metropolis, northwestern, Nigeria. *Scholars Journal of Agriculture and Veterinary Sciences*, 4: 114 – 118. DOI: 10.21276/sjavs.2017.4.3.5.
6. Ali, A. M. H. (2011). Causes and management of dystocia in small ruminants in Saudi Arabia. *Journal of Agricultural and Veterinary Sciences*, 4: 95 – 108.
7. Bhattacharyya, H. K., Fazili, M. R., Bhat, F. A. and Buchoo, B. A. (2015). Prevalence and dystocia of sheep and goats: a study of 70 cases (2004-2011). *Journal of Advanced Veterinary Research*, 5: 14 – 20. ISSN: 2090-6277/2090-6269.