



## Fetal Hydrocephalus Associated with Dystocia in a Yankasa Ewe - A Case Report

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### SUMMARY

Dystocia due to fetal hydrocephalus in a Yankasa ewe was relieved by way of cesarean section. The lamb which was delivered alive was found to have significantly enlarged head relative to body size with ankylosis of the limbs. The lamb died few minutes following delivery. Dystocia was suggested to result from the enlarged head presented at the birth canal. Cesarean section was effective in relieving the condition.

**Keywords:** Dystocia; Hydrocephalus fetus; Yankasa ewe; Cesarean section

### INTRODUCTION

Hydrocephalus refers to enlargement of the cranium due to accumulation of fluid which may be in the ventricular system or the subarachnoid space (Miller, 1993; Arthur *et al.*, 1996; Davis, 1998; Oruc, 2009). It is reported to affect all species of animals and is most commonly seen by veterinary obstetricians in pigs, calves and puppies but rarely in sheep and goats (Arthur *et al.*, 1996). The enlargement of the cranium causes difficulty in the passage of the fetus through the birth canal during delivery irrespective of normal posture, presentation or position. Dystocia in sheep can be the result of poor maternal pelvic conformation, an oversized fetus, lamb malpresentation, unskilled shepherding, partial uterine inertia in polytocous ewes, vaginal prolapse, ringwomb, uterine torsion, and ectopic pregnancy (Sargison, 2008). Other conditions reported to

the associated with dystocia in the ewe include fetal monsters (Bello *et al.*, 2008) and congenital skeletal malformations (Gyang *et al.*, 1984; Ibrahim *et al.*, 1987; Ate and Allam, 2002). Although there exists various reports of dystocia caused by congenital malformations, there is a dearth of information on dystocia caused by fetal hydrocephalus. This report is an attempt to provide information on a case of dystocia due to fetal hydrocephalus in a Yankasa ewe.

### CASE HISTORY AND THE CLINICAL EXAMINATION

A five-year old indigenous Yankasa ewe was presented to the State Veterinary Clinic, Bauchi State, Northern Nigeria with the chief complaint of intermittent straining and inability to deliver fetus for the past 2 days. On presentation, signs of intermittent straining and abdominal pain were observed with considerable distension of the abdomen. The ewe weighed 40 kg. History revealed that the ewe had lambed with normal parturition a year ago. On clinical examination, the ewe was dehydrated, lethargic and depressed with slow respiration. There was discharge from the vaginal opening and the appearance of brownish fetal membranes protruding from the vaginal opening. On palpation of the lower abdomen, and vaginal exploration, the presence of a large mass was felt against the pelvic brim. With a gloved hand inserted through the vaginal opening, cervical patency was evaluated and



established. The case was diagnosed tentatively as dystocia due to fetal oversize and thus, caesarean section was advocated immediately.



**Figure 1:** Hydrocephalus fetus (A) delivered by caesarean section with ankylosed limb (B) from a Yankasa ewe

#### SURGICAL MANAGEMENT

Based on the obstetrical examination, the condition was tentatively diagnosed as dystocia due to fetal oversize. The ewe was restrained on right lateral recumbency while the left abdominal area liberally shaved, scrubbed and cleaned with the application of mild chlorhexidine solution. The site was anesthetized by infiltration of 8 ml of 2% Lidocaine hydrochloride in an inverted L-block fashion. An oblique skin incision (12 cm) was made on the left lateral side of the ewe. This incision was followed through the muscle and peritoneum into the abdominal cavity. The uterus was exteriorized gently to prevent uterine rupture. An incision was made on the less vascularized part of the uterus with the fetus carefully removed. Removal of the fetus revealed a live fetus with an unusually enlarged cranium (A) (Figure 1). There was also

ankylosis of the limb joints at the level of the knee and fetlock joint (B) (Figure 1). The head of the fetus weighed about twice the weight of the body of the fetus. The fetus died 3 minutes after delivery. The uterus was flushed using antibiotic solution and sutured using cushion suture pattern. Intraperitoneal medication was applied with the peritoneum, muscles and skin incision closed routinely.

#### Post-operative care

The surgical site was cleaned and dressed regularly with liquid povidone iodine. Penicillin and Streptomycin suspension (Pen & Strep, Norbrook, UK) was administered at a dose of 0.5 ml/kg for 5 days intramuscularly to prevent infection along with Meloxicam and B-complex (10ml each) I/M for 4. Skin sutures were removed on the 8<sup>th</sup> post-operative day.

#### DISCUSSION

Fetal hydrocephalus has been reported to occur naturally or as an experimentally induced defect in lambs and monkeys in-utero (Edwards *et al.*, 1984). It has been reported to be induced by intracisternal administration of kaolin in sheep and fetal monkeys (Edwards *et al.*, 1984; Cambria *et al.*, 1984; Glick *et al.*, 1984). Although the condition in this case occurred naturally, the lamb died about 3 minutes soon after delivery. The contracted limbs observed in this case may not be unconnected with a neurological abnormality resulting from the hydrocephalus condition (Arthur *et al.*, 1996). It is reported that most congenital and developmental abnormalities are incompatible with life since lambs may be unable to suckle dam leading to increased lamb mortality (Mcsporrion, 1980; Gyang *et al.*, 1984; Ate and Allam, 2002; Zoe *et al.*, 2010). Many factors (maternal and fetal) have been incriminated in the cause of dystocia in animals (Osuagwuh *et al.*, 1980; Arthur *et al.*, 1996). The use of ultrasonography or x-rays would have been effective in diagnosing fetal hydrocephalus thereby allowing prompt management of the dam. This was however not employed in this case. Besides, the exact cause of the fetal



hydrocephalus in this case was not clear. However, reports have indicated alterations in genetic factors and the activity of teratogens (drug, hormone, chemical, gamma irradiation, trace element, variations of temperature, or infectious agents particularly viruses) cause fetal hydrocephalus in livestock (Oberst, 1993; Arthur *et al.*, 1996).

Trocarisation and compression of the enlarged skull has been reported to allow vaginal delivery of the fetus. However, a more recent attempt to manage hydrocephalus fetus in-utero involves the draining of the fluid within the cranium and dura of the fetus using ultrasound guided procedures or the ventriculo-amniotic shunt (Cambria *et al.*, 1984; Glick *et al.*, 1984). In conclusion, dystocia results in economic losses in livestock production and efforts to ensure that pregnant dams are adequately monitored are paramount.

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