

## Management of supernumerary limb in an Ouda lamb: A case report

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### Abstract

An Ouda lamb with supernumerary limb was presented to Veterinary Teaching Hospital, Usmanu Danfodiyo University, Sokoto, five days post lambing. The accessory limb was underdeveloped and attached to a flocculating fluid filled skin flap located around the first 3 cervical vertebrae. The congenital anomaly was diagnosed as the presence of supernumerary limb (SL), and was managed surgically. Surgical correction under sedation and local infiltration resulted in normal locomotion and better aesthetics of the lamb.

*Keywords:* Supernumerary Limb, Congenital Anomaly, Lamb.

### Introduction

Congenital abnormalities have been of interest to many researchers, environmentalists and the general public, because environmental pollution has been incriminated as one of several causes of such abnormalities (Edward and Andrew, 2003). A number of different congenital anomalies are known to occur in domestic animals (Newman *et al.*, 1999; Noh *et al.*, 2003) but there are few reports of such cases from Nigeria (Ibrahim *et al.*, 2006). Congenital abnormalities may be multiple or may affect single parts of the body leading directly to the malformation of another part (Drew and Alexander, 1985; Camon *et al.*, 1990). Supernumerary limb (SL) is a congenital anomaly which is defined as the presence of accessory limb(s) attached to the various body regions (Hiraga *et al.*, 1989; Fourie, 1990). Congenital malformations of the limbs are among the most frequent anomalies found in humans and animals, and they preferentially affect the distal part (Leipold and Dennis, 1987; Talamillo *et al.*, 2005). Information on the definitive aetiology of supernumerary limb is scarce. It is not clear

whether these congenital defects are caused by genetic or environmental factors or ageing of ova (Dennis, 1975). However it is known that the ingestion of teratogenic plants and other factors (Keeler, 1972; Jubb *et al.*, 1985), dietary deficiency of manganese and overdose of Parabendazole (Jubb and Kennedy, 1970), among others, could be causes of supernumerary limb. It is however not clear but seems to be multifactorial (Ibrahim *et al.*, 2006). The incidence of SL is reported to range from 2-3.5% of all births in calves, lambs and foals (Alam *et al.*, 2007). Here, in Sokoto, Nigeria, several congenital anomalies still pass unnoticed or are unreported. The purpose of this case report is to present the signalment, clinical signs, surgical management and prognosis of SL in a 5-day old Ouda lamb.

### Case Presentation

A 5-day old Ouda lamb was presented to the Veterinary Teaching Hospital, Usmanu Danfodiyo University, Sokoto by a farmer from the near by village of Sokoto with complaint of the presence of extra limb on the neck since lambing. The lamb was

from a flock of seven breeding ewes, four rams and three lambs comprising of Ouda, and Balami breeds. The accessory limb was underdeveloped and attached on a large fluctuating mass dorsally to the first 3 cervical vertebrae (Plate Ia, Ib and Ic). On physical examination, the lamb was normal except for the presence of the additional limb and unsteady gait. The pulse, respiration and rectal temperature were within normal ranges. The blood sample collected was subjected to full blood count (FBC) and chemistry screening (CS). These parameters were also found to be within the normal range.

Plane radiograph of lateral and cranio-caudal view of the head and cervical vertebrae reveals normal bone formation and ground glass appearance indicating fluid, which was clear on fine needle aspiration. The aspirated fluid volume measured approximately 200ml before the surgery, and was found to be synovial lubricating the joint at the part attached to the mass dorsal to the atlas. The congenital anomaly was diagnosed as the presence of supernumerary limb.

#### Case Management

The extra limb and the mass were removed by surgical excision under sedation and local infiltration using xylazine at 0.1mg/kg and 3ml of lignocaine with adrenaline. The lamb was placed on sternal recumbency and the surgical area (cervical region; occipito-atlantal joint to the axis vertebrae) was shaved and prepared aseptically for surgery. Supportive fluid therapy was maintained throughout the procedure. A semicircular skin incision was made around the base of the mass and the engorged mass ruptured and the fluid drained following subcutaneous incision to the point of articulation. The larger blood vessels were double ligated and severed while the small bleeders were crushed using artery forceps (Plate II). The limb was detached (Plate III) and the wound was closed in a routine manner (Plate IV). Postoperatively, penicillin ointment was administered topically 12 hourly for 5 days. The skin sutures were removed after ten days and physical examination of the lamb was performed after one month (Plate VI). The surgical correction resulted in a normal locomotion and better quality of life.

#### Discussion

Structural and functional congenital anomalies of the limb occur more frequently in cattle than in sheep (Hossain *et al.*, 1980; Leipold and Dennis, 1987; Singh *et al.*, 1989), and may result from either defective genetics or from a genetic insult or agent that is associated with the foetus, environment or their interaction (Alam *et al.*, 2007). There are few reports of supernumerary limb in sheep. In cattle, however, even though the condition

is rare, two extra hind limbs on the back with pelvic deformities, a single hypertrophied kidney and a dorsally attached intrapelvic urinary bladder were reported by Alam *et al.* (2007).

In conclusion, animals with supernumerary limbs without other congenital anomalies that are detrimental to life can survive successfully with normal locomotion and better aesthetics if the surgical excision is performed under proper aseptic conditions and appropriate post operative care is taken (Hossain *et al.*, 1980; Singh *et al.*, 1989; Fourie, 1990; Rahman *et al.*, 2006). The case reported here is of a successful surgical management of supernumerary limb in a 5-day old Ouda lamb.



Plate I  
Lamb with supernumerary limb



Plate II  
Lamb with supernumerary limb



Plate III  
Large mass, measuring about 90 cm longitudinally



Plate IV  
Lateral radiograph of the head and the supernumerary limb

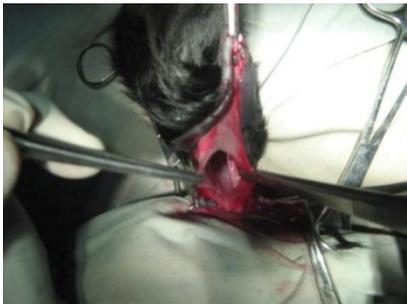


Plate V  
Intra-operative



Plate VI  
Excised supernumerary limb



Plate VII  
Immediately after surgery



Plate VIII  
8 days after surgery



Plate IX  
31 days after surgery

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