

*Case Report*

**DYSTOCIA IN CATTLE DUE TO HYDROCEPHALIC FETUS  
CONCURRENT WITH BRACHYGNATHISM AND  
ANKYLOSED LIMBS: A CASE REPORT**

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**Abstract:** Hydrocephalus is the enlargement of cranium with accumulation of fluid. It may occur either alone or associated with other defects like brachygnathism, prognathism, retinal atrophy, hydramnios or ankylosis of limb joints. Occurrence of dystocia due hydrocephalus is well reported in pig, puppies and calves. A non-descript indigenous cattle was presented at hipparagi village, jamakhandi tehsil, bagalkot district, Karnataka with history of non-progressive straining since 5-6hrs hrs. Per vaginal examination revealed rupture of water bags and fetus in anterior longitudinal presentation, dorso-sacral position with marked enlargement of cranium. The case was diagnosed as dystocia due to hydrocephalic calf. Live fetus was delivered per vaginally which died later. Grossly fetus showed dome shaped head, brachygnathism and ankylosed limb joints.

**Keywords:** Hydrocephalus; Brachygnathism; Cattle.

### **Introduction**

Hydrocephalus (Hydro: water, Cephalous: head) a dropsical condition with accumulation of fluid either in ventricular system or subarachnoid space characterized by marked enlargement of cranium (Noakes *et al.*, 2009). Dystocia due to Hydrocephalus is commonly seen in pig, puppies and cattle (Purohit *et al.*, 2006). It is rare in buffaloes (Kumaresan *et al.*, 2003) and mare (Singh *et al.*, 2013). Causative factor may be genetic, nutritional or Environmental factors (Szabo, 1989). In cattle congenital hydrocephalus is associated with simple autosomal recessive dominant gene with incomplete penetrance (Purohit *et al.*, 2012). The incidence of hydrocephalus in cattle has been reported as 0.15% (Sharma *et al.*, 2015). Calves with this condition usually die due to pressure on the vital centres of brain (Purohit *et al.*, 2012). The dome shaped enlargement of head cause wedging of fetus which prevents the normal per vaginal delivery. This report describes a case of dystocia in non-descript cow caused by

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hydrocephalic foetus associated with other deformities that was delivered per vagina by traction.

### **Case history and observation:**

A non-descript indigenous cow of 8-year age in its 3<sup>rd</sup> parity was presented at hipparagi village, jamakhandi tehsil, bagalkot district, Karnataka with history of non-progressive straining since 5-6 hrs and application of traction by owner was futile. On general inspection animal was depressed, exhausted and perineal region was swollen due to excessive traction. Per vaginal examination revealed rupture of water bags and fetus was in anterior longitudinal presentation, dorso-sacral position with presence of both extended forelimbs at vulva. On gross examination of fetus there was marked enlargement of cranium, brachygnathism (Fig.1A) with ankylosed limb joints (Fig.1B). Case was diagnosed as dystocia due to hydrocephalic fetus.



**Fig. 1(A)** Calf with hydrocephalus and Brachygnathism and **1(B)** Ankylosed Limb joints

### **Treatment and Discussion**

The perineum was washed with the potassium permanganate solution (1:10000) and animal was stabilized with intravenous fluids. Epidural anaesthesia was achieved using 5ml (inj. 2% Lignocaine hydrochloride) to check the straining. The fetus was then delivered by application of snares to both forelimbs with gentle traction and manipulating fetal head. Marked enlargement of cranium was located (Fig.1A). A live hydrocephalic female calf was delivered which died after 6 hrs and placenta was retained. Animal was administered with calcium borogluconate (450ml slow IV), analgesics (meloxicam 0.3 mg/kg for 3days), parental antimicrobials (oxytetracycline @ 5mg/kg for 3days) and fluids. Animal had an uneventful recovery within 2 days. The delivered foetus was hydrocephalic as described by (Purohit *et al*, 2012) associated with brachygnathism and ankylosed hind limbs. On puncturing the cranium watery fluid oozed out.

Hydrocephalus monster is characterized by cranial swelling due to accumulation of fluid ventricular system (internal hydrocephalus) or between duramater and brain (external hydrocephalus) of which former is most common (Roberts, 1971). The causative factors are congenital, nutritional or infectious in origin. Hydrocephalus with concurrent brachygnathism is seen in bovine viral diarrhoea (BVD) virus infected calf at mid-gestation (Noakes *et al.*, 2009). Relationship of blue tongue virus to hydrocephaly has been described well (Upasana *et al.*, 2012). Hydrocephalus may occur alone or associated with other disorders such as brachygnathism, prognathism, retinal atrophy, hydramnios or ankylosis of limb joints. Hydrocephalus associated with prognathism is earlier reported in buffalo (Pandey *et al.*, 2010). Severe form of hydrocephalus result in dystocia and that cannot be relieved by mutation and forced traction and need to incise soft portion of hydrocephalic head to reduce fetal size. In certain hydrocephalic cases where there is ankylosis of limb joints caesarean section may be performed to deliver fetus. Per vaginal delivery was achieved successfully after puncturing the fetal head with trocar and cannula (Tripathi *et al.*, 2014). In the light of above reports, present case was diagnosed as hydrocephalus and it was successfully removed per vaginal by mutation and gentle traction.

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