

# MULTIPLE CONGENITAL DEFECTS IN A NEW BORN CALF – A CASE REPORT

**V. Vijayanand, M.Gokulakrishnan and R.C.Rajasundaram**

Veterinary University Peripheral Hospital, TANUVAS  
Madhavaram Milk Colony, Chennai – 600 051.

**Key words :** Congenital defects, calf

Congenital anomalies are abnormalities of structure or function present at birth and account for a high percentage of calf mortality from just before to just after calving. Congenital defects are reported in all breeds of cattle with variation in frequency of occurrence. The etiology of these defects was either genetic ( recessive gene ) or environmental which included nutritional deficiencies, endocrine disturbances, extremes of temperature during pregnancy, radiation, drugs, chemicals, toxic plants and infectious diseases ( Roberts, 1971 ). Hydrocephalus, arthrogryposis conjoined with facial cleft ( cleft lip ) in a new born cross bred Jersey calf is reported in the present paper.

A new born cross bred Jersey male calf recumbent since birth was brought to the hospital. On examination it was found that the calf had bilateral flexion of knee / fetlock joint of fore limb and bilateral flexion of fetlock joint of hind limb ( arthrogryposis – Fig. 1 ) which made it recumbent. In addition enlarged cranium ( domed skull ), dished forehead and blindness suggesting hydrocephalus and ill-formed upper jaw - cleft upper lip ( Fig. 2 ) were evident.

Congenital hydrocephalus ( Water head ) was a inherited defect in calves caused by a simple autosomal recessive trait resulting in abnormal accumulation of cerebrospinal fluid within the cerebral ventricular system characterized by domed

skull, poorly developed teeth, depression, blindness and its survival only for a few days ( Radostits *et al.*, 2005 ).

Arthrogryposis ( rigid joints ) was a congenital defect and was often associated with cleft palate ( Leipold *et al.*, 1970 ) but in this case cleft lip was noticed. Although not much was known about the etiology, some cases were thought to be inherited and due to autosomal recessive gene with a higher incidence in farms where in-breeding was practiced ( Singh and Little, 1972 ).

Clefts of the face were developmental disorders due to failure of closure in facial processes such as the frontonasal, maxillary and mandibular processes with defects appearing in the lateral or median site of the rostral face as cleft lip, jaw, and palate ( Moritomo *et al.*, 1999 ). Cleft lip and palate were reported in Jersey and Hereford breeds ( Shupe *et al.*, 1967 ). Cleft lip was due to a disturbance of the process that form the jaw and face during embryonic development and may be unilateral or bilateral, complete or incomplete and presented signs of difficulty in suckling, dysphagia, and evidence of milk dripping from the nostrils when the newborn attempted to suckle ( Swartz *et al.*, 1982 ).

Since the calf was unable to stand and facial defects interfered with suckling, feeding at regular intervals with the help of a stomach tube to meet out the daily nutrient and calorie requirement was carried out. The calf survived only for 36 hours.

Since the above conditions were inherited, the best control is by genetic planning i.e. to avoid animals that carry these genes from breeding programmes and by purchasing bulls / semen from reputable breeders produced by parents who did not carry undesirable genes ( Ogilvie, 1998 ).

### SUMMARY

A case of hydrocephalus, arthrogryposis conjoined with facial cleft ( cleft lip ) in a new born cross bred Jersey calf is reported.

### REFERENCES

- Leipold, H.W., Cates, W.F., Radostits, O.M. and Howell, W.E. ( 1970 ). Arthrogryposis and associated defects in newborn calves. *Am. J. Vet. Res.*, **31**: 1367 – 1374.
- Moritomo, Y., Tsuda, T. and Miyamoto, H. ( 1999 ). Craniofacial Skeletal Abnormalities in Anomalous Calves with Clefts of the face. *J. Vet. Med. Sci.*, **61**: 1147 – 1152.

- Ogilvie, T.H. ( 1998 ). Large Animal Internal Medicine. Blackwell Publishers. pp 247 - 248.
- Radostits, O.M., Blood, D.C. and Gay, C.C. ( 2005 ). Veterinary Medicine. 9<sup>th</sup> edn., Bailliere Tindall, London.
- Roberts, S.J. ( 1971 ). Veterinary Obstetrics and Genital Diseases. 2<sup>nd</sup> ed. CBS Publishers and Distributors, New Delhi. p. 52.
- Shupe, J.L., James, L.F. and Binns, W. ( 1967 ). Lupine a cause of Crooked Calf Disease. *J. Am. Vet. Med. Assoc.*, **151**: 198 - 203.
- Singh, U.M. and Little, P.B. ( 1972 ). Arthrog and Cleft palate in a Charola *Canadian Vet J.*, **13**: 21 – 24.
- Swartz, H.A., Vogt, D.W. and Kintner, L.D. ( ). Chromosome evaluation of Angus with unilateral congenital cleft lip at *Am. J. Vet. Res.*, **43**: 729 – 731.

**Fig.1**

**Bilateral flexion of knee/fetlock joint of fore limbs and bilateral flexion of fetlock joint of third limb (Arthrogyrosis)**



**Fig.2**

**Domed skull, dished forehead (hydrocephalus) with illformed upper jaw - cleft upper lip**

