

MULTIPLE CONGENITAL MALFORMATIONS IN A FEMALE CALF

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SUMMARY

A case of multiple congenital malformations in a female crossbred calf is presented. Multiple defects included cleft palate, hydrocephalus and abnormal genital tract.

Key words: Malformations, female calf, congenital

Congenital hydrocephalus (water head) is an 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.*, 2007). Many congenital defects, either of genetics, environmental or unknown causes, or due to environmental-genetics interaction have been reported in domestic animals (Lepoid and Dickenson, 1978). The present report describes a unique case with multiple congenital anomalies in a cow calf.

A pleuriparus crossbred cow was brought to the State Veterinary Hospital, Chopan, distt. Sonbhadra (U.P) with the history of full term gestation, straining and dystocia. On vaginal examination, a large fluid sac on the head along with both forelimbs was observed in the birth canal. Manual correction and traction was tried but failed to deliver the fetus because of abnormally large size of the head. Subsequently, it was decided to remove the fetus by caesarean section and a dead hydrocephalus female calf was removed. The calf weighed 22 kg with a head sac diameter of 28 cm which contained about three and a half liters of serous fluid. As the calf was dead, necropsy was performed. Multiple defects including cleft palate, hydrocephalus and abnormal genital tract were noticed. After the

caesarean section, antiseptic dressing of the wound was done daily and systemic antibiotics were administered for 5 days and the cow recovered uneventfully after 10 days.

The dead calf (Fig. 1) was unique because of the extent of multisystem malformations. The frequency of congenital defects has been reported to range from less than 1 to over 3 % within herds (Beever, 2009). The formation of normal fetus depends on complex intracellular, intercellular and tissue temporal



Fig 1. Hydrocephalus in a cow calf.

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spatial interaction (Roberts, 1971). It has also been reported that excess or loss of genetic information usually results in phenotypic abnormalities in several organ systems, because a single chromosome carries genetic information important to many metabolic and developmental pathways (Shows *et al.*, 1982). The cause of multitude of developmental anomalies which were observed in the present case may be due to genetic factors (transgenes, chromosomes), environmental agents (infectious, toxins, fertilization techniques, managemental) or a combination of all these factors (Newman *et al.*, 1999). A combination of many congenital defects has also been previously reported in calves (Newman *et al.*, 1999). Cleft palate defect is also commonly observed in cattle and has been previously reported in Jersey and Hereford breeds (Shupe *et al.*, 1967). Nevertheless, like that of the present case, presence of this cleft palate defect along with other defects has not been observed.

In the present case, a defective tubular genital tract was also observed. Defects of the oviducts, uterus, cervix and vagina have been described in several breeds (Smolec *et al.*, 2010). In majority of the cases it has been observed that either the fusion of the

Mullerian ducts was lacking or exaggerated.

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