STUDIES ON BOVINE CONGENITAL INTERNAL HYDROCEPHALUS IN A NEW BORN COW CALF

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ABSTRACT

A case of congenital internal hydrocephalus in a new born indigenous calf and its successful therapeutic management has been reported.

Key words : Hydrocephalus, Congenital, Calf.

INTRODUCTION

Congenital hydrocephalus either external or internal is of great clinical and obstetrical importance usually encountered as an infrequent intrauterine developmental pathology of brain and the skull as a whole, characterized by the dropsical condition of the brain and has been reported in different breeds of cattle both indigenous and exotic. It may be caused by genetical, nutritional and environmental factors including infective etiology (Kalman, 1989). However, it is assumed to arise from disturbances in normal circulation of CSF resulting from altered production or absorption (Friede, 1975). External hydrocephaly in bovine foetus occurs with higher frequency than that of internal hydrocephaly. It has been reported to occur in indigenous cattle (Jana and Ghosh, 2005) and in cross breed jersey cow (Balasubramanian *et al.*, 1997) with characteristic accumu lation of fluid within the cerebral ventricles. The present communication deals with a report on congenital internal hydrocephalus in a new born calf and its therapeutic management.

CASE HISTORY AND OBSERVATION

A newborn indigenous cow calf weighing about 10 kg was presented to the clinic as an ambulatory patient with the complaint of lateral recumbency, inability head and body to rise and non-suckling of milk. On physical inspection it revealed distortion of the skull and on palpation of the cranial part it felt very soft owing to incomplete ossification of the bones of the skull. On careful clinical examination it revealed a body temperature of 101.4^{0}F, pulse 96/min and respiratory rate 14/minute. The calf exhibited occasional tremor on its trunk, paddling and convulsions. The calf was found very much weak and dehydrated and apathetic to external stimuli. History revealed that the calf was normally born to a local non-descript cow five days back from the day of presentation to the clinic at its fifth parity, sired by a stray bull. There was no such abnormal birth in previous calvings.

TREATMENT AND DISCUSSION

Intravenous infusion of DNS with 5% dextrose @ 500ml alongwith I/V administration of Vit. B Complex (Hivit ® - Vetnex) by slow infusion was carried out for three days. Oral therapy was recommended by prescribing syrup Kafcare ® Kapila) @ 15ml orally B.I.D., Syr. Ostovet fort ® Smithkin) @ 15ml orally B.I.D. and syrup Neogadine ® (Elixar) @ 10ml BID. Parenteral administration of antibiotic Injection Britax (Brisone) @ 500mg, per day for 5 days Inj. Vit. A 6 lakhs I.U. @ 2ml at 3 days internal and Inj. Dexona ® (Zydus Sarabhai) @ 2ml, 1.5ml and 1 ml daily with a tapering dose were done. The calf responded nicely and resumed suckling with disappearance of convulsion.

It is believed that many cases of stillbirth and early postnatal deaths are due to internal hydrocephalus with

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genetic origin rather than Vit. A deficiency. The present case as reported here, there was excessive accumulation of fluid which resulted in visible distortions of the cranium sculpture alongwith thinning of bony architecture. Arthur *et al.* (1989) advocated cranial puncture by making dome sawn off by means of wire or chain saw where the cranial valt is too rigid to mutate while making assisted delivery. However, in the present case normal delivery happened without any assistance and this would be due to poor growth and birth weight of the calf and wide, above all relaxed birth passage due to pluriparous nature of the cow. Administration of intravenous fluid with dextrose made rehydration of the animal. Supportive therapy helped in rejuvenizing the body condition and parentral antibiotic helped preventing secondary bacterial infection and acting against any possible bacterial infection if any in the neonate. The calf recovered uneventfully with the slow resorption of fluid, rejuvenation of body densities possibly due to oral calcium supplements. A simple autosomal recessive gene (Roberts 1986) have been reported to be linked with hydrocephalus in cattle. Jubb and Kennedy (1970) stated that congenital hydrocephalus is known to be inherited in cattle and exacerabated in its manifestation by co-existing hypovitaminosis-A. In the present case there was no previous history of hydrocephalic fetus and that rules out possible hereditary predisposition. Hence it is attributed that the present case of internal hydrocephalus could have occurred possibly due to simple autosomal recessive gene along with the deficiency of vitamin – A and other nutritional factor during intra uterine life.

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