

Neonatal hypoxaemia in a calf born to the dam with placenta praevia and dystocia

Sunanda Sharma and Narendra K. Sharma

Veterinary Hospital, India

Placenta praevia in human obstetrics immediately warrants laparohysterotomy for deliverance of live fetus otherwise causes fetal death due to hypoxaemia and cardio-respiratory collapse. Review of available literature on veterinary obstetrical cases reveals that detachment of fetal membranes from maternal attachments and their expulsion prior to fetal birth usually leads to deliverance of dead fetus. Present paper puts on record first report about deliverance of hypoxic, apneic and unconscious fetus born to a cow having dystocia and placenta praevia. The hypoxaemic comatose calf was successfully returned to survival by cardiopulmonary resuscitation.

A rare case of bovine dystocia was presented at hospital with the history that yesterday night the animal had signs of parturition (restlessness, suspended rumination, anorexia, severe abdominal contraction and straining with elevated tail, followed by rupture of water bag) but neither the fetus was delivered nor any body part of fetus appeared at vulvar commissure of dam. After about 14 hours, the first and second stages of labour passed away and third stage of labour began with fetal membranes detachment. The animal started eating and ruminating normally with detached fetal membranes hanging out at vulvar commissure. Per-vaginal clinical examination revealed that cervix was completely dilated and fetal head was lodged in the cervical canal. Retropulsion and further examination revealed that the fetus was in anterior presentation, dorso-sacral position with flexed carpal and fetlock joints of both the fore limbs. The fetus in-situ did not show any observable sign of vitality (foot withdrawal reflex, suckling or tongue withdrawal reflex and eye blink reflex). There was complete uterine inertia and no efforts were made by the animal to parturiate. Mutation and judicious traction on fetus was applied to relieve the dystocia. The calf was in comatose (unconscious) condition with apnea, very weak feeble pulse and bradycardia. The calf was kept suspended in upright position by holding both the hind limbs keeping the head off the ground, nostrils were cleared off mucus and fluid from upper respiratory tract was drained out by downward massage on trachea; it was then laid in lateral recumbancy with extended head. Cold water was poured over the head of calf for stimulating the respiration. For cardio-pulmonary resuscitation, chest compression and expansion was done by applying intermittent pressure with palm over the lung area of fetus; external cardiac massage was given to the neonate by applying gentle compression with palm followed by relaxation over the cardiac area of the neonate. The calf started normal breathing in about ten minutes but took 2-3 hours to stand.

In present case, detachment of fetal membranes was initiated prior to expulsion of fetus that hampered supply of oxygenated maternal blood to fetus. Lodgment of fetal head in hypoventilated cervical canal deprived it from oxygen uptake by natural breathing thereby fetus was subjected to hypoxia, insufficient oxygen uptake and carbon dioxide release caused hypoxaemia and respiratory acidosis; simultaneously metabolic acidosis also developed due to accumulation of acid products of anaerobic respiration. These events ultimately caused central depression and constriction of arteriole with resultant decrease in pulmonary circulation, bradycardia, central depression and cardio-respiratory collapse. These physiological events were clinically reflected as unconsciousness, apnoea, weak feeble pulse and bradycardia in fetus. Detachment of fetal membranes from maternal attachments and their expulsion prior to fetal birth (placenta-praevia) has been stated to follow deliverance of a dead fetus but in present case though the calf born appeared dead but it had very weak signs of vitality (feeble pulse, apnoea and bradycardia) due to compromised cardiopulmonary functions. Intermittent compression over the lung area on the chest triggered a reflex spontaneous respiration, a remarkably effective circulation was also maintained by applying intermittent compression over cardiac area on intact chest wall. The vitality and cardiopulmonary functions of comatose, unconscious and apneic calf fetus were successfully restored to normalcy.

Biography

Sunanda Sharma has completed her Ph.D at the age of 42 years from Rajasthan Agricultural University, Bikaner. She is engaged in teaching and research at College of Veterinary & Animal Science, Rajasthan University of Veterinary & Animal Sciences, India. She has published more than 18 papers in reputed journals and serving as an editorial board member and reviewer of several international journals of repute.

dr.sunanda_sharma@rediffmail.com