DYSTOCIA DUE TO FOETAL ASCITES COUPLED WITH SPINAL DYSRAPHISM AND AGENESIS OF REPRODUCTIVE SYSTEM IN A CROSSBRED COW

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ABSTRACT

A five-year old full-term pregnant Holstein-Friesian crossbred cow with the history of straining for the past 12 hours was presented to the Madras Veterinary College Teaching Hospital. Based on the clinical examinations, the case was diagnosed as dystocia due to foetal ascites. Successful per-vaginal delivery of foetal anomaly calf with spinal dysraphism was reported in this communication.

Key words: Cow, Dystocia, Foetal ascites, Spinal dysraphism.

Foetal ascites is the dropsy of peritoneum which is seen as an occasional cause of dystocia in many species but occurs most often in the cow (Roberts, 1986). Ascites can occur due to the overproduction or insufficient drainage of peritoneal fluid or blockage of lymphatics (Sloss and Dufty, 1980) and also due to reduced urinary excretion (Purohit *et al.,* 2012). Roberts (1986) reported the association of fetal ascites with dropsical condition of the uterus, mesotheliomas of the fetal abdomen and brucellosis. Congenital abnormalities of the spine and spinal cord are referred to as spinal dysraphisms (Tokudome *et al.,* 2017). This communication presents a case of dystocia due to foetal ascites with spinal dysraphism in a Holstein Friesian crossbred cow.

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Case history and observations

A five-year old full-term pluriparous Holstein-Friesian crossbred cow was presented to the Resident Veterinary Services Section, Madras Veterinary College Teaching Hospital with the history of dystocia for the past 14 hours and water bag ruptured 12 hours back. General examination revealed normal vital parameters. Per-vaginal examination revealed fully dilated cervix with foetus in anterior longitudinal presentation, dorso-sacral position and extended head and forelimbs with extensively distended fluid filled abdomen. Hence, the case was diagnosed as dystocia due to foetal ascites.

Treatment and discussion

Under epidural anaesthesia with 2% Lignocaine, the abdominal wall of the foetus was punctured by guarded foetotome knife. About 15 litres of amber coloured ascitic fluid came out and the dead foetus and placenta was removed by manual traction. The cow was treated with 50 IU of Oxytocin I/M on day 1; Ceftiofur @ 2.2mg/kg BW I/M, Chlorpheniramine maleate @ 0.5mg/kg BW I/M and Meloxicam @ 0.2mg/kg BW I/M for three days and the cow had an uneventful recovery. Detailed examination of the foetus revealed ascites and ankylosis of all limbs with depression at lumbar region (Fig. 1A&B). On radiological examination, there was absence of articulation of all the ribs with an underdeveloped sternum (Fig. 2A) and absence of L1, L2 and L3 vertebrae (Fig. 2B). Anatomical dissection revealed fully developed trachea, oesophagus, liver, stomach, intestine and gall bladder, however the foetus had underdeveloped lungs and sternum; perforated diaphragm and displaced abomasum into the thoracic cavity; renal dysplasia, agenesis of ureter, urinary bladder, urethra and genital system.

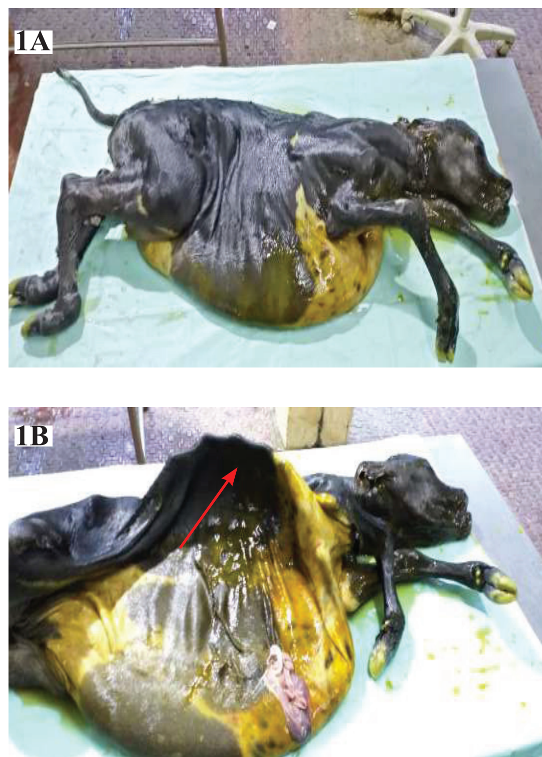

Fig. 1. A-Foetal ascites and ankylosis of all limbs. B- unarticulated ribs with sternum

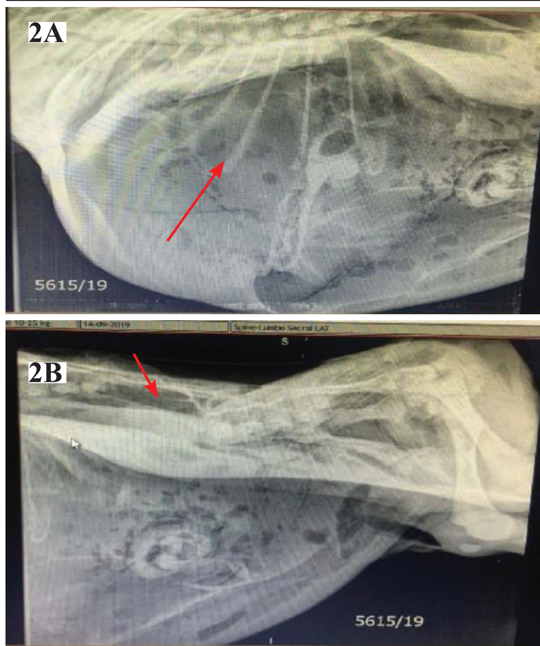

Fig. 2. Radiology: A- absence of articulation of all ribs with underdeveloped sternum. B- absence of L1, L2 and L3 vertebrae

Srinivas *et al.* (2007) reported an incidence of 6.9% dystocia due to fetal ascites outof overall incidence of 22.41% due to fetal oversize. Arthur *et al.* (1996) stated that ascites may be due to hepatic lesions, general venous congestion or urinary obstruction with or without rupture of bladder. It may also be hereditary or due to uterine disease. Placental dysfunction consequent to incompatibility of dam and fetus may predispose to fetal dropsy. Ascitic condition in the present case may be due to the impaired urinary system thus leads to accumulation of the fluid or the overproduction or insufficient drainage of peritoneal fluid. The increased abdominal diameter in fetal ascites resulted into dystocia. Approaches similar to the present case by vaginal fetal delivery have been recorded in many previous studies (Roberts, 1986). Segmental spinal dysgenesis (SSD) is characterized by focal agenesis or dysgenesis of the lumbar or thoracolumbar spine, with focal abnormality of the underlying spinal cord and nerve roots (Tortori-Donati *et al.,*1999). SSD is categorized by a complex dysraphic state in closed spinal dysraphism without mass and is morphologically found as aplasia or hypoplasia of the spinal cord with vertebral malformations, such as agenesis or dysgenesis of the vertebral body, deformation of the vertebral arches and spinal canal stenosis at the affected segments (Tortori-Donati *et al.,*2000). The same condition is reported in a Holstein calf by Tokudome *et al.* (2017). The morphological changes of the spine in the thoraco-lumbar segments in the present case would be compatible with SSD. Conclusively, the dystocia due to fetal ascites can be relieved successfully by puncturing the foetal abdomen thereby reducing the diameter of fetal abdomen facilitating per-vaginal delivery. These findings revealed spinal dysraphism and agenesis of reproductive organ in the foetus and the case was recorded.

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