Dystocia Due to Fetal Ascites with Nephroblastoma in a Jersey Crossbred Cow

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(Received : 29-05-2015; Accepted : 03-07-2015)

Abstract
An ascitic dead male fetus delivered from eight month pregnant Jersey crossbred cow during abortive dystocia had a large, round extra renal encapsulated mass in the abdominal cavity which on microscopic examination revealed blastemal, epithelial and mesenchymal elements suggestive of nephroblastoma.

Key Words: Jersey crossbred fetus, ascites, nephroblastoma, dystocia

Fetal ascites may be caused either by the overproduction or insufficient removal of peritoneal fluid (Roberts, 1971) and causes dystocia during parturition (Krishnakumar et al., 2012). Nephroblastoma is a congenital neoplasm arising from metanephric blastema during pre- or post-natal life (Devi et al., 2011). This tumor is a combination of embryonic renal tissue with myxomatous mesenchyme in various amounts (Meuten, 2002). Nephroblastomas are common in swine and chickens, but has rarely been reported in dogs, sheep and cattle. This present report records a rare case of dystocia due to fetal ascites with congenital nephroblastoma in a Jersey crossbred cow.

Case History and Observations
A pleuriparous Jersey crossbred cow on its third gestation was reported with the history of abortive dystocia at eight month of gestation. The water bag had ruptured 6 hours before but the animal was unable to deliver the fetus on its own. The case was attended by a local quack and referred to Teaching Veterinary Clinical Complex, VCRI, parameters were normal. The vaginal examination revealed a fully dilated cervix and the presence of a dead fetus inside the uterus. The fetus was in anterior longitudinal presentation, dorso-sacral positions with both the fore limbs extended into the vaginal passage. Traction on both the fore limbs did not help to deliver the fetus. Thorough examination of the fetus revealed that the fetal abdomen was filled with fluid. Hence the case was tentatively diagnosed as dystocia due to fetal ascites.

Treatment and Discussion
After administering epidural anaesthesia (2 per cent lignocaine hydrochloride, 5 ml, sacrococcygeal space) the birth canal was lubricated with cetrimide cream. The embrytome knife was taken inside the uterus and fetal abdomen was incised at the flank region. About 20 liters of fluid escaped from the fetal abdomen through the incision. As soon as the fluid was escaped, a dead male fetus was delivered per vaginum by simple traction. The animal was treated with inj. DNS - 3 liters (i/v), inj. Enrofloxacin - 1500 mg (i/m), inj. Chlorpheniramine maleate - 300 mg (i/m), inj. Meloxicam - 150 mg (i/m), inj. Calcium borogluconate - 450 ml (i/v), Bol. Uromet (6 Nos., i/uterine) and inj. Oxytocin- 15 IU (i/v).

The fetus was comparatively small. Inside the abdominal cavity of the fetus, a very large and round extra renal mass (45 x 36 cm) was noticed. Weight of the mass was 5.2 kgs with distended abdomen. Grayish white capsule with a thickness of 1.2 cm was noticed around the mass. The cut surfaces of the mass appeared white colored cauliflower like growth. Histopathology of the mass revealed blastemal, epithelial and mesenchymal elements. Blastemal cells were differentiated to form dense, irregular masses, clusters and nests. Epithelial cell structures appeared early stages of tubuloglomerulogenesis. Mesenchymal cells were polyhedral in shape found between tubules. Gross and microscopical examination confirmed

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The Indian Veterinary Journal (June, 2016)

the mass as congenital nephroblastoma.

Roberts (1971) stated that foetal ascites could be associated with the dropsical condition of the uterus, mesothelimas of the fetal abdomen and brucellosis. Noakes et al. (2001) stated that ascites may be due to hepatic lesions, general venous congestion or urinary obstruction with or without rupture of bladder. Placental dysfunction consequent to incompatibility of dam and fetus may predispose to fetal dropsy.

Nephroblastoma or embryonal nephroma is a congenital neoplasm usually develops during fetal life or postnatal life. The tumor mostly replaces renal parenchyma at varying degrees (Madheswaran et al., 2009) but this was not true in the present case, where the tumor had developed in the extra renal region. The blastema differentiates to form nephrons and supporting connective tissue. The lungs have been reported as the preferential site for metastasis (Zoller et al., 2008). Devi et al. (loc cit) reported congenital nephroblastoma during prenatal life as in the present case. The exact cause of nephroblastoma was not yet established but Brown and Malik (2001) reported that the loss of function of tumor suppressor genes like WT1 causes nephroblastoma in humans.

References