A 2 year-old pregnant Miniature Scottish Highlander cow was presented for suspected hydrops with an unknown breeding date. On presentation the cow had a large, distended abdomen. Transabdominal and transrectal ultrasound identified a large amount of hypoechoic fluid within the uterus and no viable fetus. Due to absence of fetal viability and a severely distended uterus, labor was induced. A large amount of placental fluid was passed, but due to lack of progression, an ultrasonographic examination was repeated 48 hours after induction and abnormal hyperechoic placentomes and a non-viable fetus were visualized. A vaginal examination determined that the fetus was too large to pass vaginally and a cesarian section was performed. A dead bull calf with axial and appendicular skeletal chondrodysplasia, severe brachygnathism, and hydrocephalous, among other defects, was delivered. The abnormally formed fetus and lack of normal placentation could have both contributed to the accumulation of fluid that led to the presentation of hydrops amnion/allantois.

Chondrodysplasia is typical of the bulldog calf mutation that has been described in Dexter cattle. This defect has been associated with a gene mutation in the aggrecan gene ACAN. Both the dam and the sire were tested and found to be heterozygous carriers for this gene mutation. The clinical presentation, in combination with parental genetic testing, lead to the diagnosis of a bulldog calf mutation in this case. It was recommended to use a sire that tests negative for the mutation if this cow is to be re-bred.

This is the first reported case of the bulldog calf mutation in Miniature Scottish Highland cattle. This is of clinical importance because it demonstrates that the bulldog calf mutation is not limited to Dexter cattle, suggests that miniature breeds may be genetically similar and highlights the clinical importance of genetic testing for known diseases among cattle breeds.

References