

Vertebral fracture and posterior paralysis in feeder pigs caused by lightning strike

S.E. Sanford, DVM Dip. Path. Diplomate ACVP and Gaylan K.A. Josephson, DVM Dip. Path.

Two live paralyzed pigs were submitted to the Huron Park Laboratory, Ontario, Canada, on March 28, 1991. The pigs weighed 36.3 and 45.4 kg, respectively. Although willing to eat and drink they were unable to rise or walk even when assisted. These two were the smallest of 15 similarly affected pigs in a barn with about 300 feeder pigs.

The 15 affected pigs were scattered among six of eight pens in the longer arm of an L-shaped barn. This arm measured 24.4m (80') x 12.2m (40') and had four pens on either side of a central, 0.6 (2')-wide, passageway. Each pen was about 3.8m (12.5') x 3m (10'). The back of each pen consisted of metal pipes forming a partial grille embedded in the concrete floor. A manure pit ran along the outside wall on each side of the barn behind this grille.

All 15 pigs had been found down, usually in a "dog-sitting" position, at feeding time the night before they were submitted to the laboratory. All pigs in the barn had been up and about when fed earlier that morning. A severe electrical storm had passed through the region that afternoon and on this farm the electric fan in the barn, the yardlight and a lamp and television set in the farmhouse had all been blown out.

Necropsy findings were similar in both pigs. There was a longitudinal fracture of the body of L5 vertebra. Massive hemorrhage into the spinal canal and the surrounding musculature accompanied the lumbar fracture. In one pig there was complete separation of L5 from L6 with dislocation and transection of the spinal cord. Hemorrhage in this pig had infiltrated through the peritoneal wall into the pelvic cavity. There were no burn or scorch marks on the skin or hooves. The major histological finding was marked hematomyelia and myelomalacia of spinal cord sections at and

around the fracture site. Inflammatory cells, predominantly neutrophils, infiltrated the meninges and nerve radicles in the affected area.

It was postulated that the affected pigs fractured their vertebrae after being jolted into an acute "jack rabbit" takeoff by electrical shock created when lightning struck the barn during the storm. The affected pigs were probably those that were in contact with the metal grille at the time of the strike. The producer remarked that, especially in warm weather, pigs frequently laid against the metal pipes. Except for the absence of superficial burns, the lesions seen here were similar to those reported in the few accounts of lightning strike on pigs found in the literature^{1,2} and in cases of accidental electrical shock and/or electrocution.^{3,5}

References

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Veterinary Laboratory Services Branch, Ontario Ministry of Agriculture and Food, Huron Park, Ontario, Canada. NOM 1Y0.

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