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PORCINE FOREBRAIN VACUOLIZATION: A NOVEL CONDITION OF SWINE ASSOCIATED WITH WASTING?

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Introduction

The term wasting does not imply a diagnosis by itself but is a clinical name to describe a physical condition characterized by growth retardation, usually of multifactorial origin. This report describes an apparently new condition of pigs clinically characterized by wasting and vacuolization of the brain neuropil.

Materials and methods

Since November 2016, an increasing number of farms in Spain have experienced growth retardation in nursery pigs. Animals are weaned in good body condition, and after 1-2 weeks, they start losing weight. Prevalence may vary between 7-25%. Most of these animals do not die and have to be euthanized for humanitarian reasons. At necropsy, no significant lesions were reported, but occasional gastric ulceration. To investigate potential causes of this condition, 6 affected farms were investigated (including 5 sick and 5 healthy pigs from each herd).

Results

Pigs from 5/6 farms displayed significant difference in body condition and weight between affected and healthy pigs; healthy pigs from the sixth farm submitted had a very similar weight to that of sick animals. Besides the poor body condition, few gross lesions were observed in examined pigs, being erosion/ulcer of stomach the most frequent one. Histopathologically, the most consistent lesion was neuropil vacuolization of the prosencephalon, mainly located in the thalamic nuclei and in the transition between white and grey matter of the neocortex (24/30 in sick and 6/30 in healthy pigs). Interestingly, 4/6 healthy pigs that also showed this lesion were from the sixth farm. *Porcine circovirus 2* (PCV2) and *Porcine reproductive and respiratory syndrome virus* (PRRSV) infections were ruled out.

Discussion and conclusions

Clinical and pathological investigations of these wasting cases in nursery pigs were associated with spongiosis of the forebrain. Literature suggests this lesion linked to congenital, metabolic (toxic/deficiency) scenarios, but the precise cause of these cases is still unknown.