

EDEMA IN STILLBORN PIGLETS

Maane Vitória dal Mas

Centro de Ensino Superior Riograndense

Patrícia Polla

Centro de Ensino Superior Riograndense

Fabíola Freire Albrecht

Centro de Ensino Superior Riograndense

Flávia Serena da Luz

Centro de Ensino Superior Riograndense

All content in this magazine is licensed under a Creative Commons Attribution License. Attribution-Non-Commercial-Non-Derivatives 4.0 International (CC BY-NC-ND 4.0).



INTRODUCTION

According to the Secretariat of Agriculture, Livestock and Supply, in 2021 Rio Grande do Sul contributed US\$ 711.23 to Brazil's trade balance, from pork exports, having produced more than 902 thousand tons of the product. On this occasion, the state became the second largest pork exporter in the country. Among the challenges faced by the activity are reproductive failures and problems with animal health. Several congenital and acquired alterations plague the herds, which can lead to the loss of piglets and, consequently, an increase in production costs and a decrease in the financial return of the activity. This report aims to present a case of stillbirth in a pig farm, describing the lesions found at necropsy and possible diagnosis.

CASE REPORT AND THEORETICAL FOUNDATION

Three stillborn pigs were sent for necropsy, all Landrace females, from a breeding farm in the city of Rondinha (RS). The necropsy was conducted at the Animal Pathology Laboratory of the Centro de Ensino Superior Riograndense – CESURG – Sarandi unit (RS).

External examination revealed cyanotic mucous membranes and increased abdominal volume. Upon opening the corpses, severe ascites with severe compression of abdominal organs, as well as the diaphragm, were identified. The verified liquid was colorless to light red, limpid and of low density and cellularity (edema). There was also severe multifocal to coalescing pulmonary edema in the three animals associated with hydrothorax.

Fragments of the lungs were collected for histopathological examination. The technique used consisted of collecting 1 cm diameter fragments, fixing them in 10% formaldehyde and processing the tissues through multiple baths in xylol and alcohol and, finally, soaking them in paraffin for subsequent tissue

cutting of 5 micrometers. Microscopically, collapse of multifocal to coalescing alveoli was evidenced, as well as homogeneously eosinophilic intraalveolar material in intact alveoli, compatible with pulmonary edema.

Such injuries are compared to the study by Barbosa et al. (2020), who associated congenital pulmonary hypoplasia with necropsy findings involving ascites and hydrothorax in newborn pigs. Congenital pulmonary hypoplasia is an alteration that causes incomplete lung development, originating from genetic or environmental factors. Alterations that may lead to lung compression, such as diaphragmatic hernia, intrathoracic masses and pleural effusion, may cause the condition that would justify the animal's death. However, other lesions such as anasarca and malformations in other organs, as described by the same authors, were not found in the present case.

In a study carried out by Morés et al. (2012), an infection by Porcine Circovirus Type 2 (PCV2) was found in stillborn pigs, macro and microscopic lesions such as ascites, hydrothorax, subcutaneous edema, in addition to moderate multifocal atrophy of cardiomyocytes with areas of extensive mineralization and discreet mononuclear inflammatory infiltration.

Circovirus infections lead to almost 100% mortality of a litter. It is a non-enveloped virus of about 17nm, making it one of the smallest viruses ever found. Transmission can be vertical or horizontal, and the vertical has been demonstrated, and is relevant to justify significant reproductive losses. Clinical signs presented in adult pigs are: apathy, dyspnea, progressive weight loss, lymph node enlargement, and after chronicity they may present jaundice, anemia, diarrhea, among others. (ZANELLA; DIAS; EMBRAPA, 2003).

Gross lesions are not commonly seen in aborted fetuses or stillborn piglets, and, when

found, are not necessarily pathognomonic of a specific disease or agent. However, they are usually found: congestion, hemorrhage in the skin and other tissues, presence of fluid in cavities such as the pleural, pericardium and peritoneum. HOLLER (1994, apud PESCADOR et al., 2010).

The characteristics of the lesions found in the necropsy of the pigs in this report suggest a possible case of porcine circovirus, and the other animals in the herd of origin did not show clinical signs that would refer to this disease. However, it is not possible to rule out

pulmonary hypoplasia of genetic origin, given the similarity with previously performed studies.

CONCLUSIONS

Carrying out the necropsy procedure, sending material for histopathological examination, is essential to help diagnose conditions and diseases that impair the reproductive efficiency of swine herds. It is important to observe congenital lesions and relate them to possible deleterious genetic alterations.

REFERENCES

BARBOSA, F.M.S.; OLIVEIRA, V.K.S.; LIMA, R.C.; GOIS, D.D; LUCENA, R.B. Hipoplasia pulmonar associada à ascite e hidrotórax em um suíno neonato. *Acta Scientiae Veterinariae*. 2020.

MORÉS, N.; CARON, L.; MORÉS, M.A.Z.; GAVA, D.; ESTEVES, P.A.; ZANELLA, J.R.C. Mumificação fetal associado ao circovírus suíno tipo 2 (PCV2) em um rebanho livre de patógenos específicos (SPF).VII SINSUI- **Simpósio Internacional de Suinocultura**. Porto Alegre, 2018. p. 283- 286.

PESCADOR, C.A.; BANDARRA, P.M.; ANTONIASSI, N.A.B.; SANTOS, A.S.; OLIVEIRA, E.C.; BARCELLOS, D.E.S.N; DREIMEIER, D. Metodologia aplicada na avaliação de fetos suínos abortados e natimortos. **Pesquisa Veterinária Brasileira**. Cuiabá, v. 30, n. 12, p. 1058-1063, 2010.

ZANELLA, J.R.C; MORÉS, N.; EMPRESA BRASILEIRA DE PESQUISA AGROPECUÁRIA. Circovirose Suína. Concórdia, 2003.