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Introduction: Heterotopic ossification (HO) is defined as the formation of extra-skeletal bone within soft tissues, rarely reported in the mesentery as mesenteric HO (MHO). The pathogenesis of HO is unknown and both genetic and non-genetic forms, secondary to tissue injury or inflammation, are documented in humans. A case of MHO leading to intestinal volvulus and sudden death in a sow is described.

Materials and methods: The sow was part of a breeding unit of 1,100 sows where 12 sows died within 3 weeks after showing non-specific illness, and was found dead. Post-mortem examination (PME) and post-mortem computed tomography (PMCT) were performed. The mesentery was fixed in 10% neutral-buffered formalin and routinely processed for histology. Five-micron sections were stained with HE.

Results: On PME, an intestinal volvulus affecting the small intestine around a focal, hard, irregular, mass-like mesenteric lesion, compatible with HO was observed, accompanied by serofibrinous peritonitis. PMCT was consistent with HO. Histologically, the mesenteric lesions comprised multifocal central areas of trabecular bone irregularly surrounded by chondroid tissue and peripheral, well-differentiated, dense fibroblasts. Foci of endochondral ossification were observed.

Conclusions: Based on macroscopic findings, imaging (PMCT) and histological features, this case is consistent with MHO and secondary intestinal volvulus. This is the first case where MHO was histologically evaluated and characterized in a sow, although the underlying cause leading to MHO is unclear. Histopathology and attempt of further investigation of similar cases may contribute to a better insight into the MHO pathogenesis in animals and humans.

ACARDIUS ACEPHALUS IN AN ABORTED LAMB

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Introduction: Acardius acephalus or TRAP (twin reversed arterial perfusion) syndrome is a unique malformation described in human medicine and rarely reported in domestic ruminants. It is a unique complication of monozygotic twin pregnancy.

Materials and methods: An aborted malformed ovine fetus, part of a triplet pregnancy, was submitted for surveillance purposes and examined radiologically, macroscopically and histologically. The two other lambs were clinically unremarkable. During the same lambing season, in the flock of 180 ewes, five other lambs were born with other malformations (estimated prevalence: 1.7%).

Results: The fetus was markedly oedematous and presented with only two hindlimbs, one rudimentary thoracic limb, an umbilical cord, a scrotum and a prepuce. Post-mortem radiology revealed unremarkable long bones of the hindlimbs, a rudimentary pelvis, a spinal column and rudimentary ribs. On dissection, one body cavity was detected, containing an intestinal tract with atresia recti and ani, two kidneys with hydronephrosis and dilated ureters (hydroureters) alongside two intra-abdominal testes. The spine had a fully developed spinal cord. No other organs were identified macroscopically. The histological investigation of all the soft tissues was unremarkable.

Conclusions: The malformation was classified as acardius acephalus, not suggestive of an infectious aetiology. The relatively high prevalence of malformations in the lambs of this flock raised the possibility of a genetic or a toxic (teratogenic) aetiology. It is important to correctly classify congenital malformations to ensure the selection of appropriate testing to achieve a correct diagnosis.

A COMBINED APPROACH FOR DETECTION OF SMALL RUMINANT RETROVIRUS CO-INFECTIONS

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Introduction: Results of a project on gross changes in slaughtered animals alerted us of the likely underreporting of Jaagsiekte retrovirus (JSRV)-induced ovine pulmonary adenocarcinoma (OPA) in Switzerland. Furthermore, ovine lungs with OPA frequently exhibited lesions suggestive of maedi visna virus (MVV) or caprine arthritis encephalitis virus (CAEV) infection, indicating that co-morbidities might occur.

Materials and methods: Lungs and pulmonary lymph nodes were sampled from suspected OPA cases, inflammatory lung lesions and control lungs (total of 110 cases). Tissues were a) processed for histology and immunohistochemistry (IH), and b) underwent DNA extraction and real-time PCR for JSRV, MVV and CAEV. Peptide sequences were used to generate virus-specific customized polyclonal antibodies. PCR-positive OPA cases and formalin-fixed and paraffin-embedded MVV- and CAEV-infected synovial cell pellets served as positive controls.

Results: Fifty-two lungs were histologically diagnosed with OPA. Histological evidence of MVV/CAEV infection was seen in 25 lungs. JSRV was detected by qPCR in 85% of the suspected OPA cases, six were co-infected with MVV, one with CAEV, respectively. MVV was detected by qPCR in 14 cases, four lungs were positive for CAEV, three had MVV/CAEV co-infection. JSRV was detected by IH in 91% of the PCR-positive cases, whereas MVV and CAEV immunoreactivity was seen in 79% and 25% of PCR-positive lungs, respectively.

Conclusions: Although qPCR has a higher sensitivity than IH, the combined approach allows investigations on viral cell tropism and pathogenic processes in co-morbidities, including their potential interdependency.

ACTINOBACILLUS PLEUROPNEUMONIAE IN SWINE: LUNG LESIONS SCORING AND MULTIPLEX PCR IDENTIFICATION IN PIEDMONT FARMS

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Introduction: Porcine pleuropneumonia is one of the main causes of massive losses in the pig industry, with high economic impact. Like other aetiological agents, *Actinobacillus pleuropneumoniae* (APP) is responsible for severe necrotizing pleuropneumonia. A total of 19 different APP serovars are currently recognized. Isolate characterization is crucial to identify changes in serovar prevalence over time and to optimize vaccination regimens. The aim of this study was to identify APP serovars in pneumonic lesions of naturally infected dead pigs in Piedmont Region and to correlate them with severity and extent of lesions.

Materials and methods: A total of 35 pigs were included, originating from vaccinated and not vaccinated farms. Lungs were evaluated using a gross pathology scoring system (0–4). Samples for histological, microbiological and molecular investigations (multiplex PCR) were collected.

Results: Lung lesions were represented by oedema, haemorrhages, infarction and necrosis associated with fibrinous pleuritis. APP was isolated in 7/34 (21%) samples, PCR resulted positive in 18/34 (53%) samples. More severe lesions (score 4) were associated with serovars 9/11 (100%) and 7/2 (100%). Serovars 5 and 6 were associated with score 3 in 2/3 (67%) and 5/7 (71%) samples, respectively; an association with score 4 was found in the remaining samples. Only serovar 2 induced low-grade lesions (score 1) in 2/3 (67%) cases.

Conclusions: This study highlights the need of a multidisciplinary approach to detect APP serovars in pig farms, including both isolation and molecular biological investigations.

UTERINE CARCINOMA WITH MULTIPLE METASTASES AND CERVICAL SQUAMOUS CELL CARCINOMA IN A POT-BELLIED PIG

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