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Cs. Jakab – Á. Szabára – E. Rohn – J. Molnár– M. Rusvai:

ACCIDENT CAUSED BY LIGHTNING STRUCK IN A HORSE. CASE REPORT

A two year old, bilaterally cryptorchid Hungarian halfbreed horse struck by lightning was dissected. Post mortem findings included the current marks, arboreal patterns of the pilo-erection at the gluteal region of the horse (*Figure 1*), acute vasodilatation, -hemorrhages, -edema in the subcutaneous tissue at same region (*Figure 2*); multiple hemorrhages in the skeletal muscles, in the myocardial tissues, and in the mucous membrane of the stomach, in the pancreas, in the lungs (*Figure 3*), in the kidneys; acute diffuse lungs edema (*Figure 4*); multiple subperitoneal-, subpleural-, subepi- (*Figure 5*), and subendocardial hemorrhages; acute leptomeningeal-, and brain congestion, -edema and hemorrhages; fracture of the 7th cervical vertebra. During the histopathological analysis they detected in the *skin* (at the entrance of the lightning): abnormal cleft between the corium and epidermis, vacuolisation/cytolysis of the keratinocytes (*Figure 6*), dilated capillaries with enlarged endothelial cells in the corium, acute interstitial hemorrhages, vacuolised myofibers of the arrector pili muscle arranged perpendicularly on the epidermal layer (*Figure 7*), vacuolised matrix cells of the dermal hair

papilla (*Figure 8*), fragmentation of the collagen fibers in the corium (*Figure 9*); in the *subcutis* partial coagulation of the myofibers due to lightning strike (*Figure 10*); in the *myocardium* acute interstitial edema, hemorrhages and degeneration/vacuolisation of the Purkinje cells (*Figure 11*), and vacuolisation of media layer of the coronary arteries (*Figure 12*); acute perivascular erythrocytadiapedesis, -congestion, and edema in the brain and leptomeninges (*Figure 13*). The samples from the skin, subcutaneous tissue, myocardium and brain were examined immunohistochemically. For the primary antibody: claudin-5 (1:100; Zymed), Ki-67 (1:100; DAKO) were used. Immunohistochemical staining was performed using the streptavidin-peroxidase procedure: antigen-bound primary antibody was detected using standard avidin-biotin immunoperoxidase complex (DAKO LSAB2 Kit), the chromogen substrate was 3,3-diamino-benzidine tetrahydrochloride (DAB substrate-chromogen; DAKO, Denmark). Mayer's hemalaun was used for counter-staining. The endothelial cells of the different vessels of the samples showed intense membrane positivity for humanized anti-claudin-5 antibody. The authors did not detect the deletion of the claudin-5 protein in the vessels of different samples. The claudin-5 protein helped the detection of the extravasated (claudin-5 negative) erythrocytes around the (claudin-5 positive) vessels in the brain (*Figure 14*), leptomeninges (*Figure 15*), myocardium and skin.

L. Kőrösi – J. Povaszán – L. Péntzes – I. Sári:

RESULTS OF FIELD EXPERIMENTS WITH VAXXITEK HVT+IBD VACCINE IN

HUNGARY

Field efficacy of Vaxxitek HVT+IBD vaccine was assessed by evaluation of production and animal health performance of altogether 750.000 chickens in two consecutive production cycles on eight farms (6 broiler and 2 „coloured label” farms) of different regions in Hungary. The results were compared either to the parameters of flocks paralelly vaccinated by other IBD vaccine on the same farm or to the parameters of previous two batches of the farm using other IBD vaccines. In the control groups vaccination against Marek’s disease was not implemented. In the experimental period clinical form of Marek’s disease and/or IBD did not occur on any farm. Bursas Fabricii of chickens euthanized at 20–22 an 40–42 days of age had higher weight and more homogeneity in the herds vaccinated with Vaxxitek HVT+IBD than in the paralel control groups. In some flocks at 20–22 days of age lesions of bursas due to an immunosuppressive effect were histopathologically diagnosed. These histopathological lesions in the groups vaccinated with Vaxxitek HVT+IBD were less severe, recovered completely until six weeks of age compared to control groups having more severe lesion at 20–22 days of age and still chronic or reparative lesions later. The evaluated production parameters (mortality, weight at slaughter, FCR, European Poultry Efficiency Factor – EPEF) were better in the groups vaccinated with Vaxxitek HVT+IBD, however only the difference of EPEF was statistically significant between them.

Cs. Szabó – B. Gregosits – Zs. Kiss – Zs. Szabó – L. Bárdos:

EFFECT OF APPLE CIDER VINEGAR ON RESPONSE TO NEWCASTLE DISEASE VACCINE IN BROILER CHICKENS

Apple cider vinegar (ACV) is a well known folk remedy and often used in animal husbandry as water acidifier. The aim of this study was to investigate the effect of vinegar containing drinking water (1 l. 5% ACV in 100 l water) on immunresponse of broiler throughout the rising. The chickens were immunized against Newcastle disease virus (NDV) in the hatchery and on the 20th day. The titers of total serum immunoglobulin (IgY), hemagglutination antibody titer (HAG) to NDV were examined as parameters of humoral immunity.

Rosetta cell forming (RCF) test using NDV sensitized sheep red blood cells was performed to evaluate the cellular immunity. The elevation of IgY titers was more slope in ACV drinking groups compared to controls. Titers of HAG were significantly ($p < 0.001$) higher in ACV groups of 42 days-old chickens. The lymphocytes of ACV treated chickens formed more rosette compared to control animals ($p < 0.05$)

These results show that ACV dissolved in drinking water may enhance the immune response against NVD vaccine both humoral and cellular immune functions during rearing period of broilers.

Cs. Jakab – Zs. Szentgáli – R. Psáder – A. M. Szász – M. Rusvai – P. Gálfi – L. Horváth jun. – Á. Horváth:

LARYNGEAL CHONDROLIPOMA IN A DOG. CASE REPORT

Supraglottic pedunculated laryngeal chondrolipoma was diagnosed by laryngoscopy in a ten-year-old male Sarplaninac dog. The exophytic, 3x2 cm, lobulated, grayish-white benign mixed mesenchymal tumour originating from left inside wall of the larynx at the supraglottic area and protruded into the cavity of the larynx with upper respiratory obstruction. The chondrolipoma caused serious mixed type dyspnoe and cyanosis. The benign mesenchymoma was surgically removed. The tumour sample was fixed in 8% neutral buffered (in PBS, pH 7.0) formaldehyde solution for 24 hours at room temperature, dehydrated in a series of ethanol and xylene and embedded in paraffin. The 3–4 µm thick sections were routinely stained with hematoxylin and eosin. Histopathology revealed an unencapsulated tumour composed of multiple islands of hyaline cartilage, interspersed with mature adipose tissue and myxoid tissue. Microscopical features showed no atypia, immature lipoblasts or chondroblasts. There were multifocal areas of chondroid metaplasia. PAS-reaction demonstrated abundant glycogen, mainly in chondrocytes. Tissue of chondrolipoma was examined immunohistochemically. For the primary antibodies, mouse monoclonal antibodies against *S-100 protein* (1:100; DAKO), *vimentin* (1:100; DAKO), *citokeratin* (1:100; DAKO), *desmin* (1:50; Novo Castra Laboratories), α -*SMA* (1:50; Novo Castra Laboratories), *claudin-5* (1:100; Zymed) and *Ki-67* (1:100; DAKO) were used. Immunohistochemical staining was performed using the streptavidin-peroxidase procedure: antigen-bound primary antibody was detected using standard avidin-biotin immunoperoxidase complex (DAKO

LSAB2 Kit), the chromogen substrate was 3,3 – diamino-benzidine tetrahydrochloride (DAB substrate-chromogen, DAKO, Denmark) in each case. Mayer's hemalaun was used for counter-staining. Immunohistochemically the chondrocytes showed a nucleo-cytoplasmic positivity for S-100 protein, cytoplasmic positivity for vimentin. The lipocytes were negative for S-100 protein, but showed cytoplasmic positivity for vimentin. The chondrolipoma was negative for cytokeratin, desmin, α -SMA and claudin-5 tight junction protein. The proliferation index of chondrolipoma, based on Ki-67 antigen was <1%. The endothelial cells of the peritumoural arteries, veins, capillaries, lymphatics and intratumoural vessels showed intense membrane positivity for claudin-5 molecule. The neoangiogenesis was quantified by immunohistochemical evaluation of microvessel density (MVD) using claudin-5 as marker for vascular endothelium in chondrolipoma. Computer image analysis was used to measure the intratumoural MVD. For claudin-5, mean MVD was 0,54 pixel% per x 200 fields (range 0.19–0.90).

The authors believed that this tumour originally was primary laryngeal lipoma and chronic local trauma by respiration caused the chondroid metaplastic transformation in benign tumour. To the authors' knowledge, this is the first report of the canine laryngeal chondrolipoma.

Á. Szabára – K. Czeibert – L. Müller – P. Rudas:

PHYSIOLOGICAL BASES OF HOMING PIGEONS' ORIENTATION. LITERATURE REVIEW. PART 2

In the second part of the literature review the authors summarize the bases of magnetic sensation of the orientation of homing pigeon and the aspects of the pigeon-breeding. Understanding of the magnetic sensation is in the centre of the researches. The examination of it is a complicated project because the researchers do not know what happens onto the effect of magnetic field. That is why the authors present primary the function anatomical, physiological and biochemical bases of this sense. At present the researchers know the magnetoreceptors localized on more points and working with different mechanisms. One of the receptors sense the intensity of the magnetic field and the other receptor defines the direction of the field; and the researchers differentiate the light-dependent sense and the magnetite crystal based sense.

Sz. Farkas – J. Gál:

FIRST HUNGARIAN REPORT OF INCLUSION BODY HEPATITIS ASSOCIATED WITH ADENOVIRUSES AND SECONDARY PARVOVIRUS INFECTION IN AN INDONESIAN PIT-VIPER [*PARIAS (TRIMERESURUS) HAGENI*]

The authors diagnosed inclusion body hepatitis associated with adenoviruses in a wild-caught, adult, male Indonesian pit-viper [*Parias (Trimeresurus) hageni*]. The snake was kept in captivity under species-specific conditions in a 40x40x70 cm glass terrarium, furnished with pine bark chipping as bedding and a branch for climbing. Prior to its death the snake refused to consume food by itself, and regurgitated after force-feeding.

After dissecting the carcass and histopathological examinations the authors

detected fatty liver, development of inclusion bodies in the nucleus of hepatocytes and degeneration of liver cells. Inclusion body hepatitis, as well as anemia due to earlier feeding disorders was determined.

Because of the suspected virus infection further studies were performed. PCR (polymerase chain reaction) examinations revealed the presence of a viper adenovirus belonging to the genus *Atadenovirus* in the liver and the intestine of the snake. Based on comparison of the partial DNA-dependent DNA-polymerase gene sequences of adenoviruses the *Parias hageni* adenovirus seems to be identical to the viperid adenovirus found in an asp viper (*Vipera aspis*) in a German laboratory. The viperid adenovirus is different from the previously sequenced snake adenovirus (SnAdV-1), the Eublepharid adenovirus 1 and the Helodermatid adenovirus 1 proved to be its closest relatives.

An approximately 1297 nucleotide long sequence of a parvovirus was also amplified from the Indonesian pit-viper using the consensus primer pair designed by the authors. Similarly to the previously sequenced serpentine- adeno-associated virus (SAAV) the parvovirus detected and sequenced by the authors belongs to the genus *Dependovirus*.

A. – Cetinsu –A. Reist – R. Dettwiler – A. Poživil – R. Weilenmann – Gy. S. Fekete:

DIAGNOSIS AND TREATMENT OF DIABETES MELLITUS IN CYNOMOLGUS MONKEY (*MACACA FASCICULARIS*). CASE REPORT

Diabetes mellitus is the most common endocrine disorder in captive cynomolgus monkeys. Its main features are a high fasting blood glucose and weight loss despite high food intake. The authors detected diabetes in a 14-year-old female cynomolgus monkey (*Macaca fascicularis*). The long-acting synthetic insulin (Levemir[®]), applied once a day, failed to prevent totally the rise of blood glucose. The authors report about the successful treatment of a 14-year-old monkey's case of diabetes mellitus based on experience from small animal medicine. They used single subcutaneous morning injection of Caninsulin[®] (a two component insulin preparation) daily in a dose of 5 IU/BW at the beginning and 3 IU/BW as a maintenance dosage. Based on this case, for monthly monitoring the weight control and the measurement of fasting blood glucose and fructosamine proved to be sufficient.