



سومین کنگره بین المللی دامپزشکی طیور
۳-۴ اسفند ماه ۱۳۹۰ - تهران

3rd International Veterinary Poultry Congress

February 22 - 23, 2012 - Tehran, Iran



سازمان نظام دامپزشکی جمهوری اسلامی ایران
Veterinary Council I.R. IRAN

Congress Proceedings



Co-incident severe copper deficiency and sudden death due to spontaneous rupture of carotid artery may indicate carotid dissection (aneurysm) in an ostrich

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Objectives: Nowadays large scale ostrich breeding is expanding worldwide. In developing countries, in which ostrich business is in infancy state, the industry is not well designed and defined. Therefore, mismanagement and nutritional imbalances, such as vitamin, mineral and trace element deficiencies, are among frequent observation by ostrich veterinarian. According to the literature, copper deficiency affects the lipid metabolism and is associated with aneurysms in ostrich. In this article, a case of sudden death with spontaneous hematoma in carotid artery, coincident with sever copper deficiency in an ostrich is reported which might be due to vascular aneurysm.

Materials & Methods: An ostrich farmer presented a dead ostrich case with the history of sudden death and a large hematoma in neck region. He also described two more cases with history of sudden death and large blood clot in the thorax in the past 3 weeks. The age of birds ranged between 5 to 7 years. The flock had a history of low performance. Despite post mortem changes, necropsy was performed. Unfortunately, due to pm changes, no suitable sample was found to be collected for histopathology. However, a sample from liver was taken for atomic adsorption analysis of copper concentration in the tissue.

Results & Conclusion: In necropsy a large hematoma and an obvious longitudinal tear was demonstrated in the carotid artery, along with hypovolemic anemia in mucus membranes and most organs. No other gross abnormalities were observed. Based on the history of malnutrition, diet imbalance and low performance in the flock, as well as necropsy findings, carotid artery dissection (aneurysm) was tentatively diagnosed. Based on the data provided by atomic adsorption analysis, concentration of the liver sample was as low as 1 ppm, however, it was not possible to confirm that the two other cases described by the farmer, were really caused by aneurysm. It was concluded that there might be a relationship between the severe copper deficiency in the case examined and possibly in the flock, and observation of the longitudinal dissection in the carotid artery, resulting in carotid artery dissection or Aneurysm in carotid artery. To our knowledge it is a first case report of sever copper deficiency con incident with carotid artery dissection.

Keywords: Ostrich, Copper Deficiency, Carotid Dissection, Aneurysm

Isolation and molecular characterization of Newcastle Disease Virus circulating in broiler flocks of Northeast Iran

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Objectives: Newcastle disease is one of the most devastating avian viral diseases and causes substantial economic losses in the poultry industry worldwide. Virulence of Newcastle disease virus (NDV) is mainly determined by the amino acid sequence of the fusion (F0) protein cleavage site. During the last 12 months an outbreak of Newcastle disease affected poultry flocks in most regions of Iran. This study was conducted to isolate and molecularly characterize NDV isolates obtained from the recent outbreak of broiler flocks in Northeast Iran.

Materials & Methods: Many broiler flocks with various mortality ranges submitted for diagnosis, were subjected to clinical and necropsy examination. The vvNDV was suspected in most cases. A total of seven brain samples were collected and homogenized. The homogenized samples were inoculated in embryonated chicken eggs. The allantoic fluids were examined by hemagglutination (HA) assay followed by Hemagglutination inhibition (HI) assay using NDV positive sera. RNA from positive allantoic samples were extracted and subjected to reverse transcription-polymerase chain reaction (RT-PCR) using specific primers amplifying the cleavage site of fusion gene. The PCR products were sequenced and analyzed.

Results & Conclusion: All seven virus isolates from flocks with viscerotropic velogenic ND presentation were positive in HA and HI assays. RT-PCR assay proved the identity of all isolates. Analysis of the deduced amino acid sequences of the F protein cleavage site showed that all recent isolates were velogenic strains. They had the amino acid sequence 111-GRRQKRF-117 in their F0 cleavage site. This investigation showed the circulation of vvNDV in broiler flocks of Northeast Iran.

Keywords: Newcastle Disease Virus, NDV, Viscerotrophic Velogenic NDV (vvNDV), Cleavage Site, ND Outbreak, Broiler Flocks