Cirrhosis in a Leopard (*Panthera pardus*) died of age related senile changes: a case study

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Abstract

Examination of a carcass of a 16-year-old leopard (*Panthera pardus*) brought to Department of Veterinary Pathology, College of Veterinary Science & Animal Husbandry, Anand from Kamala Nehru Zoological Garden, Kankaria, Ahmedabad showed emaciation, dehydration and anemic nature and a wound on left forelimb with serosanguineous exudation. The lung revealed focal areas of emphysema, and focal to diffuse deposition of black colored carbon pigments. The liver was hard and dark greenish in color with uneven surface. Histopathologically the section of liver revealed mild fatty changes, multifocal areas of carbon particle deposition and focal areas of fibrous tissue proliferation with mononuclear cell infiltration. Lungs showed multifocal areas of emphysema and diffuse black colored carbon particle deposition in the parenchyma. Gross and histopathological revealed this case of cirrhosis died due to age related senile changes.

Introduction

Chronic liver disease refers to a disease process that involves progressive destruction and regeneration of liver parenchyma leading to fibrosis and cirrhosis (Liu *et al*., 2012). Cirrhosis is the final common pathological pathway of liver damage arising from a wide variety of chronic liver diseases (Zhou *et al*., 2014). It is characterized by disrupted liver architecture along with fibrotic bands, parenchymal nodules, and vascular distortion. The leopard (*Panthera pardus*) is one of the five "big cats" in the genus *Panthera*. It is a member of the Felidae family with a wide range in some parts of sub-Saharan Africa, West Asia, the Middle East, South and Southeast Asia to Siberia. It is listed as Near Threatened on the IUCN Red List because it is declining in large parts of its range due to habitat loss and fragmentation, and hunting for trade. The populations of leopard in different areas of Gujarat state is contiguous and are found almost in every state as free ranging wild or in captive states especially in zoos. According to Ruedi *et al*., (1978) liver fibrosis and cirrhosis maintain a significant position among the diseases of the snow leopards kept in zoological gardens. The present paper describes the unusual case report of cirrhosis in a leopard died of age related senile changes.

Case Details

The 16 years-old male leopard at Kankaria Zoo, Ahmedabad showed the clinical signs of change in behavior and loss of appetite prior to sudden death. The carcass was brought to the Department of Veterinary Pathology, College of Veterinary Sciences and Animal Husbandry, Anand by the Zoo officials for confirmation of the cause of mortality. Carcass presented was emaciated externally and was intact except a wound on left foreleg with serosanguineous discharge. During the postmortem, the affected tissue samples were collected in 10% neutral buffer solution for further histopathological examination.

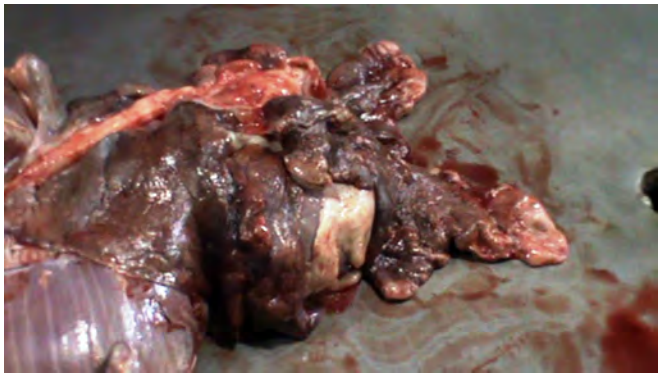

Fig 1. Focal emphysema on lungs

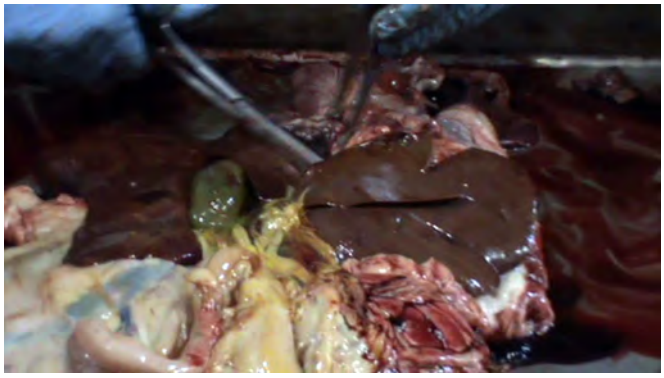

Fig 2. Hard, dark greenish liver, normal gall bladder, normal intestines

Result

Post-mortem findings revealed focal areas of emphysema (Fig 1.) and focal to diffuse deposition of black colored carbon pigments on lungs. The liver was hard and dark greenish in color with uneven surface (Fig 2.). Histopathological examination of liver (Fig 3.) revealed mild fatty changes, multifocal areas of carbon particle deposition and focal areas of fibrous tissue proliferation with mononuclear cell infiltration. Lung (Fig 4.) showed multifocal areas of emphysema and diffuse black colored carbon particle deposition in the parenchyma.

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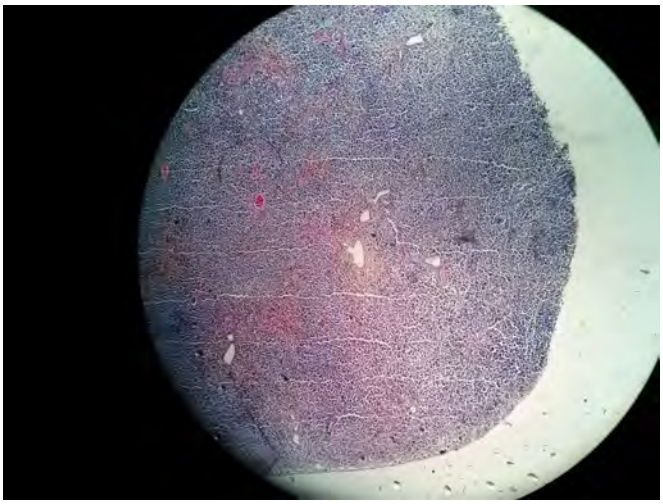

Fig 3. Liver revealed mild fatty changes, multifocal areas of carbon particle deposition and focal areas of fibrous tissue proliferation with mononuclear cell infiltration

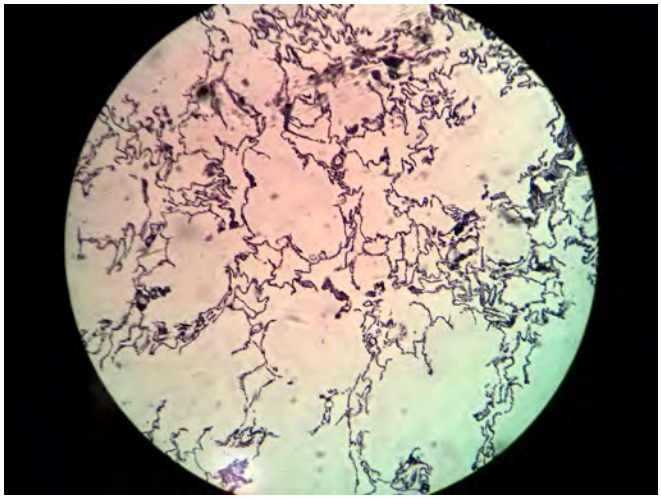

Fig 4. Lung showed multifocal areas of emphysema and diffuse black colored carbon particle deposition in the parenchyma

Conclusions

A variety of carbon particles induce acute to chronic conditions in animals. Access of animals to carbon particles is often by exposure to polluted or contaminated areas. Zoos provide unique hygiene and enrichment facilities but the duration of the captivity and polluted atmosphere can be one of the key factors behind accumulation of carbon particles in visceral organs in such cases. Hepatic cirrhosis can be associated with age of the animal.

References

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