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Hepatic cirrhosis in a soft shell turtle- A clinical case report

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Abstract

A clinical case of hepatic cirrhosis in a soft shell turtle diagnosed on the basis of clinical manifestations, radiography and ultrasonography, is reported and discussed. Treatment with fluid , prednisolone, silymerin, ursodeoxycholic acid , vitamin B- complex , nandrolone and thyroxine was promising .This seems to be the first report of hepatic cirrhosis/fibrosis, diagnosed and managed successfully in a soft shell turle in India.

Key words: Cirrhosis, Hepatic, Hyperechoic, Jaundice, Liver, Ultrasonography.

Hepatic diseases in chelonians may vary in clinical manifestations from sub clinical illness to end stage life threatening hepatic failure. Hepatic dysfunctions are recognizable in turtles/tortoises only in advanced stage. Jaundice, weakness, nervous signs, greenish faeces and urine are the important clinical manifestations seen in advanced stage of hepatic failure (Frye, 1991). Hepatic cirrhosis in chelonians has been reported on necropsy findings (Guedes and Lavalle, 2004). In India, reports on hepatic diseases in chelonians could not be traced. Therefore, the present report describes and discusses a clinical case of liver cirrhosis, based on clinical and ultrasonographic observations, in a soft shell turtle.

Case History and Observations

A client owned female soft shell turtle, weighing 550 g, with anorexia and yellowish discoloration of body for 4 days was referred at the hospital for the diagnosis and treatment. The history revealed that the turtle was being fed with, tomatoes, papaya, chapaties, rice, banana etc. Detailed clinical examination revealed dullness, weakness, pale oral mucosa, reduced activity, yellowish discoloration of skin and plastron (Fig.1), low muscular tone, anorexia and greenish faeces and urates. Radiological examination was unremarkable showing normal lung radio-opacity and no visualization of any other organ (Fig.2). Abdominal survey sonography (Fig. 3), through cervical windows showed granular hyperechoic echo texture of the liver with serrated margins,

Diagnosis and Treatment

Based on clinical, radiographic and ultasonographic examinations, jaundice in soft shell turtle was ascribed to liver cirrhosis/ fibrosis. Treatment with fluid therapy (glucose saline or Ringers solution 20-25 ml/kg/day SC for 7 days), prednisolone (1.0 mg/kg IM OD for 7 days), vitamin B complex (0.05 ml IM daily for 7 days followed by oral drops for 21 days), thyroxine (20 µg orally every 2nd day for 5 times), nandrolone (2.0 mg/kg IM weekly for four times), hepatic stimulants (silymarin 30-40 mg/kg PO TID for 28 days) and ursodeoxycholic acid (20 mg/kg PO OD for 28 days) showed uneventful recovery.

Discussion

Clinical manifestations of dullness, weakness, pale oral mucosa, reduced activity, yellowish discoloration of skin and plastron (Fig.1), low muscular tone, and anorexia in soft shell turtle aroused suspicion of hepatic disease. Yellowish green colour of faecaes and urates further suggested severely compromised liver with reduced function (Divers, 1997). In reptiles particularly chelonians jaundice is a common clinical manifestation of severe hepatic diseases (Frye, 1991). Radiographic examination (Fig.2) did not reveal any significant findings as no organ except lung was visible radiograpically. It seems that radiography is of very limited use in assessing liver in turtles/tortoises as gastrointestinal contents and superimposition of shell makes the visualization of important organs difficult (Divers, 1997). Echogenic standard of liver of turtle has been reported similar to those described for tortoise and mammals (Nyland *et al.,* 2005, Stetter, 2006). Increased echogenicity of liver may be due to hepatocellular lipidosis (Nyland *et al.*, 2005, Dutra, 2007, Redrobe, 2010) or cirrhosis as has been observed in other animals. Ultrasonography has been used to visualize the liver. Although, it is useful for identifying gross changes in liver size, discrete neoplasms and abscessation, its use is limited use in categorizing subtle changes in liver structure and pathology (Divers,

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Fig. 1. Soft shell turtle showing yellowish discoloration

Fig. 2. X-ray of soft shell turtle with jaundice showing normal radio-opacity of lungs. No other organ is visible.

Fig. 3. Ultrasonographic image of liver of a soft shell turtle with jaundice , viewed through cevical windows showing hyperechoic granular texture of the liver with serrated margins suggesting liver cirrhosis/ fibrosis.

1997). Hepatic diseases in chelonians may occur as a consequence of severe hepatic inflammatory disease, hepatic or post hepatic biliary obstruction, cirrhosis or severe hepatic lipidosis (Craford, 1999). Liver diseases have been the important cause of morbidity and mortality in captive chelonians (Keymer, 1978).Various infections (bacterial, viral, fungal, protozoal), or toxins or poor captive nutrition may lead to liver dysfunctions. It is difficult to rule out the possibility that the liver failure in the present case was caused by metabolic abnormalities or toxins. Despite hepatocellular lipidosis being a relatively common finding in captive reptiles (Frye, 1981), hepatic cirrhosis in chelonians has been seldom described. Fluid therapy was given to take care of dehydration, to induce diuresis and provide nutrition. Use of thyroxin aimed at stimulating lipolysis and metabolic consumption. Protein anabolism was enhanced by nandrolone (Simpson, 2006). Silymarin was used as hepatoprotector (Simpson, 2006). Reduction of jaundice began after 7th day of therapy and turtle started eating after 10th day of therapy. However, treatment continued for 4 weeks.

This appears to be the first clinical case record of jaundice associated with liver cirrhosis/fibrosis, diagnosed employing, clinical and sonographic examinations, and its successful management in India.

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