# ASCITES DUE TO LIVER CIRRHOSIS/FIBROSIS IN AN INDIAN GRAY MONGOOSE (*HERPESTES EDWARDSI)*

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**ABSTRACT**

A clinical case of ascites in an Indian gray mongoose due to liver cirrhosis/fibrosis, diagnosed on the basis of electrocardiography, radiography and ultrasonography, is reported and discussed. Treatment with furosemide, colchicine, ursodeoxycholic acid, propranolol, vitamin B- complex drops and an Ayurvedic liver protective and corrective liquid was promising. This seems to be the first report of ascites, ascribed to liver cirrhosis/fibrosis, diagnosed and managed successfully in an Indian gray mongoose in India.

***Key words***: Ascites, electrocardiography, Indian gray mongoose, liver cirrhosis, radiography, ultrasonography

**Introduction**

Indian gray mongoose (*Herpestes edwardsi*) popularly known as Nevlaa, is a small rodent like mammal often kept as pet to keep dwellings free form rodents and other pests (Whitfield, 1978). Mongoose appear remarkably similar to weasels in form and life style but are actually members of the superfamily Feliforma or cat like carnivores. In certain areas rabies is common in mongoose and they are reservoir species for rabies. Under domestication as pet, clinical disease scenario in Indian gray mongoose is not known. The present report describes and discusses a case of ascites due to liver cirrhosis/ fibrosis along with its clinical management in an Indian gray mongoose.

**Case history and investigations**

An Indian gray mongoose with anorexia and distended abdomen, refractory to routine treatment for 10 days, was referred to Senior Author for the diagnosis and treatment. Detailed clinical examination revealed dullness, reduced activity, abdominal distension (Fig.1) with fluid thrills, tachycardia, and anorexia. Peripheral blood smear cytology was negative for haemoprotozoan and ehrlichial infections on two successive occasions. Radiological examination of the chest and abdomen showed ground glass appearance of the abdomen (Fig. 2). Electrocardiogram of the mongoose (Fig. 3) revealed sinus tachycardia (heart rate as 320, sinus rhythm ; P 0.05mV, 0.02 second; P-R interval 0.07 second: R 0.6 mV, QRS 0.02 second; S-T 0.03 second; T 0.075 mV, 0,03 second; R-R interval 0.18 second; Q-T 0.08 second) without any evidence of right heart enlargement. Abdominal survey sonography (Fig. 4) showed hyperechoic liver with serrated margins, fluid in liver lobes and abdomen, and normal kidneys.

**Diagnosis**

Based on clinico-haematological, radiological, electrocardiographic and ultrasonographic examinations, ascites in the Indian gray mongoose was ascribed to liver cirrhosis/ fibrosis.

**Treatment**

Treatment was initiated with furosemide (2 mg/kg i.m. OD for 6 days followed by 1.5 mg/kg PO BID for 10 days), colchicine (0.03 mg/kg PO SID daily), propranolol (0.2 mg/kg PO BID), vitamin B complex drops (2 drops PO BID ) and an ayurvedic liver protective and corrective liquid preparation (containing aquous extract of *Eclipta alba, Phyllnlthus amarus, Cichorium intybus, Boerhaavia diffusa, Tinospora cordifolia, Tecomella undulata, Fumaria parviflora, Berberis aristata, Rheumemodi, Terminalia chebula, Plumbago zeylanica, Embelia ribes, Tephrosia purpurea, Curcuma zedoaria, Cissampelos pareira,Lpomoea turpethum, Picrorhiza kurroa,Andrographis paniculata, Ocimum sanctum, Azadirachta indica, Solanum nigram,Tribulus terrestris,Emblica ossicinalis, Glycyrrhiza glabra, Rubia cordifolia, Clerodeldrum phlomidis, Terminalia arjuna, Achillea millefolium, Tamaris gallica, Cassia occidentalis, Foeniculum vulgare* in sugar base - 4 drops PO TID).

**Discussion**

Clinical manifestations of distended abdomen (Fig. 1) with fluid thrill, and anorexia in Indian gray Mongoose aroused suspicion of ascites. This clinical suspicion was confirmed on radiography showing ground glass appearance of abdomen (Fig. 2). In canines and felines ascites (peritonneal effusions) is a common clinical manifestation of renal failure, heart failure, liver failure, haemoprotozoan or ehrlichial diseases. However,

Fig.1: Indian gray mongoose showing distended abdomen

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Fig.2: X-ray of Indian gray mongoose showing ground glass appearance of the abdomen and normal radio-opacity of lungs suggesting ascites.

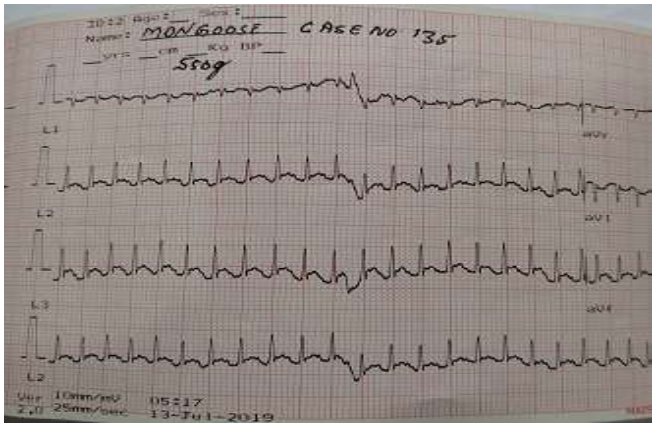


Fig.3: Electrocardiogram (sensitivity 1, speed 25 mm/second, Lead I, II, III, aVR, aVL and avF)) of an Indian gray mongoose. Lead II revealed sinus tachycardia (heart rate as 320, sinus rhythm ; P 0.05mV, 0.02 second; P-R interval 0.07 second: R 0.6 mV, QRS 0.02 second; S-T 0.03 second; T 0.075 mV, 0,03 secnd; R-R interval 0.18 second; Q-T 0.08 second suggesting sinus tachycardia.

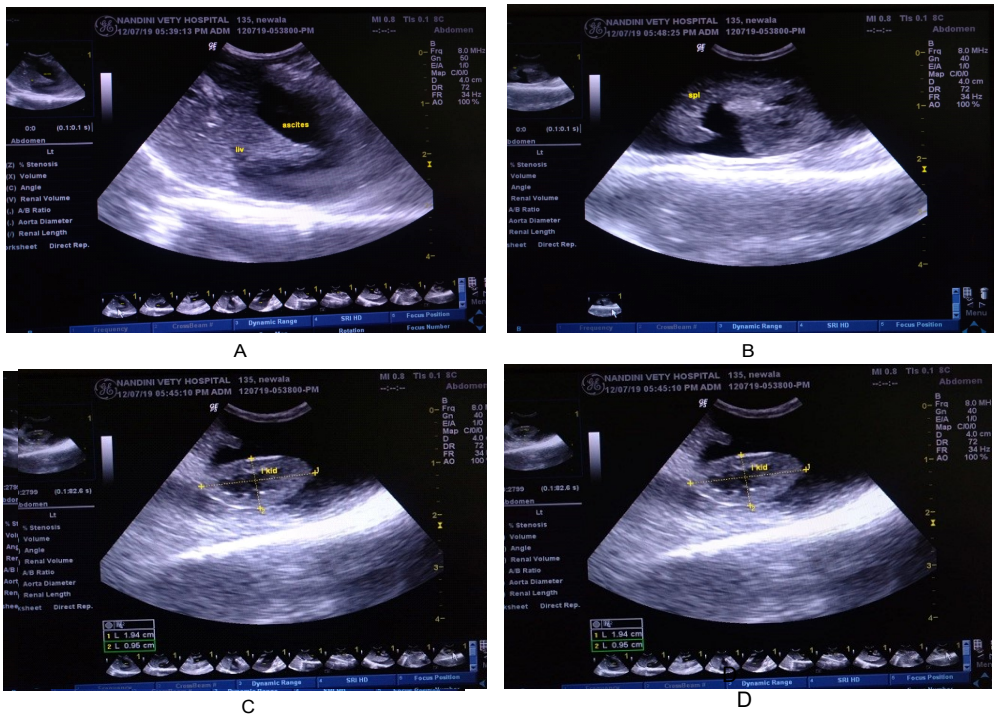


Fig.4: Ultrasonogram of the Indian gray mongoose with ascites showing A. hyperechoic liver with serrated margins and fluid, B. hyperechoic spleen and fluid, C. normal echotexture of right kidney (1.68 x 0.86 cm) and D. normal left kidney (1.94 x 0.95 cm) suggesting liver cirrhosis/fibrosis.

no such information could be traced for Indian gray mongoose. Negative peripheral blood smears ruled out blood protozoan and rickettsial infections as a cause of ascites. Congestive heart failure owing to right heart enlargement is another important factor in the etiology of ascites in animals. Small P wave and absence of deep Q or deep S waves with normal QRS in electrocardiogram (Fig. 3) excluded right heart enlargement as an etiology of ascites in Indian gray mongoose as per criteria's set for canines and felines (Tilley,1985). Almost constant R-R interval (0.18 second) increased heart rate (320 beats per minutes) suggested sinus tachycardia as per feline standard (Tilley, 1985). No electrocardiographic data for Indian gray mongoose could be traced to compare the present findings. The present values have been compared with cats. The findings of ultrasonography in the present case played a very important role in ascertaing the etiology of ascites. The hyperechoic liver with serrated margins, hyperechoic spleen, fluid in abdomen and liver lobes, and normal ecotexture of

kidneys (Fig. 4) were suggestive of liver cirrhosis/ fibrosis as has been described in dogs (Boroffka,1998). Based on songraphy, ascites in the Indian gray mongoose was ascribed to liver cirrhosis/fibosis. Therapy with diuretic (furosemide), antifibrotic (colchicine), antihypertensive to reduce portal hypertension (propranolol), vitamin B complex and hepato protectant (an Ayuvedic drug) as practiced in the management of cirrhosis/fibrosis in dogs showed encouraging results with reduction in abdominal distension and resumption of food intake within a week of therapy. However, therapy continued for a month as detailed above. This appears to be the first clinical case record of ascites due to liver cirrhosis/fibrosis, diagnosed employing electrocardiography, sonography, radiography and blood examination and managed successfully in India.

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