Some Short Notes on various species

Hydatidosis in a Jaguar (*Panthera onca*)

S. Sathasivam[1], Pathan Nasurallah Khan[2], K. Senthilkumar[3] and K.P.M. Perrumahl[4]

A report on hydatidosis in wild animal is rare. The present paper reports a case of hydatidosis in a Jaguar. An 18 year old Jaguar kept at Arignar Anna Zoological Park, Chennai, died after showing signs of illness for about 15 days. Postmortem examination revealed emaciation with 2 liters of straw-coloured fluid in the abdominal cavity and 250ml in the thoracic cavity. The lung showed tennis ball size cysts, two each on the diaphragmatic lobes, and one each on the apical lobes. The liver was occupied with big and small hydatid cysts, which contained lots of watery fluid and daughter cysts. The adjacent praenchyma was atrophied. Spleen had a few infracts; kidneys were congested; heart showed diffuse petchiae haemorrhage over the epicardium. The stomach showed mucosal erosions and the intestinal blood vessels were engorged. Blood smear did not reveal any infection. Cysts recovered from the lungs and liver were examined to identify the parasite. The cyst contained a large amount of fluid and protoscolices that showed vigorous movement of sucker and rostellum. The metacestode stage was identified to be hydatid cyst due to *Echinococcus granulosus*.

Death was confirmed to be due to cysts. Hydatidosis in animals and man is an important zoonotic disease. In the host, the adult worm does not cause so much distress, but the metacestode stage of the parasite in intermediate host is responsible for dysfunction of vital organs due to pressure atrophy. The cyst causes interference with the function of the affected organs and the danger of fatality in certain cases (Bhattacharya *et al*., 2000).

Echinococcus granulosus is primarily in domestic cycle involving dog as the host and livestock as intermediate host (Verma *et al*., 1998). Hydatidosis has been reported in wild herbivores such as American bison (Choudhary *et al*., 1987). There are records of occurrence of hydatid cyst in the liver of lions of old Madras zoo (Ramanujachari and Alwar. 1954) and Maharajbagh zoo (Ganorkar *et al*., 1997 and Dhoot, and Upadhye, 2002). *Echinococcus granulosus* worms associated with marked catarrhal enteritis were recovered from both small and large intestine of an Indian wolf (*Canis lupus*) during necropsy at Nandankanan Zoo (Rao *et al*., 1973).

In the present situation, the Jaguar, which died after illness of about 15 days and necropsy, revealed destruction of liver tissue and lung parenchyma due to large number of hydatid cyst of varying sizes and leads to dysfunction of the liver and lung, however the exact causes of acquiring the infection of *Echinococcus granulosus* by the jaguar are obscure.

Acknowledgement
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Necropsy of a porcupine (*Hystrix indica*) which had met with an accident: A case study

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A carcass of female porcupine (*Hystrix indica*) which had met with a vehiculur accident was presented by the Forest Department, Parbhani Territory (Maharashtra) to the Department of Veterinary Pathology, College of Veterinary and Animal Sciences, MAFSU, Parbhani for necropsy (Fig. 1*). Gross external examination revealed bruising wound on the back and right lateral aspect of thoracic region showing swelling and cyanotic discoloration of the skin. Quills from the wounded area were found to be lost and broken as well as

Fig. 1. Carcass of porcupine (*Hystrix indica*) presented for necropsy

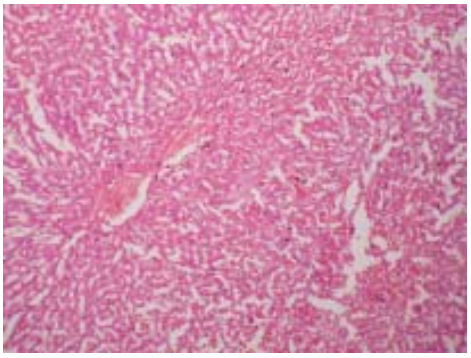

Fig. 2. Liver parenchyma showing severe haemorrhages in sinusoidal spaces and congestion of central vein (100X, H &E)

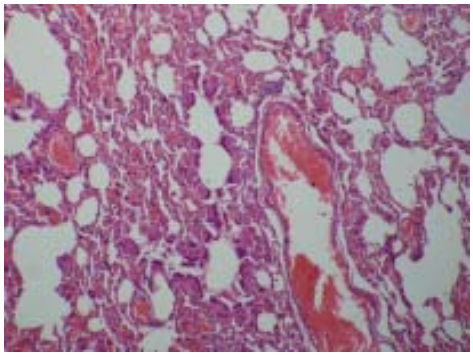

Fig. 3. Note severe haemorrhages involving lung alveoli and bronchioles and compensatory emphysema (200X, H &E)

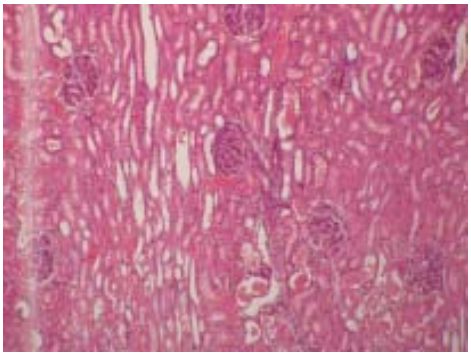

Fig. 4. Section of kidney showing haemorrhages in parenchyma (200X, H &E)

few had penetrated into the skin. After opening the carcass, the region below the wounded skin showed severe haemorrhages and blood clots with severe congestion of thoracic and abdominal organs. Lungs showed emphysema, congestion and severe haemorrhages. There were petechial haemorrhages on heart along with engorged coronary vessels. Stomach was found to be full with thick semisolid green ingesta. Spleen showed congestion and haemorrhages. Liver was found to be severely haemorrhagic and congested. Right kidney showed diffuse petechial and focal ecchymotic haemorrhages. Urinary bladder was distended with urine.

Literature on the histopathological examination of organ systems of porcupines is found to be very scanty. However in the present necropsy the histopathological examination of the organs collected viz. liver, kidneys, lung, spleen and heart showed severe haemorrhages and congestion (Fig. 2, 3, 4*). The animal had met with an accident and taking into consideration the gross and histopathological examination, the cause of death of animal appears to be hypovolemic shock resulted from severe haemorrhages.

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(*See Web supplement for images at www.zoosprint.org)

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Case Report: Oesophageal Obstruction in a Captive Himalayan Palm Civet (*Paguma larvata*) at Padmaja Naidu Himalayan Zoological Park, Darjeeling

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Obstruction of oesophagus occurs in all animals (O' Connor, 1980). Oesophagus or gullet is a musculo-membraneous tube connecting the pharyngeal cavity to the stomach which conveys the food and drink down to the stomach from the mouth. It can be divided into cervical, thoracic and a very small abdominal part. Owing to its deep position the oesophagus is not visible in outline except when it is distended by a bolus or an obstruction, or by dilatation of its lumen, and all this normally occurs in the cervical region only. Any swelling of the tube in this part of its course can be felt by manipulation in the jugular furrow. The causes of the obstruction may be (i) large size of the obstructing body (ii) sharp projections in the obstructing material which get fixed in the oesophageal wall (iii) stricture of the oesophagus or the spasm of its muscle, (iv) a tumour or growth inside the oesophageal lumen (v) extraluminal mass pressing the oesophagus.

Case Report

On 18-7-2007 morning the keeper on general observation reported that the animal Himalayan Palm Civet (House Name: Nandu Age: 13 years; Male) was not well. Upon physical examination after manual restraint the following clinical signs observed:

1. Restlessness with an anxious look
2. Swelling in the ventral region of the neck
3. Anorexia
4. Dysphagia
5. Attempts to regurgitate
6. Arching of the neck

After clinical examination the animal was immediately taken to the inpatient ward in the hospital for further examination which revealed an obstruction on palpation. Further when an X-ray (A-P lateral view using 48 KV for 1 second at 90cm FFD) of the neck region was done it revealed a round distension in the cervical region of the oesophagus.

Treatment: Prior to tranquilization the animal was weighed and found to be 9 kg. The dosage of Ketamine and Xylazine used were 5mg/kgwt and 1mg/kgwt respectively (Ketamine: Xylazine - 0.45ml : 0.09ml). Manual removal of the obstruction was not possible thus surgical intervention was conducted.

The oesophagus was surgically exposed to remove the obstructed mass. The operation was conducted placing the animal in dorsal position under the influence of general anesthesia with a combination of Ketamine and Xylazine (0.45 ml: 0.09ml). A longitudinal incision was made on the cervical area through the skin and subcutaneous tissue sufficiently long and over the site of obstruction to permit easy extraction of the obstruction. The incised wound edges were swabbed with Neosporin powder (Neomycin, Polymixin B - Sulphates and Bacitracin Zinc powder) and the obstructing mass was removed. The mass was a mixture of fur and the remnants of food particles and approximately it was 8cm diameter ball. To close the oesophageal incision, two rows of sutures were given, the first layer internally was sutured with chromic catgut no. 2-0 using cushing sutures. The outer skin-layer was sutured with Vicryl 2-0 using simple interrupted sutures. While closing the outer skin layer, inclusion of surrounding fascia was done into the suture bites to strengthen the suture lines.

The medicines used during the surgical procedure along with intravenous fluid therapy were:

1. Injection Dextrose 5% (Claris Lifesciences Ltd)- 450 ml, intravenously
2. Injection Ceftriaxone - 500mg (Cefstan:Ranbaxy) - 1 vial intramuscularly
3. Injection Dexona - vet (Zydus Animal Health Ltd. Each ml contains Dexamethasone Sodium Phosphate- 4.4mg) - 1ml intramuscularly
4. Injection Melonex (Intas Pharmaceuticals, each ml contains Meloxicam BP 5 mg) -1 ml intramuscularly
5. Injection Belamyl (Zydus Animal Health Ltd, B-complex liver extract with Vitamin - B12) - 1ml intramuscularly.

After the operation was over, an antagonist for Xylazine: Yohimbine hydrochloride, 10mg/ml (Inj. Reverzine)-0.09ml was given by intravenously. During the recovery phase Injection Cefstan, Injection Melonex and Injection Belamyl were continued for seven days. Additionally Injection Avil (Pheniramine Maleate - each ml contains 22.75 mg) -0.5 ml was administered for the initial three days. Postoperative management consisted of withholding normal feed for 7 days. Only bananas, boiled egg and water with glucose and electrolytes were given to the animal followed by medicines for a week.

Result: After the surgery and the post-operative care the animal was normal and then released in the enclosure and normal feed provided.

Discussion: The obstruction was successfully removed. The case recovered without any complications. A rapid, accurate diagnosis based on history, clinical signs, physical and radiographic examination (Tyagi & Singh, 2002) together with rigorous post operative care led to the successful removal of the obstruction in a Himalayan Palm Civet.

Conclusion: Successful surgical intervention is possible in such rare cases arising in wild animals. The etiology behind such cases can vary but in this case one of the important factors was senility so this case presents a ready reference for such cases in future.

Acknowledgement
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Uterine Adenocarcinoma in an Indian one-horned Rhinoceros *(Rhinoceros unicornis)*

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The great Indian one-horned rhinoceros is an endangered species. Clearing of natural habitat owing to vast development in the interest of human welfare and poaching for monetary gains has finished up the rhino population from its large distribution range. In most of the zoos there are reports of breeding failure. The male rhinoceros in captivity suffers from low sperm count and females from uterine neoplasms due to sexual inactivity (Sweet, 2004). The present paper describes a case of uterine adenocarcinoma in a one horned rhino.

A 35-year old female Indian one-horned rhinoceros belonging to Nandankanan Zoo had a history of faecal impaction since 2nd week of June 1998. It had recovered with oral laxative, i.e. 2 litres of milk of magnesia administered in feed daily for 7 days. The rhino had chronic intermittent recurrence of loss of appetite and dullness since 2001 which was alleviated by administration of liver tonics and digestive enzymes. In Nov 2004 vaginal bleeding was noted in addition to dyspepsia and constipation. Oral styptochrome tablets 10 nos along with laxative improved the condition. The animal had never conceived during her stay in the zoo. On 20.5.07 the animal was off-feed again. Oral medication of liv-52 bolus (a herbal liver tonic containing Himsra, Kasani, Arjuna, Kakamachi, Mandura bhasma, Biranjasisha, Jhavuka and Kasamarda, Himalaya Drug Company, Bangalore) and digestive enzyme were offered through feed and ripe banana which she partially accepted. On 26.5.07 she was separated from the male for a better assessment and management. Loss of appetite and constipation continued despite all medication. Parenteral neohepatex (proteolysed liver extract having vitamin B 12 activity, Biological E. Limited, Hyderabad) 10ml was injected through blow pipe. On 27th May the rhino was wallowing in the enclosure but inappetance, dullness, flatulence, tenesmus of anal sphincter and uterine discharge were noticed again, and on 28th May she was found dead (Fig. 1 & 2*).

At necropsy, pale lungs with small sized papillomatous growths attached to the border, enlarged heart with endocardial haemorrhage, pale liver with a few necrotic patches, pale kidneys and blood stained fluid in the peritoneal cavity were observed. There were two large growths of about 2 feet diameter on both the uterine horns weighing approximately 25 kg each which occupied most of the abdominal space exerting pressure on the adjacent visceral organs (Fig. 3, 4, 5*). Histologic examination revealed glandular pattern of cuboidal to columnar cells arranged irregularly (Fig. 6*). The mitotic figures were low to moderate. Considering multiple occurrence and highly irregular pattern of the growth it was considered to be an adenocarcinoma.

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(*See Web supplement for images at www.zoosprint.org)

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Fig. 1

Fig. 2

Fig. 1 & 2. Showing dead Rhinoceros

Fig. 3. Showing uterine tumour

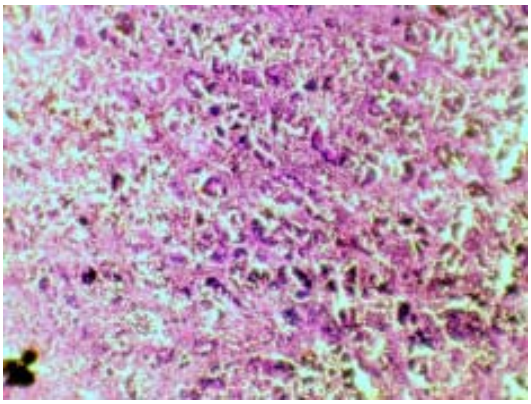

Fig. 6. Photomicrograph of the adenocarcinoma in one horned rhino. Note the glandular pattern of the neoplastic growth H&E 10X

Fig. 4

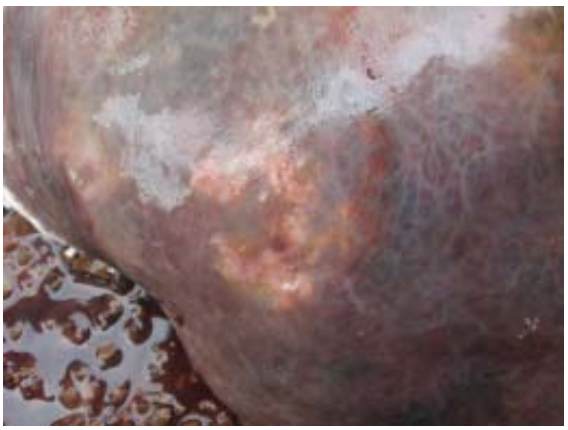

Fig. 5

Fig. 4 & 5. Showing necrotic foci and metastasis in liver

Pasteurellosis in White Goose

S. Sathasivam[1], Pathan Nasurallah Khan[2], K. Senthilkumar[3*], Mytheen Fathima[3], S. Ramesh[4], and M. G. Jayathangaraj[5]

Fowl cholera or Avian Pasteurellosis is an infectious septicemia disease of wild and domestic waterfowl caused by *Pasteurella multocida*. The disease was reported in several species of cage birds (Mehrotra *et al*. 2000, Sawada *et al.* 1999). This paper documents a sporadic case of fowl cholera in goose at Arignar Anna Zoological Park, Chennai.

A two year old white goose found dead in the enclosure and brought to the Zoo hospital at AAZP. Post mortem examination revealed petechia hemorrhages in heart, trachea, lung and ecchymotic patches were seen in the serosal surfaces of abdomen, moderate congestion of intestinal musosa, hepatomegaly and on the surface of the liver numerous yellowish pinpoint necrotic foci were observed. Proventriculus and crop were found to be empty. And a sign of catarrhal enteritis was observed. Mild congestion was noticed in the spleen and kidney.

Microscopical examination of heart blood and lung impression smears revealed the presence of bipolar organisms. Cultural examination of heart blood, lung and liver exudates revealed the presence of *Pasteurella multocida*. Mehrotra *et al*., (2000) reported that Pasteurellosis either pneumonic or generalized septicaemic form, which could cause heavy morbidity and mortality amongst the birds due to stress by inclement weather or other factors or some other factors. Sawada *et al*. (1999) reported 18 out breaks of acute fowl cholera occurred in myna birds, wild ducks, green pheasants, copper pheasants, geese, laying chickens and broiler chicken in Japan.

Fowler (1992) opined that typical septicaemic lesions are observed in birds dying of fowl cholera.

Keeping in view of the impact of the disease, the following prophylactic measures were taken immediately.

1. All the birds were given with Broad spectrum antibiotics (Enrofloxacin @5 mg per kg body weight) for 3 days
2. All the birds were protected from inclement weather by providing proper shelter, bedding etc.
3. Bleaching powder and disinfectants was sprayed in the enclosure.
4. Water pond was cleaned and water purifiers were added.

After this preventive measure, further incidence of death was not observed.

It is known that the Pasteurella organisms are opportunistic pathogens, which are commonly present in the respiratory tract of animal and birds without causing the diseases and multiply to produce the diseases during stress due to overcrowding, change in weather, transportation or starvation etc., Mehrotra *et al*. (2000).

In this present case, inclement weather due to unprecedented rains during the diseases episode might have resulted in severe stress predisposing the infection.

Acknowledgement
The authors are thankful to the Chief Conservator of Forests and Director, Arignar Anna Zoological Park, Chennai.

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Isolation of Mixed Infection of Staphylococcus aureus from Bumblefoot in a Goose

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Bumble foot is a commonly occurring infection in poultry, water birds. It is a very common pathogen caused by *Staphylococcus aureus*, which is a Gram Positive bacteria. It causes localized infection of foot, with bulbous swelling of the footpad and surrounding tissues.

Clinical history: A flock of three geese were maintained at Japanese Encephalitis Laboratory, Veterinary Biological & Research Institute, Hyderabad for the purpose of Haemagglutination Inhibition test for testing animal and human sera samples for Japanese Encephalitis and Dengue. One of the birds was not active, off-feed and limping while walking. It was a unilateral case. On observation, it was found that swelling was enlarged and the base of the foot and tissue between the toes become distended at plantar region, which is hot, painful on touch. The next day itself swelling was ruptured due to continuous movement of the leg by the bird, which showed continuous bleeding from

the affected area. The bird became lame and had a diminished appetite. The swelling was completely evacuated by pressing to remove the exudates formed. A blood swab was collected and sent to a microbiology lab for isolation, culture and sensitivity of the organism.

In the microbiology lab culture and sensitivity tests were performed. A sachet of Nitrofurantoin was available in lab, which was given at the rate of 5mg per kg body weight for 5 days. The ruptured abscess was drained by pressing and the area was cleaned by tincture of iodine and applied tincture iodine with Johnson adhesive tape and covered with polythene cover to prevent continuous wetting of foot. Like that for 3-4 days wound area was cleaned and dressed. The goose treated with antibiotic and along with supportive care was taken to improve the condition.

Prevention and control: The hygiene practice was followed in the JE lab to eliminate further infection to other birds. The infected bird was isolated and treated separately. Rotating the runs and removing the birds to a clean well drained yard are recommended as a preventive measure.

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Sighting of Bar-headed Geese *Anser indicus* (Latham) in the Mogral Puthur Estuary, Kerala

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Mogral Puthur Estuary is one of the most important estuaries in Kasaragod district. The Mogral River is originating from the forests of Kantur in Karnataka border. After flowing for about 30km downwards, near Railway bridge, the river abruptly turns south forming a long stretch of backwaters about 4km in length. Finally near Mogral Kadappuram it discharges water to the Arabian Sea. The sea mouth and the adjacent areas are covered with a lush growth of mangrove vegetation. This Mangrove vegetation is dominated by species such as *Avicennia officinalis*, *Acanthus ilicifoius*, *Rhizophora mucronata*, *Aegiceras corniculatum*, *Excoecaria agallocha* etc. The mudflats, sandy beaches and the mangrove vegetation provide good habitats for shorebirds, gulls, terns and other waterfowls. As part of Asian water fowl census on 26th January 2009, the birds of Mogral Puthur Estuary were observed. A small group of Bar Headed Geese (six individuals) *Anser indicus* (Latham) was sighted on fresh water near the mangroves at an around 7.00 am. The birds seemed to be very actively swimming and feeding there. These Geese were watched for around half an hour.

Sight records of Bar- headed Goose are few from Kerala. Ali (1969) did not record this species in Kerala. In 1987 one bird was recorded from Kadalundy by D.N. Kurup (Neelakantan et al. 1993). Praveen & George reported three sightings of these birds during July 1999 and two records during January 2000 at Walayar dam. K.V. Eldhose spotted five Bar-headed Geese at Purathur, Bharathapuzha estuary, in December 2005. Again P.P. Sreenivasan (2006) spotted six birds at Kole Wetlands, Thrissur district. This species was last recorded from Kumarakam on 12th January 2009 at an around 7.30 am (Binoy K.M. Verbally). He reported seeing only one in flight and it landed in small paddy field.

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