

MORTALITY IN GHARIAL (*GAVIALIS GANGETICUS*) HATCHLINGS AT JAIPUR ZOO

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Male and female gharials are being kept together in water pond at Jaipur Zoo. During the period of two years, i.e., 1997-98 and 1998-99 from July to November, mortality in gharial hatchlings was recorded. There was history of sudden death in the age groups about 10 days to four months. The animals failed to show any significant symptom before death. Following hatching the animals were kept separately in small cages measuring about 2x2 ft., made up of wood with sand bedding. The hatchlings had free access to water.

Post-mortem examination of hatchling carcasses showed congestion and haemorrhages at umbilical region in very young animals. There was marked deposition of yolk also. Yolk deposits were absent in one-and-half month olds. All vital organs showed severe congestion and patchial haemorrhages. Out of 17 carcasses examined, about six revealed the accumulation of foul smelling fluid in abdominal cavity. All animals were being fed with small fresh water fishes manually. The impression smears of freshly cut edges of different visceral organs were stained

Table 1. Number of bacterial isolates recovered from postmortem examination of 17 gharial hatchlings.

Bacterial genera	Viscera (17)*	Water (6)*	Soil (6)*
<i>Staphylococcus</i> sp.	3	-	-
<i>E. coli</i>	17	6	6
<i>Pseudomonas aeruginosa</i>	11	6	6
<i>Corynebacterium</i> sp.	8	2	3
<i>Bacillus</i> sp.	14	6	5
Mycotic agent (Fungus)	6	6	6

* Number of samples examined.

with gram's stain, methylene blue stain and giemsa's stain to record the presence of bacteria. Simultaneously, with the help of sterile swabs, biological samples were collected from freshly cut edges of vital organs and from abdominal fluid for bacterial cultural examination. All samples were streaked on Nutrient agar, McConkey agar and Sabouraud agar media. The inoculated plates were incubated at 37°C and the bacterial growth so obtained was subjected to generic and species identification tests as per standard microbiological procedures. The pure culture isolates were also subjected to determination of antibiotic sensitivity pattern against a set of 10 antibiotics and chemotherapeutic agents.

Bacteriological cultural examination resulted in the isolation of a multitude of organisms indicating septicaemia. The numbers of samples examined and number of bacterial isolates identified along with the demonstration of mycotic agents are given in Table 1. The antibiotic sensitivity pattern and number of isolates resistant are given in Table 2.

Apart from isolation and identification of bacterial and mycotic causal agents from the carcasses, attempts were also made to screen soil and water samples for demonstration of the presence of similar bacterial agents in soil and water as source of infection.

Table 2. Antibiotic sensitivity pattern of bacterial isolates recovered from carcasses of gharial hatchlings

Antibiotics	<i>E. coli</i> (20)*	<i>Pseudomonas</i> sp. (10)*	<i>Coryne-</i> <i>bacterium</i> sp. (10)*	<i>Bacillus</i> sp. (10)*	<i>Staphylococcus</i> (3)*
Ciprofloxacin	4	5	1	5	0
Norflox	7	5	1	5	0
Cloxacillin	10	4	3	4	1
Chloramphenicol	4	4	4	4	0
Trimethoprim	12	7	3	7	1
Oxytetracycline	12	9	4	7	1
Nitrofurantoin	9	4	3	4	0

* Number of repeats.

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Saprophytic soil and water bacteria were commonly encountered in carasses of gharial hatchlings along with human and animal gut flora. *Escherichia coli* (17), *Pseudomonas aeruginosa* (11), *Corynebacterium* sp. (8), *Bacillus* sp. (14) and *Staphylococcus* sp. (3) were isolated and identified as major causes of septicaemia. On Sabouraud agar medium only six samples yielded mycotic growth. Similar bacterial and mycotic causal agents could also be recovered from water and soil samples suggestive of the source of infection.

Similar observations have been made by Arora and Kumar (1985-89) who isolated *Corynebacterium bovis*, *Pseudomonas aeruginosa* and *E. coli* from digestive contents of dead gharial (*Gavialis gangeticus*) hatchlings kept at Crocodile Rehabilitation Centre, Kukrail (UP).

The bacterial isolates from carasses, soil and water were found to be highly susceptible to commonly used antibiotics like ciprofloxacin, norflox, and chloramphenicol in comparison to oxytetracycline, cotrimazole, cloxacillin and nitrofurantoin.

The present incidence of mortality due to septicaemia in gharial hatchlings, suggests that the gharials need fresh running water as opposed to the present stagnant pond system.

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SURGICAL EXCISION OF GRANULOMA IN AN INDIAN STAR TORTOISE (*GEOCHELONE ELEGANS*)

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Tumour removal, laceration repairs, abscess excision and hernia repair are all performed in reptiles in the same manner as in mammals (Jacobson, 1981).

A 26 years old female Indian Star Tortoise (Case No. 4905/454, Dt. 26.ii.1999) weighing 3.5 kg. and kept as an exotic pet was referred to the University College Hospital for tumorous growth in the neck. After clinical examination, it was decided to go for excision of the tumour. Accordingly, the turtle was sedated with Ketamine at 44 mg/kg. administered intramuscularly and the site was prepared for aseptic surgery. The tumour (Areca nut size) was excised by giving two elliptical incisions. Bleeders were clamped and ligated with #2/0 chromic cat gut. Skin sutures were taken with cotton thread using horizontal mattress suture pattern. Post-operatively, gentamicin at 10 mg/kg. was given intra muscularly for three days. The suture line was dressed daily with povidone-iodine spray. On 15th post-operative day sutures were removed. Histopathological findings revealed focal necrosis and granulomatous lesion.

Abscess occur frequently in turtles especially on the neck. The sharp defects of the free edge of the carapace may lead to trauma of the skin of the legs and to abscesses. A provisional therapy of gentamicin at 10 mg/kg. every 48 hours is advised for chelonians. Chronic granulomatous lesions of fungal origin are reported in chelonians (Zwart, 1986).

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