A Case Study on Indian Vulture (*Gyps indicus*) rescued in Orchha, Madhya Pradesh, India

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Abstract

Once in millions, the vultures are now struggling for their survival. Scientists have reported 92-99% decline in vulture population in mid 1990s. Various reasons have been given for their rapid and unanticipated decline. A case study was done on a juvenile of Gyps indicus which was found in almost unconscious state in Cenotaphs at Orchha, Madhya Pradesh, India, during the month of June, 2009. The vulture was restless, breathing heavily and showed neck dropping. It was very weak, unable to stand for long and incapable of flying. After twelve days of nursing with ORS, water and proper food, finally the juvenile recovered and flew away. There has been similar rescue operations in Jodhpur as insufficiency of good and safe nesting sites reduces the breeding success and increases the chick's mortality. In this case the juvenile was weak due to lack of food availability and extremely high temperature.

Key words: Juvenile, vulture, *Gyps indicus,* heat stroke, diclofenac

Introduction

Once in millions, the vultures are now struggling for their survival. Scientists have reported 92-99% decline in vulture population in mid 1990s (Prakash, 1999). What was once described as the most prominent bird species in the world, no longer holds this title (Gentleman, 2006). Population declines have been associated with high rates of mortality affecting all age classes (Prakash 1999, Gilbert *et al.* 2002), with annual mortality estimated between 22% and 50% (Green *et al.* 2004).

Like other parts of India, Orchha too had large vulture population until they started decreasing unexpectedly in mid-90's. Diclofenac use was banned in Orchha in March 2006, as declared by Indian Government. But vultures failed to gain attention inspite of their swift decline leading them towards extinction.

Study Area

Orchha lies in Tikamgarh district of northern Madhya Pradesh. It lies between the Jamni, a tributary of Betwa and Dhasan rivers. It extends between the latitude 24° 26' and 25° 34' N and between 78° 26' and 79° 21' Longitudes (fig. 1). The total geographical area of Tikamgarh District is 5048.00 Sq. Km. The year may be divided into four seasons. May is generally the hottest month with mean daily maximum temperature at about 43 degree celsius and low 29 degree celsius. On individual day temperature may rise upto about 47 degree Celsius. The driest part of the year is summer season when the relative humidity is less than 20 percent in the afternoons.

Case Study

6-18 June 2009

DAY 1: 6th June 2009, Saturday-

Mr. Shymlal, Caretaker, Archaeological Department, Orchha provided information about a sick vulture that had fallen down from its nest, while learning to fly (Time: 12:15 pm). The temperature was very high, about 44°C. The vulture was approximately 5 month old juvenile, *Gyps indicus*. On



Fig 1: Map of study area



Fig 2: Juvenile found in unrecoverable condition

reaching the place, the juvenile was found sitting in the hedge. It was kept in the shade. It collapsed there and was breathing heavily. After 10-15 minutes, water was kept in an earthen container. It was prompted to drink water. It tried to drink water but was unable to take it. It was covered with a wet cloth. On close examination a small wound mark was seen on the front part of neck. No other injury was seen. Fecal matter was collected (greenish in color). It was observed for 4 hours. During this time, it dropped its neck very often and closed its eyes. The neck dropping behavior was previously thought to be a sign of illness but it is now thought to be a mechanism of thermoregulation as well as a predatory avoiding strategy

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Fig 4: Juvenile examined for injuries

Fig 5: On 2nd day, found sitting at the same place

especially when in close proximity to humans (Watson *et al.* 2008). Mr. Shymlal was instructed to keep more water for it before closing the monument.

DAY 2: 7th June, 2009 (Sunday)

Next day, during morning time around 9:30 am, the juvenile was found sitting at the same place where it was left. Fecal matter was spotted at 2-3 places but could not be collected. The water bowl was filled with ORS (8 teaspoon sugar + 1 teaspoon salt in 1 litre water) (fig 5). It drank water at regular intervals (fig 6). It was observed for 2 hours. The forest officials were also informed about the vulture's condition and they permitted to nurse it. Dr. Dixit (Veterinarian, Orchha) was called with the Forest Officials. After examining the juvenile he said it was a case of heat stroke and lack of food needed during the flight period and also guided us for the treatment of heat stroke, besides providing food to the juvenile.

The vulture dropped its neck and showed symptoms of heat stroke due to high temperature. This was due to extremely high temperature ($45^{\circ}C$) and hot local winds, too. Its condition was almost same as previous day. Two ectoparasites were collected during examination. It was kept under the tree shade instead of the monument. Before leaving it was placed back in the monument.

DAY 3 and 4: 8th (Monday) & 9th June 2009 (Tuesday) Some chicken was fed to the juvenile, which it ate at once.. It tried to walk and rested at intervals with neck dropping and eyes closed (fig 6). Its wings and head were sprayed with water to relieve it from the high temperature. The juvenile enjoyed this and showed no counter attacks. ORS was filled in the earthern water bowl. In that area 3-4 water bowls were kept, but it was astonishing to see that the juvenile drank water only from the bowl which was filled with ORS. It walked upto the other water bowls but to drink water it returned back to the first one.

DAY 5: 10th June 2009 (Wednesday)

Mr Shyamlal informed that the juvenile made an attempt to fly but failed. Chicken was provided to it and water was kept with ORS (fig 7). A mongoose that died in road accident was also given. It consumed only half of it.

It was observed that it did this more often when humans were around. Neck dropping is exhibited when a solitary vulture is approached by humans but, while feeding in flocks, this behavior is not usually exhibited, even when humans approach (Pande *et al.*, 2011). Its wings and head were wetted with water to relieve it from the burning high temperature, as previous days. Activities were same as previous days.

Fig 6: Rested at intervals with neck dropped and eyes closed

Fig 7: Towards recovery

Fig 8: Cheerup! the worst is yet to come! - Philander Chase Johnson

Fig 9: The Final Flight

DAY 6: 11th June 2009 (Thursday)

It took a small flight and sat on the lower portions of the monument (Cenotaphs). Kept sitting there and returned back for feeding (fig 8). It kept walking all around the monument and rested in shade.

DAY 7: 12th June 2009 (Friday)

It looked absolutely healthy. It took flight like other juveniles (fig 9). Once in a day time (mostly after 2 pm) it came under the tree for feeding. Food was left under the tree after 1 pm

DAY 8-13: 13th -18th June 2009

Food was kept for it daily. If this juvenile did not come as per the normal time flesh pieces were kept on the upper floor of cenotaphs, where other juveniles finished it in no time.

Conclusion

The whole study shows that the juvenile suffered from heat stroke as well as lack of proper food. The temperature variations also seemed to have contributed to its critical condition. It rained 4-5 days before this incident and after that the temperature rose upto 44-45°C with strong local winds. The juvenile, already weak and due to scarcity of food failed to cope up with the high temperature. This case shows that neck dropping in vultures may not be correlated

to poisoning in all cases. fig 8 shows that the juvenile adopted neck dropping behaviour, which was considered as symptom of avian gout after which the bird died. But here inspite of this neck dropping, the juvenile recovered and survived. Neck dropping was seen in other healthy adults as a response to high temperature. Some studies suggest that this may be a thermoregulatory response since this posture is seen mainly during hot weather. (Vulture Territory Facts and Characteristics: Asian White-backed Vulture).

In the last few years, the breeding population of long-billed vultures and their chicks are facing serious threats of habitat loss and other biotic pressures (Chhangani, 2003). The observations divulge that juveniles while ready to take flights face various hurdles such as food availability, climatic challenges, injury due to falling from nests and attacks by dogs or other animals. It is therefore suggested that the breeding sites should be surveyed and monitored regularly from December (eggs are laid) to June (juveniles ready to fly) so that if any injured bird is seen, it can be hospitalized and rescued. This is very important from conservation point of view since vultures are slow breeders, laying a single egg in a year. The rescue programmes for eggs and juveniles will surely increase the breeding rate success of these critically endangered scavengers and help them in their journey towards survival.

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