



SHORT COMMUNICATION

Successful Hand-Rearing of a Maternally Abandoned Bengal Tiger Cub (*Panthera tigris tigris* Linnaeus, 1758) at North Bengal Wild Animals Park, Siliguri, West Bengal, India

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ABSTRACT

This study documents the management of a maternally abandoned Bengal tiger (*Panthera tigris tigris* Linnaeus, 1758) cub that was rescued under severely distressed conditions, born at North Bengal Wild Animals Park, Siliguri, West Bengal, India. After that, the tiger cub was successfully hand-reared by a team of veterinarians and animal attendants. This practical experience of hand-rearing a tiger cub provides critical insights into veterinary protocols for managing maternally rejected tiger cubs, haemoparasitic infections in neonatal tigers, and successful rehabilitation strategies in zoological environments, contributing valuable knowledge to captive tiger breeding programs and conservation efforts.

HIGHLIGHTS

- Studied a case of successful hand-rearing of a Bengal tiger cub.
- Best managemental practices for haemoparasitic infections in Bengal tiger cub.

Keywords: Bengal tiger cub, maternally abandoned, haemoparasite infection, captivity, zoo

The Bengal tiger (*Panthera tigris tigris*, Linnaeus, 1758) is among the most iconic carnivores that can be found in parts of the Indian subcontinent (Kumar, 2021). There are only ten tiger range countries in the world, and the estimated number of tigers worldwide is between 3,726 and 5,578 (Goodrich *et al.*, 2022). Zoos are regarded as leading conservation organizations and scientific establishments that are applied to both educational and research purposes (Vashisth *et al.*, 2023). Research on tiger conservation is of paramount importance now that zoological breeding programs worldwide have gained a central focus due to the declining number of rescued tigers (Pitsko, 2003).

Hand-rearing of orphaned or abandoned tigers has become an important practice in zoological breeding and conservation programs, ensuring the care of a species, especially when the biological mother passes away or is unable or unwilling to care for her offspring. It becomes

very challenging task to save the life of a newborn orphan cub with a serious illness and also if the animal is altricial species (Doley *et al.*, 2025). Furthermore, hand-rearing presents various problems affecting the physiological, psychological, and nutritional development of the cubs. This review includes the methods, techniques, and lessons learned during the hand-rearing of a Bengal tiger cub in a zoo setting. A study conducted in Bahawalpur zoo in Pakistan, between 2003 and 2014, concluded tiger cub mortality was very high in captivity (Ali *et al.*, 2017). Similarly, an examination of data from 1964 to 2015 at Nandankanan Zoological Park in Bhubaneswar, Odisha,

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revealed that inbreeding was responsible for a significant portion of tiger cub death (Mishra *et al.*, 2017). Tigers from Ranthambore Tiger Reserve have been shown to have a survival rate of up to 85% before one year of life and 79% between 12 and 24 months (Singh *et al.*, 2014). Similarly, survival rates of 66% in the first year and 83% in the second year were recorded in Nepal's Chitwan National Park (Smith and McDougal, 1991). Tiger cubs are frequently raised by hand in reaction to particular situations, such as maternal neglect, harm, or death. Supporting the cub's growth and ensuring it reaches an age where it may be restored to naturalistic settings or included into breeding programs are the objectives of hand-rearing, but it can be an extremely exhausting process. In order to replicate the natural care given by a mother tiger, it is necessary to comprehend the tiger's developmental requirements and use specific knowledge (Derrickson, 1992).

On June 1, 2024, a Bengal tigress named Kika delivered four cubs at North Bengal Wild Animals Park (Bengal Safari) in Siliguri, West Bengal, India. While the remaining cubs posed various difficulties, two of them were stillborn. On the day of birth, Cub K1 was right away rejected by her mother, and then cub was immediately taken to the park's Veterinary Hospital. Cub K2 was housed with her mother till 18 days. But, the tiger cub K2 developed symptoms of dehydration and weight loss as a result of her mother's poor care, which led to her transfer to the Veterinary Hospital on June 19, 2024. At admission at the Veterinary Hospital, K2 weighed approximately 1,560 grams with a body temperature of 97.3°F and sex determined as female. The heart beat was recorded as 25-30 beats per minute and hence heat treatment was given to the tiger cub K2. Then the cub was first fed a specially prepared commercially available pet lac milk substitute as part of the hand-rearing procedure. Regular body weight and health checks of the cub were monitored on daily basis by the Veterinarians of the Park.

At the age of four week, cub K2 became positive for Haemotropic *Mycoplasma sp.*, *Babesiosis sp* and *Ehrlichiosis sp*, with high body temperature recorded above 104°F. Hence DCM treatment (Doxycycline @ 10 mg/kg body weight, Clindamycin @ 7.5 mg/kg, Metrotrnidazole 1ml) was given for 28 days with iron tonic, liver tonic, calcium, amino acids, kidney supplements and multivitamin supplements (1 tab/day for) all for 30 days. After 21 days of treatment again blood samples

were collected from the tiger cubs and tested negatives for haemotropic *Mycoplasma sp*, *Babesiosis sp* and *Ehrlichiosis sp*, hence Clindamycin and Metrotrnidazole drug treatments were stopped.

The cub K2 showed consistent pattern of normal growth which is given in detail in Table 1. Biofel PCHR Vaccine 1st dose was administered at the age of 8weeks. First deworming was done with pyrantal pamoate tablets when the tiger cub K2 was 10 weeks old. Constipation was reported at the age of 11 weeks; hence dulcolax suspension was used through rectal passage of tiger cub K2. The cub K2 recovered from constipation problems through this treatment. 2nd dose of Biofel PCHR was administered at the age of 12 weeks.

At this age, the cub's high body temperature (104.2°F) was recorded, hence Melonex suspension (0.8ml) used for 1 day and doxycycline 10 mg/kg body weight administered for 14 day. The cub's diet was gradually supplemented with minced chicken and beef meat after 14 weeks of age, which was progressively offered to encourage the transition to solid food. Careful monitoring is very vital during this transitional phase to prevent gastrointestinal problems or nutrient deficits in tiger cub.

1st and 2nd dose of CDV Vaccine were administered on 13 and 16 weeks of age of the tiger cub K2 respectively. At the age of 18 weeks stool analysis was carried out. *Isospora spp* (+++) was present in stool smears, hence deworming was done with pyrantel pamoate tablet. 3rd dose of CDV Vaccine was administered at the age of 19 weeks.

Socialization is another important aspect of successful hand-rearing of tiger cubs. Although tigers are solitary by nature, during the first few months of life, cubs depend on their mothers for socialization. Animal keepers may play very crucial role in developing proper behavioural skills in tiger cub, such as play behaviour, fear responses, and aggression management (Derrickson, 1992). Therefore, at the age of 24 weeks, the cub was brought back into the Park's tiger night shelter where other tigers were present. Also, specially made enrichment tools were provided to the tiger cub K2. The goal was to make sure the cub wouldn't have any serious behavioural problems like spacing or any kind of stereotype behaviour pattern. Throughout the hand-rearing process, Veterinarians conducted regular health check-ups to monitor the cub's development.

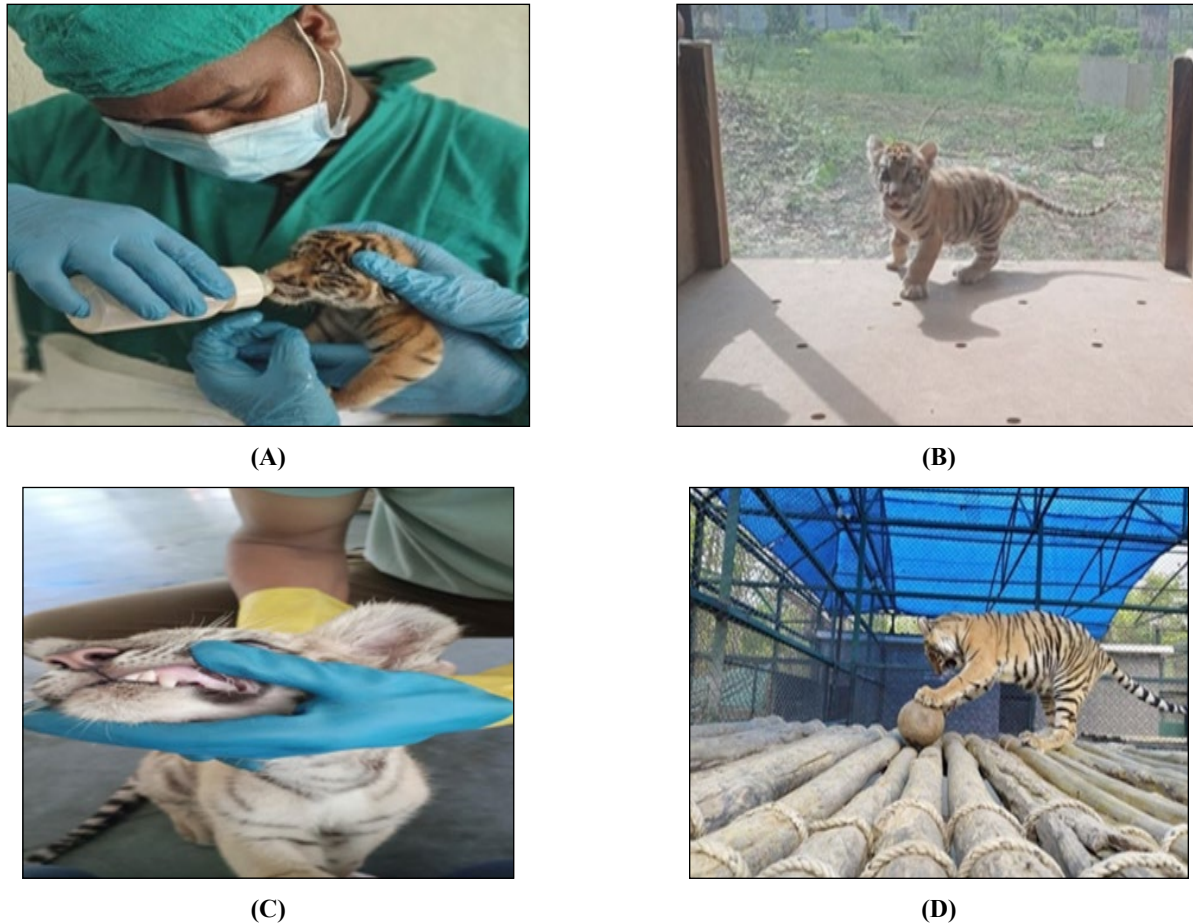


Fig. 1: Tiger cub K-2 at different stages in time following birth: **(A)** This photo was taken three weeks after the animal was moved to the Veterinary Hospital, **(B)** Tiger cub K-2 at the age of two months, **(C)** During health check-up at the age of four month and **(D)** During enrichment session at the age of six month

By adhering to proper vaccination schedules, the cub was protected from common zoonotic infections, and internal and external parasites were properly treated (Foley *et al.*, 2017). Contributing to our knowledge of captive tiger breeding and husbandry practices, this study provides valuable insights into the management and treatment protocols for rejected or orphaned tiger cubs in zoological settings.

A balanced diet of nourishment, sociability, and psychological stimulation must be the top priorities of hand-rearing in order to guarantee that the cub grows up to be a healthy and well-mannered adult tiger. This study documents the successful hand-rearing of a critically young tiger cub (*Panthera tigris tigris*, Linnaeus,

1758), that was an orphaned neonate just 3 weeks after birth at North Bengal Wild Animals Park, India. One of the most important parts of hand-rearing carnivores, especially large carnivores like the Royal Bengal Tiger, is providing nutritional support. Replicating the nutritional composition of a tiger cub's mother's milk—which is high in proteins, lipids, and antibodies—becomes crucial in zoo settings when the mother is not available. The milk supplement contained key nutrients that helped support the cub's rapid growth (Hedberg *et al.*, 2011). The enclosures were gradually expanded to include more space, climbing frames, scratching poles and more other realistic environments that encouraged physical activity, such as climbing trees and swimming pools.

**Table 1:** The details of food consumption, frequency of feeding, average weight gain and medical intervention of the Bengal tiger cub K2 over the 24 weeks of age at North Bengal Wild Animals Park (NBWAP)

Age in week	Mean Formula milk consumption per day (ml)	Mean meat consumption per day (gm)	Average frequency of feeding per day	Body weight (gm)	Increase in body weight (gm)	Remarks
01	—	—	—	—	—	Tiger cub K2 was housed with her mother, Kika.
02	—	—	—	—	—	Stunt growth was observed.
03	176.14	—	6	1720	350	The tiger cub K2 showed extreme weakness with low body temperature (96.8° F).
04	198.57	—	6	2010	290	Tiger cub K2 became positive for <i>Babesiosis sp.</i> and <i>Erlichiosis sp.</i>
05	224.29	—	6	2320	310	—
06	239.29	—	6	2480	160	—
07	323.57	—	6	2990	510	Bacterial ear infection was observed.
08	420.71	—	5	3570	580	Vaccine Biofel PCHR 1 st Dose administered.
09	425	—	5	4060	490	—
10	359.29	—	5	4420	360	Deworming was done.
11	425	—	5	4830	410	Constipation was reported.
12	297.14	—	4	4900	70	Biofel PCHR 2 nd Dose administered.
13	437.86	—	4	5460	560	Vaccine CDV 1 st Dose administered.
14	455.71	—	3	5960	500	Minced meat provided for the first time to the cub.
15	203.4	122.5	3	6040	80	—
16	—	654.29	2	6700	660	Vaccine CDV 2 nd Dose administered.
17	—	904.29	2	7975	1275	—
18	—	1000	2	9455	1480	Stool analysis showed <i>Isospora spp.</i> (+++).
19	—	1022.86	2	10830	1375	Vaccine CDV 3 rd Dose administered.
20	—	1010	2	12195	1365	Deworming was done.
21	—	1134.29	2	13550	1355	—
22	—	1175.71	2	14555	1005	—
23	—	1224.29	2	15430	875	—
24	—	1490	2	16420	900	At 24 weeks of age, K2 was successfully shifted to the tiger night shelter.

The authors have no conflicts of interest to declare that are relevant to the content of this article.

CONCLUSION

This case study shows the value of expert animal care and the possibility of effective conservation breeding initiatives. It takes a sophisticated and multifaceted method to successfully hand-raise a Royal Bengal Tiger

cub in a zoo, combining proper diet, veterinary care, socializing, and behavioural enrichment. Hand-reared cubs can develop into healthy, behaviourally stable adults if a well-organized, scientifically informed rearing regimen is followed.

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