

TREATMENT AND MANAGEMENT OF AN ELEPHANT CALF WITH A HEAD INJURY

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Pinnawala Elephant Orphanage is a conservation and breeding centre for Asian Elephants in Sri Lanka managed by the Department of National Zoological Gardens. It was started as an elephant orphanage in 1975 with four baby elephants. Since then wild elephants that were injured, abandoned or separated from the herd have been brought to this place for refuge and care. From these wild elephants a breeding program was started. Presently, Pinnawala Elephant Orphanage has a very successful breeding program with the animals of second generation; there are 70 elephants including 22 born in captivity. The first birth at the orphanage was reported in 1984. *Binari* is the 20th calf born in the Orphanage and the first calf of the cow *Shermi*. Her birth weight was 103kg and the shoulder height was 88 cm.

History: *Binari*'s birth was reported on 19 September 2001 early morning with a complaint of bleeding from the trunk. *Shermi* had been very aggressive at the time of parturition and had tried to attack other elephants tied close to her and staff members who tried to assist her. Finally when she calmed down the mahouts helped the baby to stand. The calf was alert but bleeding from the trunk was detected. On examination, bleeding and oedema were observed over the left eye and bruises on knees and elbows. Even though the calf was directed to suckle she could not raise her head. It was suspected that these complications were due to a head injury at the time of birth.

Clinical signs, treatments and management: As soon as the bleeding was observed treatment was initiated. Ice packs were applied on the forehead to reduce internal bleeding. Dexamethasone 50mg (Ilium Dexapent[®]), high doses of Vitamin B complex (Maxiplex[®]) and Vitamin C injections were given twice a day to control the inflammation of the brain and to enhance the regeneration of damaged nerve cells. As a prophylactic therapy Ampicillin was administered intravenously three times a day.

The dam was anxious to feed but the baby did not respond so colostrum was drawn and the baby was fed with a tube fixed to a bottle at two-hour intervals. In addition half cream milk powder (Lactogen formula 2) was also fed.

Six hours after birth the calf became depressed and started anti-clockwise movements. A wooden crush was made to prevent this continuous circling. Twelve hours after birth

animal fell down and started getting short convulsions every 2 hours. With time, the duration of convulsions got prolonged. Diazepam 30mg and Phenobarbitone 300mg were started intravenously to control convulsions. 4% dextrose saline (B/Braun) and vitamins were administered as supportive treatments. Ampicillin 2.5g and Dexamethasone 50mg were also continued. On the third day the calf refused to drink milk and developed uncontrollable convulsions. Body temperature rose up to 105°F and severe dehydration was noticed. The body temperature was controlled using ice packs, electric fans and intravenous fluid therapy. Diazepam 50mg and phenobarbitone 300mg were continued to control convulsions. Intravenous amino acid (Aminoplasmal[®] -10%E) 250ml and 25% dextrose were also administered with 4% dextrose saline and vitamins as supportive treatments.

As the condition of the animal started deteriorating rapidly a third generation cephalosporin, Ceftriaxone 2g (Rocephin[®]) was started intravenously. The calf was separated from the mother and transferred to the Veterinary Teaching Hospital of the Faculty of Veterinary Medicine and Animal Science in Peradeniya.

After an hour of journey the calf's heart rate had increased up to 90/min and respiration was irregular and rapid. The body temperature started reducing. Uncontrollable convulsions, which lasted for about 15mins, were noticed. Antibiotics and supportive treatments were continued. The calf was fed with colostrum and Lactogen formula 2 milk through a stomach tube. Oxytocin 10 IU (Evatocin[®]) had to be given to the mother 10 minutes prior to milking to stimulate the milk let down with the removal of the calf.

On the fourth day laboured breathing was noticed in the morning. The calf continued convulsions but the bleeding from the trunk had stopped. Therefore, it was decided to start administering 250ml of Mannitol (Osmofundin[®]) in slow intravenous drip to reduce suspected brain oedema. Ceftriaxone 2mg, Phenobarbitone 300mg and fluid therapy were continued. In the evening 125ml of Mannitol (Osmofundin[®]) and other treatments were continued.

Considerable improvement was detected on the fifth day. The temperature was normal. Convulsions, which were occurring every two hours had reduced to three times a day. The convulsions were mild and lasted only a few seconds. The calf started to suckle so she was fed 1lt of milk per feeding using a feeding tube. Mannitol (Osmofundin[®]) 200ml, antibiotics and supportive treatments were continued. The body weight of the calf had reduced from 103kg to 70kg.

On the sixth day animal stopped convulsions and continued to suckle milk. The body temperature, heart rate and respiratory rate became normal. The calf had to be kept on left lateral recumbency for all five days as she was hypersensitive and showed signs of epilepsy on the right side. So she was hoisted and kept in standing position using a supporting device made of iron. Physiotherapy and warm water fomentation were started to reduce muscle rigidity of the limbs. Pressure wounds were

cleaned with normal saline and treated with 10% Povidone Iodine (Wokadine®). Although Mannitol and intravenous fluid therapy were discontinued it was decided to continue the antibiotic treatment.

On the seventh day amount of the milk per feed was increased and the duration of keeping the animal in standing position was prolonged. Care and attention was given to the baby to improve her mental and physical status.

On the eighth day the animal was alert but started passing foul smelling diarrhoeic faeces. Prolonged antibiotic treatment was suspected for this condition which was discontinued and doubly diluted milk was fed to the calf. As the animal's condition had been gradually improving she was transferred back to the Pinnawala Elephant Orphanage. At this stage when the baby was hoisted and kept in standing position using the supporting device she could bare weight on four legs. Physiotherapy and hot fomentation were carried out routinely and a gradual improvement was observed, but weight gain in the calf was unsatisfactory. The appetite of the animal improved but the diarrhoeic condition persisted. Docile female elephants were introduced to *Binari* to facilitate interactions and to introduce gut flora. But this attempt was not very successful as other elephants got excited when *Binari* was introduced and did not accept her as they do of other calves.

The animal showed improvement and could stand without the help of the supporting device about three weeks old. Gradually the calf was made to walk with the help of the keepers. At the beginning she moved in anti-clockwise circles, but after about a week she stopped this abnormal movement. Since the body condition of the animal was very poor the quantity and concentration of the milk was increased. The animal became anorectic and on the following day started foul smelling shooting diarrhoea, so the calf was fed with oral rehydration salts (Jeewani®), king coconut and double diluted milk (Lactogen 2). Although it was possible to force feed Jeewani and king coconut, she refused to take milk.

Faecal samples were sent for laboratory investigations and the condition was diagnosed as lactose intolerance. Then it was decided to feed the calf with a lactose free milk made of Soya beans (Prosobee®). The animal's condition started improving so with added vitamins and minerals this lactose free milk was continued.

At two months of age the calf could walk with minimum support of the keeper. She refused to lie down to sleep in the night, as she was too weak to get up on her own. She was kept hoisted using the supporting device during the night to assist her in sleeping. Cungy and dissolved herbivore pellets were introduced to the animal gradually. Lactogen 2 was tried to introduce in small quantities mixed with Soya bean milk but when it was added, the calf started getting anorectic and shooting diarrhoea.

When she was about three months old a decision was taken to

remove the supporting device and the floor was cushioned with soft grass and the walls were lined with gunny bags filled with paddy husks. First the calf learnt to sleep leaning against the gunny bags and gradually she started lying down on the soft bedding and getting up without any difficulty. When the calf was five months old she started to walk without the support of the keeper. Her body weight increased up to 90kg and *Binari* started using her trunk. At this stage as she could take solid foods; fruits, grass and herbivore pellets were introduced to her normal liquid diet. The quantity of vitamins and minerals were increased with age. During the day she was allowed to mix with orphaned baby elephants as another attempt to facilitate interactions with older elephants failed. A keeper was instructed to be in close proximity to monitor the behaviour of these calves.

The calf was first taken to the river for bathing when she was six months old. After initial reluctance she gradually started enjoying her daily bath.

At 11 months of age her body weight had increased to 140kg. She is now active, alert and has a good appetite. But when she takes solids, after swallowing the juice she throws out the fibrous parts. Although she is not completely normal there is a gradual improvement. Our final objective is to introduce *Binari* to the herd as a healthy calf.

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* see Images in the web supplement at www.zoosprint.org



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