



Successful rescue and rehabilitation of an injured wild sloth bear trapped in a poacher's snare

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ABSTRACT

An adult male sloth bear of ten years of age was rescued by Karnataka Forests Department, Bellary division was shifted to Wildlife SOS, Bear Rehabilitation Centre with a severely injured left hind limb severed at the level of metatarsals. The paw was putrefied with purulent exudation and loosely hanging broken metatarsals. After immobilizing the bear with medetomidine-ketamine at 0.05 mg kg⁻¹ and 3 mg kg⁻¹ body weight, respectively the wound edges were debrided for apposition. Necrotic tissues and three remaining metatarsals were removed and four stay sutures were placed. Suturing was accomplished with 2-0 absorbable sutures and the wound was dressed with 5 % povidone iodine and vet wrap. The wound was secured with a fluid bottle, tied to the paw of the sloth bear to prevent the soiling of the wound. Therapeutic management was done using long acting antibiotics like Benzathine penicillin @ 40,000 IU kg⁻¹ q 7 days and Enrofloxacin @ 5 mg kg⁻¹ q 72 hour for 20 days. Administration of fluids at the rate of 50 ml kg⁻¹ and opioid analgesics (Tramadol @ 5 mg kg⁻¹) was done at the time of surgery. Thereafter, regular dressing was done with collagen silver sulphadiazine cream and antiseptic powder. Analgesia was achieved by oral supplementation with gabapentin @ 2 g for 10 days. Also, for the prevention of decubitus ulcers, a wooden plank was placed in the bear enclosure. After continuous dressing for 60 days the wound showed remarkable healing. Partial amputations and post-operative management are often lifesaving human interventions that become necessary in human-animal conflict zones.

Key words: Amputation, gabapentin, sloth bear, snare trap

INTRODUCTION

Melursus ursinus, commonly known as the Indian Sloth bear, is an endemic inhabitant of the Indian subcontinent with population scattered across several Indian states, but primarily concentrated in Central India and southernmost forest ranges of the Western Ghats (Yoganand et al., 2006). They are primarily confined to moist and dry deciduous forests but can also be found in moist evergreen forests, rocky outcrops, and caves (Kumar et al., 2014; Abdul and Hosseti, 2016). The Indian sloth bear has been considered as a "Vulnerable" species by the International Union for Conservation of Nature and Natural Resources (IUCN) Red List and remains protected under Schedule 1 of the Indian Wildlife (Protection) Act, 1972 (Shanmugam et al., 2008; Singh et al., 2018).

Ecological studies of sloth bear have speculated that the lower metabolic rates and high thermal conductance in them have been associated with their dense fur and myrmecophagic and frugivorous feeding habits (McNab, 1992). This adaptation has also enabled them to survive in sweltering hot climatic conditions by restricting themselves to nocturnal activities. Anatomical features such as a missing pair of upper incisors and protruding loose lips have led to them extensively feeding on termites, ants, and fruits (Shanmugam et al., 2008). Despite these evolutionary adaptations, the sloth bear population is threatened.

Since historical times, illegal sloth bear poaching has been rampant for live animal trade, bear meat, and traditional Chinese medicine. The barbaric practice of "dancing sloth bears" was

a significant reason for poaching of bear cubs by the Kalandar community for exhibition and entertainment purposes. (Shanmugam et al., 2008; Palita et al., 2014; Crudge et al., 2020). Traditional Chinese medicines used bear gallbladder and bile for treatment of cardiac problems, eye puffiness, asthma, cancer, burns, liver problems, and impotence (Feng et al., 2009). Reproductive organs of the male sloth bears were considered as aphrodisiacs and used as sex stimulants by the Pardhi-Behelia tribe.

Reports of accidental deaths of Schedule I animals from wildlife corridors and surrounding human settlements have shown a steady rise over the years, owing to the illegal installations of snare traps to protect farmlands from the nuisance caused by wild boars (Gupta, 2017). The Karnataka Forest Department has adopted several conservation efforts in collaboration with the Bannerghatta Biological Park and Wildlife SOS in rehabilitating sloth bears that fall prey to this snare culture. The current case report describes the rescue and rehabilitation of one such sloth bear that was found to be trapped in a deadly snare trap in the Bellary district of Karnataka.

CASE REPORT

Rescue operation

The present paper describes the rescue and rehabilitation of a male wild sloth bear trapped in a poacher's snare in the Bellary district of Karnataka. Wildlife SOS, in collaboration with Karnataka Forest Department, received a call from the Bellary forest range regarding a distressed sloth bear with a snare wrapped around his foot. Upon reaching the site, the rescue team observed that the snare was tightly fastened around the left foot of the sloth bear, at the level of the metatarsals with severed toes and multiple wounds on the body. After retracting the snare from the bear's ankle, the sloth bear was brought to the Bannerghatta Bear Rescue Centre (BBRC), Bannerghatta Biological Park, for further treatment and therapy.

Emergency veterinary care

Upon arrival at BBRC, the sloth bear was sedated using Medetomidine-Ketamine combination @ 0.05 mg kg^{-1} and 3 mg kg^{-1} body weight, respectively, and was subjected to complete health examination. Blood samples were collected, and radiographs of the injured left foot were taken.



Fig. 1. Sedation of the injured wild sloth bear for blood collection and radiography



Fig. 2. Injured left hind foot with severed toes and broken metatarsals

The injured leg was flushed with the hydrogen peroxide solution and dressed with collagen-based ointment and antiseptic powders, followed by bandaging to prevent contamination of the wound. In an attempt to stabilise the severely dehydrated bear, immediate treatment with fluids and supplements was initiated. Long-acting Benzathine penicillin @ $40,000 \text{ IU kg}^{-1}$ administered for antibiotic cover. Supportive therapy with anti-inflammatory drug (Meloxicam @ 0.2 mg kg^{-1}) and analgesic (Tramadol @ 5 mg kg^{-1}) was undertaken for pain management.



Fig. 3. Cleaning and dressing of the injured foot with hydrogen peroxide followed by sterile bandaging

Stabilization of the patient

The sloth bear was kept under observation for ten days during which the injured leg was regularly cleaned and dressed inside the squeeze cage. Analgesia was achieved by providing Gabapentin @ 5 mg kg⁻¹, and infection was kept under control by long-acting Enrofloxacin @ 5 mg kg⁻¹. The bear was given fruits and honey and was slowly introduced to the cereal-based porridge mixed with milk.

Surgical intervention

Surgical correction of the injured foot was necessary to remove the loosely hanging metatarsals and the surrounding necrotic tissue. The sloth bear was fasted for 12 hours before sedating with Xylazine-Ketamine combination @ 2 mg kg⁻¹ and 5 mg kg⁻¹, respectively. A series of radiographs were taken to assess the damage to the injured foot.



Fig. 4. Surgical debridement of the wound to remove surrounding necrotic tissue, and broken metatarsals

The leg was thoroughly cleaned with ciprofloxacin solution, and the remaining three loosely hanging broken metatarsal bones were retracted. Debridement of the necrotic tissues was done to facilitate apposition of the wound edges, which were sutured using absorbable 2-0 polyglycolic acid (PGA) suture material.

A total of four loop sutures were placed at the level of the ankle for securing the bandage. The sutured tissue was flushed and dressed with povidone iodine solution and antibiotic powder. Bandaging was done with sterile gauze after placement of cotton padding and covered with vet wrap. The bandaged limb was secured with a fluid bottle to prevent contamination of the wound.



Fig. 5. A three-layer compression bandage was applied over the wound after surgical procedure. Couple of stay sutures were applied to hold the bandage in position

Post-operative management

The sloth bear was housed at the sick animal room for observation post the surgical procedure. Combination course of Enrofloxacin @ 5 mg kg⁻¹ q3 days and Benzathine penicillin @ 40,000 IU kg⁻¹ q10 days was given along with antacid (Rantac 0.5 mg kg⁻¹). Analgesia was achieved with gabapentin @ 5 mg kg⁻¹ orally. Regular cleaning of the wound and dressing with silver sulphadiazine collagen-based cream and cipladine antiseptic powder was done through the squeeze cage. The sloth bear was provided with a nutritious cereal based porridge along with milk and honey and fresh fruits as enrichment. Development of decubitus ulcers was controlled by placement of a wooden plank in the enclosure with soft bedding for comfort.

RESULTS AND DISCUSSION

An injured wild sloth bear trapped in a poacher's snare was rescued from Bellary district of Karnataka and rehabilitated at the Bannerghatta Bear Rescue Centre, under the Bannerghatta National Park. Preliminary blood testing revealed that the sloth bear was severely dehydrated and anaemic with slightly elevated white blood cells. Serum biochemistry showed hypoproteinemia, elevated liver enzymes, and lactate dehydrogenase levels indicative of tissue damage along with electrolyte imbalances. Radiographic evaluation of the injured leg revealed completely severed

metatarsal bones due to the poacher's snare.

Surgical correction of the left foot resulted in gradual healing of the wound after 90 days during which the leg was regularly cleaned and dressed through the squeeze cage.

The sloth bear was provided the required nourishment with a balanced cereal-based porridge diet along with honey and seasonal fruits, which resulted in weight gain and hastened the recovery of the bear. Supplementation of the sloth bear with oral haematinics and liver tonics resulted in the improvement of the anaemia and body condition.



Fig. 6. Radiographic image of both normal and damaged digits of hind limb of the injured wild sloth bear



Fig. 7. The injured foot 10 days after the procedure with intact sutures and no exudation



Fig. 8. The gradual formation of granulation tissue and complete closure of the wound after 90 days of dressing



Fig. 9 (a and b). Complete healing of the wound and proper weight bearing was observed by the end of six months

The sloth bear had shown remarkable improvement after three months of therapy. Before re-introducing the sloth bear to the socialisation area along with other bears, he was trained to follow simple commands like “hands out” and “open mouth”, using dates and honey. This practice also termed as “positive conditioning” that helps not only in strengthening of the bond between the keeper and the animal, but also enables the veterinary team to perform simple procedures like blood collection, nail trimming and wound dressing, efficiently. Within a couple of months after complete healing of the wound and stable health, the sloth bear was released into the socialisation area with other bears.

The barbaric practice of using snare traps for poaching of wild animals by poachers has been practiced, for decades, favouring the illegal trade and marketing of animal organs (Lee, 1995; Shepherd and Shepherd, 2010). Several modes of poaching, including firearms, the country-made explosives and muzzle-operated guns, have been widely used by poachers in spite of which wire snares are preferred among poachers due to their easy installation with very meagre investment. Besides this, snare traps are not easily visible in forest patches unless they are being searched for meticulously. These snare traps either kill or amputate the animal, leading to lifelong casualties and the inability for them to be released into the wild again (Hermon, 2017; Balseiro et al., 2020).

Snare trap injuries are very complicated and require prompt veterinary intervention to save the life of the distressed animal. Animals trapped in snares often struggle very hard to free themselves by pulling or biting the wires leading to additional trauma and dental injuries. They suffer from starvation, thirst, strangulation, self-mutilation wounds, excruciating pain, and discomfort, and sometimes, even predation from carnivores (Rochlitz et al., 2010). On several occasions, even before the arrival of the rescue team, local people would end up cutting one end of the snare attached to a tree branch, setting the bear free. Such human interventions cause more harm as the bear still entangled within the trap starts running frantically, aggravating the injuries. Severely injured sloth bears unable to move into deeper areas of forests stay near the forest fringes surrounding human settlements leading to more conflict zones. Rescued animals fight a long battle against physical injuries as well as mental trauma, and have to undergo several correction surgeries, which is why most of the time, they end up losing the functionality of the affected body part.

REFERENCES

- Abdul, S.K.S and Hosetti, B.B. 2016. Indian sloth bear *Melursus ursinus* shaw- conflict with humans: a case study at Kadekolla village, Ballari district, Karnataka State. *J. Res. Biol.* 6: 1928-1936

- Balseiro, A., Royo, L.J., Gayo, E., Balsera, R., Alarcia, O. and García Marín, J.F., 2020. Mortality causes in free-ranging Eurasian Brown Bears (*Ursus arctos arctos*) in Spain 1998–2018. *Animals* **10**: 1538.
- Crudge, B., Nguyen, T. and Cao, T.T. 2020. The challenges and conservation implications of bear bile farming in Viet Nam. *Oryx* **54**(2): 252-259.
- Feng, Y., Siu, K., Wang, N., Ng, K.M., Tsao, S.W., Nagamatsu, T. and Tong, Y. 2009. Bear bile: dilemma of traditional medicinal use and animal protection. *J. Ethnobiol. Ethnomed.* **5**(1): 2.
- Gupta, A. 2017. When snares set for wild boars spell trouble for Karnataka's tigers. <https://thewire.in/environment/snare-wild-boars-tigers>. Accessed on 10 December 2020.
- Lee, J. 1995. Poachers, tigers, and bears. Oh my--Asia's illegal wildlife trade. *Nw. J. Int. L. Bus.* **16**: 497.
- McNab, B.K. 1992. Rate of metabolism in the termite-eating sloth bear (*Ursus ursinus*). *J. Mammal.* **73**(1): 168-172.
- Palita, S.K., Kar, T. and Debata, S. 2014. Human-sloth bear interactions: preliminary survey from semiliguda range of Koraput forest division, Southern Odisha, India. *Pranikee – J. Zool. Soc. Orissa* **16**: 13-21.
- Rochlitz, I., Pearce, G.P. and Broom, D.M. 2010. *The impact of snares on animal welfare*. Onekind Report on Snaring, Centre for Animal Welfare and Anthrozoology. Cambridge University Animal Welfare Information Service, pp. 1-31.
- Shanmugam, A.A., Kumar, J.K., Selvaraj, I. and Selvaraj, V. 2008. Hematology of sloth bears (*Melursus ursinus ursinus*) from two locations in India. *J. Wildl. Dis.* **44**(2): 509-518.
- Shepherd, C. and Shepherd, L. 2010. The poaching and trade of Malayan sun bears in Peninsular Malaysia. *Traffic Bull.* **23**(1): 49-52.
- Singh, N., Sonone, S. and Dharaiya, N. 2018. Sloth bear attacks on humans in central India: implications for species conservation. *Hum. Wildl. Interact.* **12**(3): 5. <https://doi.org/10.26077/2mgq-fs29>
- Yoganand, K., Rice, C.G., Johnsingh, A.J.T. and Seidensticker, J. 2006. Is the sloth bear in India secure? A preliminary report on distribution, threats and conservation requirements. *J. Bombay Nat. Hist. Soc.* **103** (2-3): 172-181.