

## Sloth Bear Attack Enucleates Eye: Suitable for Transplantation

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The present paper reveals a rare incidence in which a Sloth Bear attacked a lady in Mount Abu Wildlife Sanctuary, Rajasthan, India and enucleated her eye in such a way that it is perfectly suitable for transplantation. Though the accidental whole globe enucleation by the wild animal is an unfortunate incidence of human-animal conflict, it draws our attention towards few natural clues. The incidence is rare of its kind because it resulted in a surgically perfect whole globe enucleation and the enucleated globe got preserved overnight in open in a fit for transplantation condition. This might have occurred due to coincidence of few chance factors like typical shape of the Sloth Bear's claws, accidental-perfect mounting and natural moist chamber effect provided by the local weather.

### Introduction

Conflicts between wildlife and human beings in India are increasing due to increasing human population, loss of natural habitats, and in some regions due to increasing wildlife population as a result of successful conservation programs [1,2] and decline in wild prey population [3]. Conflicts are most acute when the species involved is critically imperiled while its presence in an area poses a significant threat to human welfare. Sloth bears (*Melursus ursinus*) are endemic to the Indian subcontinent and frequently come into conflict with humans inside and outside protected areas. A study conducted in North Bilaspur Forest Division, Chhattisgarh revealed that sloth bears, most

commonly (36.5%) attacked human beings by running on all four legs and knocking the victim down. The second most common (28.5%) mode was attacking by standing on their hind legs [4]. Due to its characteristic nature of attack, in most of the cases, the victim receives considerable injury on his upper body especially on face, cheeks, ears and eyes. This can be confirmed from the disfigured faces of many survived victims.

Mount Abu Sanctuary in southern Rajasthan holds a good number of Sloth bears in the state. But in this area increasing human population density and tourism related activities poses problem for the species with regards to space and food availability. Moreover, the number of sloth bears outside the protected area, as observed in 2013 census, is maximum (77) in Sirohi district of Rajasthan where the Mt. Abu Wildlife Sanctuary is located [5].

### Methods and Material

Authors have been working and monitoring the Human-Sloth Bear conflict in Mount Abu Sanctuary since 2012. When this particular incidence about which the article is based occurred, we have visited the site and collected firsthand information by interviewing the victim, her relatives as well as the medical team who involved in her treatment and care.

### Case Report

In a recent incidence, on 21<sup>st</sup> September 2013, in Mount Abu, a 50

year old lady was attacked by a mother bear and one of its one year old two cubs. It was around 7:00 PM while the lady was on her way to home through the jungle; the bear with its two cubs appeared just in front of her from the nearby bushes. When the lady screamed in fright, the bear charged towards her and severely attacked on her. Lady fell down and one of the two cubs joined the mother in attacking and caused injuries to lady's lower legs. Sloth bear applied her long clawed paws on lady's face and enucleated her left eye (The entire globe) with its claws. Lady was seriously injured. Hearing the lady's screaming people reached the site and their yelling made the bear and cubs to retrieve into forest. Lady who lost her one eye was taken to hospital where she was given necessary medical aid. Next day, at 9 AM while the people were examining the site of sloth bear attack, they came across the enucleated eye hung on a near-by bush in the same condition as it was fallen from the claws of the bear (Fig1). The doctors on examination found the eye perfect for transplantation.



*Fig. 1. Eye hung on a near-by bush.*

## Discussion

Being one of the very delicate organs of our body, eye recovery needs expertise and aseptic conditions. In order to separate the globe intact without causing damage to it as well as the rest of the orbital elements, the muscular and neural connections need to be properly detached by a surgical expert and it is done with the help of special tools like curved Stevens scissors and curved hemostatic clamp. Enucleation scissors require heavy-weight, strongly curved blunt tips to push through the layers of tissue without catching, fit deep in the orbit behind the globe, and cut the optic nerve. After Enucleation the globes are stored and shipped in moist chambers using a cage device and alligator clip to fixate the globe [6].

But in contrast to the above mentioned technicalities, in this incidence of human-sloth bear conflict, the “Whole Globe Enucleation” was done by a wild animal during its attack on the lady using its claws of the paw. The Sloth bear dropped the globe on a twig at the site and it remained there exposed to outside environment for around 14 hours after which it was taken to a nearby Ophthalmological Research Centre and was confirmed as perfectly suitable for transplantation to a new recipient.

This rare incidence is to be considered as due to chance coincidence of few factors.

1) The typical shape of the claws of Sloth bear might have made the “accidental whole globe Enucleation” a surgically perfect one. The “shape” of the claws of the fore paw of female sloth bear might have worked in a similar or even a better manner as

the conventional whole globe surgical Enucleation tools like curved Stevens scissors and curved hemostatic clamp would work.

2) Globe was mounted perfectly- From the claw it fallen vertically and its posterior side mounted perfectly on the twig in a similar way it is to be mounted in the cage device as it is to be done in clinical storage procedure of the enucleated globe.

3) The natural moist chamber effect - Even though the incidence was accidental, the environmental condition in mount Abu during that night- a low temperature (26°C) along with high humidity (73%) and light shower (1mm) might have played together in providing an ideal condition to keep the eye intact without damage and to get naturally stored overnight.

The chance factors demonstrated by nature in the incidence may be considered in future to design or modify the clinical procedures related to whole globe Enucleation, storage and transportation, to make it more easy, effective and economical. ■



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