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Gross necropsy findings in a large Indian civet (*Viverra zibetha*) victim of human-wildlife conflict: A case report

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Abstract

We present the significant gross post mortem findings of hypovolemic shock in a Large Indian Civet (*Viverra zibetha*), which was rescued by the forest department, due to conflict of poultry attack in Hindugoan village, a semi-urban area situated near North Lakhimpur town of Lakhimpur district of Assam, North East India.

Keywords: Hypovolemic shock, large Indian civet, north Lakhimpur, conflict

1. Introduction

Lakhimpur district is located in the north east corner of the state of Assam in the North East India (Fig. 1 & 2). There are four important reserved forests in Lakhimpur viz; Ranga, Dulung, Kakoi and Pabha. The reserve forest Ranga, Kakoi and Dulung with a tropical rain forest habitat is situated in the north boundary, which is adjacent to the dense tropical forest of Arunachal Pradesh (Fig. 3). The Pabha reserve forest is situated towards the south of the district and in the frontier the world's famous largest river Island Majuli lies (Saikia, & Saikia, 2020) ^[16]. These protected forests coverage has a population of wild elephants, tigers, buffaloes, deer and wild cats (<https://lakhimpur.nic.in>) ^[6]. Among the vivid population of wild fauna, the presence of small carnivore, in Assam and Lakhimpur district was recorded in the camera trap study (Talukdar, *et al.*, 2016, Thapa, *et al.*, 2024) ^[20, 21]. However, literature citing their population is sparse. The small carnivore population of the Indian sub-continent is concentrated in the Eastern Himalaya, the North-East Hills and, the Western ghats (Sterndale 1884; Pocock, 1939, 1941 & Nowak, 1999) ^[19, 13, 14, 12]. Among the 33 species of small carnivores (only the viverrids, mustelids and herpestids) in India more than 50% of them are found in north east India (Datta, *et al.*, 2008) ^[3].

A small carnivore of the family Viverridae, Large Indian Civet (LIC) *Viverrazibetha* falls in the species list of schedules II of the wildlife protection act (1972) of India; Schedule II represents species listed for prohibition of hunting under the Act (MoEF 1972) (Bista, *et al.*, 2012 & Menon, 2023) ^[2, 10] and is categorised as near Threatened on the IUCN Red list of Threatened species (Duckworth, *et al.*, 2008) ^[4] and is included in Appendix III of CITES. It is one of the most common small carnivores encountered in camera-trap surveys (Timmins, *et al.*, 2016) ^[22]. Due to increasing habitat fragmentation by anthropogenic factors and annual flood in the district has resulted in the displacement of wild animals (<https://lakhimpur.nic.in>) ^[6]. The study presents the major gross postmortem findings of a LIC carcass which was a suspected case of displacement and a traumatised victim of an unwitnessed human civet conflict at Hindugoan of North Lakhimpur town of Lakhimpur District Assam, India.

2. History of the Animal

As reported by the forest persons, on the night of 20th Jan 2025 LIC was caught by people and was put inside a gunny bag, due to repeated threat to their domestic fowls at Hindugoan (Gharmara - Lat 27.220079° Long 94.147945°) village of North Lakhimpur town of

Lakhimpur district, Assam. The animal was found dead and later in the morning it was brought to the District Diagnostic Laboratory, Department of Animal Husbandry and

Veterinary, Lakhimpur for the necropsy by the forest department.



Fig 1: Representation of India Map



Fig 2: Representation of Assam, India



Fig 3: Representation of Reserve forest of Lakhimpur District, Assam

3. Post-mortem Findings & Results

A thorough post-mortem was conducted to verify the cause of death. Morphometric data revealed that the civet was an adult male weighing 8 kg, body length (Snout - to -tail) -152 cm, tail length - 52 cm. On external examination the animal body surface was found devoid of any injury, cut marks, lacerations and bone fracture etc. On opening the carcass, there was severe haemorrhage and congestion of the pectoral muscle on the both sides of the chest (Fig. 4 & 5). There was presence of clotted blood in between the subcutaneous tissue and ribs on

both side of the chest (Fig. 6) which was suspected due to rupture of inter-coastal arteries and blood capillaries. Further, towards the thoracic and abdominal cavity, severe congestion of lungs, liver and ecchymoses in the serosa of the stomach and small intestine was prominently observed (Fig. 7). Extending to the abdominal cavity, rupture of the liver (Fig. 8) was another major finding. The significant findings of the necropsy ascertain the cause of death due to extensive internal haemorrhage, which had led to hypovolemic shock.



Fig 4 & 5: Congestion of pectoral muscle



Fig 6: Clotted Blood in between the subcutis and ribs



Fig 7: Echymoses in the internal organs.



Fig 8: Rupture of Liver.

4. Discussion and Conclusion

Shock is defined as a common medical emergency characterised basically by reduction in the effective circulating blood volume and blood pressure (Radostitis, 2005) ^[15]. Hypovolemic shock, a causative factor of primary and secondary shock due to haemorrhage/loss of fluid that may occur internally or externally in the body (Kulkarni, *et al.*, 2009) ^[9]. In this event, the gross findings of internal haemorrhage might have occurred due to profound impacts to the animal body in the form of external trauma and the possible assumption of echymoses in the internal organs and rupture of liver is might be due to direct lateral impact to the thoraco-abdominal region without fracture of rib cage

(Shoa, Y 2013) ^[17].

Earlier the human and wildlife conflict was considered as a rural and agricultural problem which primarily affects the communities that lives close to forest (Messmer, 2000) ^[11]. However, the increasing human population and expansion of human development activities, the incidence of human animal conflict is prevalent in urban areas also (Soulsbury & White, 2015) ^[18]. This incident of poultry attack by wild cats has also occurred in a semi-urban area of Lakhimpur town. Human - civet conflict for poultry attack was reported in many parts of Asia and India (Tariq, *et al.*, 2022; Dutta, *et al.*, 2015) ^[1, 3]. In interaction with local people of Hindugaoan (Gharmara), they consider civets as threat for poultry, farm animals and damage

to poultry houses. They do not kill civets for meat consumption. Earlier reports of hunting of civets for bush meat in India and Assam were also recorded (Gupta, 2004, Kannan, 2004, Jelil, *et al.*, 2018) ^[5, 9, 8]. The residents of Hindu goan (Gharmara), village had also mentioned about seldom sighting of LIC and frequent damaged poultry yards in the backyard of houses. Presuming, LIC are more likely to depend both on meat and fruit sources of food in the district of Lakhimpur, further research on its ecology, behaviour, feeding habits and competition for food with human and other species of animals at Lakhimpur district is needed.

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