

## Case Study

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## Emergency Critical Care of Accidental High Fall in a Wild Indian Palm Squirrel (*Funambulus palmarum*)

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### ABSTRACT

#### Keywords

Accidental high fall,  
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This report deals with the successful clinical management of squirrel which fell from a great height. A male wild Indian palm squirrel around 50 gm weights was presented to the Referral Veterinary Polyclinic, IVRI Izatnagar in comatose condition with the history of fall from the treetop to the ground. Clinical examination revealed congested mucous membrane, lack of eye reflexes, ventral abdominal cyanosis, normal body temperature, tachycardia and tachypnoea. The case was successfully managed with life saving drug adrenaline, nikethamide and dexamethasone along with amoxicillin, neurobion, multivitamins.

### Introduction

The Indian palm squirrel (*Funambulus palmarum*) is a species of rodent naturally found in India. *F. palmarum* can construct their nests out of “anything that they can find” (Jayawardene, 2006). Due to its habit of playing, running, jumping, food searching, tree-climbing and protection from natural predators like varanid lizards, they usually fall from heights. Fall from great height is an accidental injury and commonly associated

with cardiac and aortic rupture (Atanasijevic *et al.*, 2009). Such cases require an emergency critical care as soon as possible and most of the times cardiopulmonary resuscitation therapy (Patel *et al.*, 2015).

### Case history and clinical examination

A male wild Indian palm squirrel around 50 g weight was presented to the Referral Veterinary Polyclinic, IVRI Izatnagar in comatose condition (Fig. 1) having history of

fall from treetop to the ground. Clinical examination revealed congested mucous membrane, closed eyes, abdominal cyanosis (Fig. 2), absence of visual and pedal reflex, tachycardia (300 beats per minute), tachypnoea (150 breaths per minute) but having normal body temperature (100.2°F).

### Treatment

The treatment was started without delay after clinical and physical examination using life saving drugs like inj. Adrenaline (1:1000 dilution) 0.3 ml IM BID, inj. Nikethamide (25% w/v) 0.3 ml IM BID, inj. Dexamethasone 1mg/kg BW IM BID for one day along with supportive therapy which includes inj. Neurobion 0.3 ml IM OD, tab. Enrofloxacin 10 mg/kg PO BID and B-complex and ascorbic acid vitamins (Syrup Becasule) 3 drop PO BID for 3 days.

### Result and Discussion

Condition of the squirrel improved after 12 hour of treatment (Fig. 3) and complete recovery was reported by caring person on third day of the treatment. The extent of body injury from free fall depends upon certain factors including the absorbed energy at impact, height of the fall, mass of the body, the stopping distance, the penetration of the falling object into the landing material, landing position, energy absorbing properties

of different tissues, and neuromuscular reflexes decreasing the impact (Granhed *et al.*, 2017; Tan and Porter, 2006).

In the present study, the case was successfully managed with lifesaving drugs like adrenaline, nikethamide and dexamethasone along with antibiotic, B-complex and Vitamin C. Adrenaline is a neural hormone that is responsible for the regulation of most of the vital functions include increasing the rate and force of contraction of heart during cardiac arrest, increasing blood pressure, expanding the pulmonary air airways for easy breathing, redistributing blood to the muscles and increase the energy supply in the body (mainly for the brain) through carbohydrate and fat metabolism during stress (Bruss *et al.*, 2008). Nikethamide increases the excitability of neurons, increases nerve conduction and stimulate respiratory centre in the management of pulmonary insufficiency (Qian, 2010). Dexamethasone provides relief from spinal pain as well as having anti-inflammatory action (Gilroy and Perreti, 2005). Broad spectrum antibiotic used to check secondary bacterial infection in stressed and dexamethasone treated patient. B-Complex vitamins helps to carry electrical signals efficiently (Ungureanu, 2014) and ascorbic acid reduces oxidative stress (Patel *et al.*, 2018) and promotes collagen formation to enhance wound healing.



**Fig.1** Comatose condition **Fig.2** Abdominal cyanosis **Fig.3** after 12 hour of treatment

In conclusion, accidental high fall from the treetop is an emergency condition usually seen in wild rodents. Such cases can be successfully managed by lifesaving drugs like adrenaline, nikethamide, dexamethasone along with supportive therapy including antibiotics, B-Complex with vitamin C and proper nursing care and management.

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