

Successful surgical management of degloved injury of third digit of forelimb in an Eastern Hoolock gibbon

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A 7-year-old female Eastern Hoolock gibbon (*Hoolock leuconedys*), weighing 4.8 kg, captive at Nandankanan Zoological Park, had an open bleeding wound on the third digit of left forelimb. The animal was active and alert, but the injury hindered brachiation. For further management of the wound, gibbon was confined to its feeding chamber. A total dose of 40 mg of ketamine (Ketamine Biowet Pulawy 100 mg/mL, Poland) was administered with the help of a blowpipe, at the dose of 8 mg/kg body weight intramuscularly and anaesthesia was achieved in 4 minutes. Once anaesthetised, gibbons often fall asleep holding a branch (Bryant and Turvey, 2017). Hence, a safety net was erected underneath to prevent post-induction fall, thus preventing further injuries.

Following close physical examination, a degloving injury with an exposed phalanx was noticed at the distal end of the third digit of the left forelimb (Fig. 1A). Radiographs confirmed distal phalanx of the same digit was missing along with distal tip of middle phalanx (Fig. 1B). The wound was thoroughly flushed using diluted povidone iodine solution, which was followed by wound debridement. To facilitate wound closure and healing, muscles, subcutaneous tissue and skin were then apposed and sutured using cross mattress sutures with the help of No. 0 polydioxanone (PDS II, Ethicon) absorbable suture material. Paraffin gauze (Jelonet, Smith & Nephew) wrapping followed by gauge bandaging was applied to the digit to accelerate healing. Intravenous fluid therapy and oxygen supplementation was continued throughout the procedure. No complications were observed during anaesthesia and the recovery from anaesthesia was smooth and uneventful, with the animal regaining consciousness within 35 minutes. No signs of excitation, respiratory depression, or post-anaesthetic complications were observed.

Postoperatively, antibiotic (Enrofloxacin 5 mg/kg body weight) and analgesic (Meloxicam 0.1 mg/kg body weight) were administered orally for 5 and 3 days, respectively. It was observed that after 4 days of surgical intervention, the gibbon had removed the bandage, however, the sutures were intact. Regular wound dressing using an antiseptic spray (Aluspray, Vetoquinol) at the suture site 2-3 times a day was continued to promote second intention healing along with confinement in the feeding chamber. The wound was regularly monitored, and there was no self-

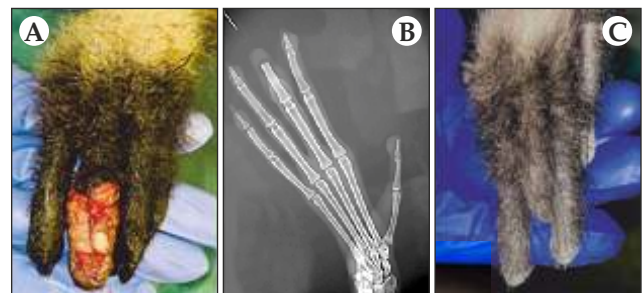


Fig. 1: (A) Degloved and exposed phalanx of third digit of left forelimb, (B) Missing 3rd phalanx and distal tip of 2nd phalanx of third digit of the left forelimb, (C) Complete healing of third digit of left forelimb.

amputation and post-operative complication. The gibbon recovered uneventfully by one month postoperatively (Fig. 1C) and weight bearing was achieved on the affected limb.

Postoperative wound management posed practical challenges due to the animal's natural tendency for movement and manipulation of the affected limb. The gibbon removed the bandage within 4 days, which is consistent with behavioural traits observed in non-human primates. To overcome this, frequent topical antiseptic application and close monitoring were adopted. Confinement to the feeding chamber helped restrict excessive movement and facilitated wound healing. Despite these challenges, no self-mutilation or wound dehiscence was observed. Obligation to proper surgical intervention and postoperative care has resulted in recovery and preservation of quality of life of a "vulnerable" species (IUCN Redlist) at Nandankanan Zoological Park, Bhubaneswar.

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Reference

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