

Biodiversity Record: Severe scalp avulsion injuries in juvenile long-tailed macaques

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Recommended citation. Lim G & Choong C (2026) Biodiversity Record: Severe scalp avulsion injuries in juvenile long-tailed macaques. Nature in Singapore, 19: e2026072. DOI: 10.26107/NIS-2026-0072

Subjects: Long-tailed macaque, *Macaca fascicularis* (Mammalia: Primates: Cercopithecidae).

Subjects identified by: Gloria Lim.

Location and dates: Singapore Island, Mandai Lake Road, compound of Wildlife Reserve; April to December 2025.

Habitat: Parkland surrounded by secondary forest (Central Catchment Nature Reserve) and freshwater lake (Upper Seletar Reservoir).

Observers: Gloria Lim and Nadia Chew.

Observations: Two juvenile and one infant long-tailed macaques were observed with severe scalp avulsions, exposing underlying tissues.

The juvenile male, Einstein (Figs. 1–4), estimated to be about six to seven months old, was first observed on 28 April 2025 with a severe head injury, extending across the top of his head, from his right ear to his left cheek. His skull and subcutaneous tissues were exposed (Figs. 1 & 2), and this wound bled intermittently over the next few weeks, but he was alert and able to keep up with the troop. In June, new puncture wounds in his skull resembling teeth marks were observed (Fig. 3). Throughout this time, he was still cared for by his dam and other members of the troop, and the extensive wound gradually improved. By December 2025, most of the skull was covered with scabs and new skin (Fig. 4). The scabs occasionally bled, presumably because of friction with surfaces or due to grooming by his group members.



Fig. 1. Einstein's left profile, April 2025. Fig. 2. Einstein's right profile, April 2025. (Photographs by: Nadia Chew). Fig. 3. Puncture wound (indicated by arrow) on Einstein's skull, June 2025. Fig. 4. Einstein's wound covered in scabs and new skin, December 2025 (Photographs by: Gloria Lim).

The juvenile female, Madison (Figs. 5–7), estimated to be about nine to ten months old, was first observed with injuries on 3 September 2025 (Fig. 5). She sustained a similar but less extensive head injury as Einstein – part of the skin on her head was avulsed, exposing the right side of her skull. She remained alert and mobile. As part of a routine trapping and sterilisation exercise, the opportunity arose to examine her wound closely, and it was observed that approximately half of her right pinna was missing. (Fig. 6). Unlike Einstein, her injury did not deteriorate over the months of observation (Fig. 7), and she made a full recovery.



Fig. 5. Injury on Madison's head, early September 2025. Fig. 6. Injury on Madison's head in mid-October 2025 while she was under general anaesthesia during a trapping and sterilisation exercise. Fig. 7. Madison in December 2025. (Photographs by: Gloria Lim).

The infant of unknown sex (Figs. 8 & 9), estimated to be three months old, was first observed with injuries on 15 December 2025. A relatively small section of skin was scalped, exposing the underlying soft tissues on the right side of its head, with the right external ear missing (Fig. 8). It was alert and mobile, and remained with its dam. By 12 January 2026, it was observed to have made a full recovery, with a hole where its right external ear was (Fig. 9).



Fig. 8. Infant's wound, December 2025.

Fig. 9. Wound completely healed, January 2026. (Photographs by: Gloria Lim).

Remarks: These appear to be the first local reports of such severe scalping injuries in juveniles and infant long-tailed macaques. Without human intervention, these young macaques have a very significant chance (36.6-70%) of succumbing to their wounds (see Kumar et al., 2021; Sewoyo et al., 2025). The exact cause of the injuries cannot be confirmed, but they were likely caused by conspecific fights within the troop. As the troop was closely monitored, and the affected individuals remained bright, alert, and well cared for by the troop, no veterinary intervention was undertaken. Despite the severity of the scalp injuries, all three individuals survived and recovered. This demonstrates the remarkable resilience of the species in the wild.

These three cases were observed in a troop of long-tailed macaques with a higher proportion of males (50%) and a high population density (471 individuals/km²).

Literature cited:

Kumar V & Sankhyan V (2021) Musculoskeletal injuries: prevalence and severity in free-range rhesus macaques (*Macaca mulatta*) of Himalayan Shivalik Hills, Northern India. *Biological Rhythm Research*, 52(7): 1044–1054. <https://doi.org/10.1080/09291016.2019.1613795>

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