Lorikeet Paralysis Syndrome: Triage & Treatment Protocol

Developed by the Incident Response and Treatment sub-group (Paralysis Syndromes Working Group)
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Contents

1. Case presentation 1
2. Differential diagnosis 2
3. Categorisation of clinical severity 2
4. Decision making for euthanasia 3
5. Release 3

Lorikeet Paralysis Syndrome (LPS) is a common disease of rainbow lorikeets presenting to wildlife hospitals in South-East QLD and north-east NSW (Lacasse et al. 2021), however the aetiology is not yet identified. With timely and appropriate treatment of affected birds, prognosis is fair to good (Lacasse et al. 2021).

To facilitate communication and coordination, Wildlife Health Australia (WHA) has formed a combined *Paralysis Syndromes Working Group* with participation from wildlife rehabilitators, veterinarians, scientists and government agencies. This document was developed by the *Paralysis Syndromes Working Group*. For more information, visit the WHA LPS Incident page.

1. Case presentation

A suspect case of LPS is:

- a lorikeet species of any age
- located in SE QLD or NE NSW
- unable to fly
- no physical or radiographic evidence of trauma

Typical presentation and clinical findings in LPS cases:

- ***Musculoskeletal:*** ranging from inability to fly and hindlimb weakness to inability to stand and walk
- ***Eyes:*** ranging from reduced to complete loss of ability to blink
- ***Oral cavity:*** ranging from reduced tongue movement to inability to swallow
- ***Vocalisation***: voice changes (croaky)
- ***Body condition***: varying degrees of pectoral wasting; birds with acute disease may present with normal or above normal body condition
- ***Clinical pathology***: elevated creatinine kinase; elevated AST (aspartate aminotransferase); elevated uric acid

In the Sunshine Coast area, please scan any rainbow lorikeets for a microchip and if found please contact Dr Claude Lacasse (07 5442 8057; clacasse@rspcaqld.org.au).

2. Differential diagnosis

Differential diagnoses for LPS include:

- trauma (e.g. hit by car, window strike)
- metabolic bone disease (young birds only)

The minimum database for ruling out differential diagnoses is:

- careful visual examination for signs of deformity or injury, and
- full body radiographs (minimum VD and lateral views)

See Lacasse et al. 2021 and the WHA LPS Factsheet for more information. If you suspect a notifiable disease, call the EAD Hotline on 1800 675 888.

3. Categorisation of clinical severity

To guide appropriate treatment protocols, cases should be categorised based on the severity of clinical signs (Lacasse et al. 2021) with reference to Table 1 below. Birds may deteriorate during the initial treatment period (up to 48 hours), so categorisation should be reviewed regularly to ensure ongoing delivery of the most appropriate treatment, or to determine if euthanasia is indicated. See Section 4 Decision making for euthanasia if birds are non-responsive to treatment or continue to deteriorate.

Table 1: Categorisation of clinical severity and treatment protocols

Category	Clinical presentation	Treatment
Category 1	**Unable to stand, blink and swallow**	• subcutaneous fluids at admission (10% (or 100ml/Kg), then 5% BW or 50mg/kg every 24 hours for 2-3 days for category 1 only) • meloxicam (1mg/kg) at admission. This can then be extended for up to 3-5 days orally BID, as needed. ***note: bird must be hydrated prior to giving NSAID's*** • crop feeding TID • eye lubrication TID • swabbing of mouth to remove excess saliva until able to swallow • remain in temperature-controlled environment until improved to Category 2
Category 2	**Unable to blink but can swallow and stand, ataxic when trying to walk**	• subcutaneous fluids at admission (10% (or 100ml/Kg) • meloxicam (1mg/kg) at admission. This can then be extended for up to 3-5 days orally BID, as needed. ***note: bird must be hydrated prior to giving NSAID's*** • crop feeding TID if still on the cusp of being unable to swallow • eye lubrication TID
Category 3	**Able to blink, swallow, stand and walk, ataxic when hopping**	• subcutaneous fluids at admission (10% (or 100ml/Kg) • meloxicam (1mg/kg) at admission. This can then be extended for up to 3-5 days orally BID, as needed. ***note: bird must be hydrated prior to giving NSAID's***
Category 4	**Able to blink, swallow, walk and hop**	• subcutaneous fluids at admission (10% (or 100ml/Kg) • meloxicam (1mg/kg) at admission. This can then be extended for up to 3-5 days orally BID, as needed. ***note: bird must be hydrated prior to giving NSAID's***

4. Decision making for euthanasia

Both the welfare of individual affected birds and the resourcing of an intensive period of treatment and rehabilitation should be considered when making decisions about euthanasia.

The following clinical presentations carry a poor prognosis for LPS affected birds and are grounds for euthanasia:

- moribund or unresponsive
- severe respiratory distress
- emaciation (BCS < 2), regardless of severity of clinical signs
- permanent eye damage (due to any cause, including paralysis, trauma etc)
- deterioration of clinical signs or lack of improvement after a 3-5 day treatment period (e.g. inability to put on weight or losing weight after 3-5 days even with crop feeding, worsening demeanour, >5 days without regaining ability to swallow or tongue movement)

The rehabilitation of lorikeets with LPS is intensive, and requires specialised skills, adequate resourcing and staffing capacity, and specialised facilities.

Key resources required for treatment and rehabilitation of LPS affected birds include:

- appropriately trained personnel in sufficient numbers to care for affected birds (potentially in large numbers) for up to 8 weeks, with personnel turnover capacity to avoid fatigue and burnout
- personnel skilled in crop feeding and other intensive care treatments where required
- appropriate facilities for housing affected birds, potentially in large numbers
- appropriate flight aviaries for pre-release fitness and assessments (minimum of 5m x 5m x 3m)

Where resources for appropriate treatment and rehabilitation are insufficient or unavailable, cases that cannot be redirected to appropriately resourced facilities should be euthanased. Prioritisation based on severity of clinical signs (see Section 3 Categorisation of clinical severity) may be useful when resources are limited to direct treatment to cases most likely to recover.

5. Release

Full recovery for release into the wild can take up to 8 weeks, and lorikeets generally require at least 2 weeks in a flight aviary to regain suitable fitness. Birds are fit for release once they can sustain flight for >5 minutes without increased respiratory distress (i.e. no increased abdominal effort or open mouth breathing).