Association of Avian Veterinarians Australasian Committee

Advancing and Promoting Avian Medicine and Stewardship

Policy Document

Avian Euthanasia

Euthanasia is the process of inducing a painless death (ANZCCART 2001) in the interests of an animal's own welfare, as an ultimate act to alleviate pain and distress (NHMRC 2004). It is used when pain, distress and suffering are likely to exceed manageable levels or when animal health or welfare is irredeemably compromised. Euthanasia may also be used as an end point for the control of vertebrate pests and in research at the conclusion of animal experiments in order to provide tissues for scientific purposes.

The aim of euthanasia is to minimise pain, fear or distress to the animal involved. Therefore sedatives and analgesics should be used if birds are injured or self-harming, especially if there might be an unavoidable delay to euthanasia. It is also recommended to hold birds in a quiet, darkened place free from exposure to predators, other animals, odours and alarm calls of other birds. Cages should be covered with thick dark cloth and bird handling should be minimised.

Qualified persons

Euthanasia techniques require a high level of skill and or access to sedatives and anaesthetic drugs. Anyone who performs avian euthanasia must have an appropriate level of training, legal authority and experience with the techniques to be used. They must be experienced in the humane restraint of birds. A veterinarian with appropriate training and expertise should be consulted to ensure that the best technique is used for the individual bird species.

Mechanisms of euthanasia

Death occurs when there has been lethal depression of those cerebral neurons which are necessary for life. This can occur with an anaesthetic overdose, severe hypoxia, toxic and metabolic insults or physical disruption of brain structure and activity. However, euthanasia should be rapid and result in permanent loss of consciousness followed by loss of muscle activity, respiration and cardiac arrest.

Actions or agents that block skeletal muscle activity, respiration or cardiac function are not acceptable as the sole agent for euthanasia since consciousness might be maintained for a long period until the point of cerebral death. For these reasons hypoxia is not preferred as the sole agent for euthanasia. This includes hypoxia (and hypercapnia) induced by thoracic compression, exsanguination or oxygen displacement with carbon dioxide, carbon monoxide or other non-volatile gases. Thoracic compression is an unacceptable method of euthanasia for any bird species.

Bird Identification and Euthanasia consent

Correct species identification is essential before contemplating the euthanasia of injured wild birds. It may be necessary to notify State Government Departments if threatened and endangered species are to be euthanased. Wild birds should be examined for Australian Bird and Bat Banding Scheme (ABBBS) leg bands and or microchips.

When an animal is owned, veterinarians should obtain written informed consent before proceeding with euthanasia. Microchip readers should also be used on aviary and companion birds and matched with leg band or other identification methods. Euthanasia consent forms should be completed by owners or their agents and if the owner is under 18 years of age or is limited in their capacity to provide consent, consideration should be given to identifying a guardian agent to assist. Consent that is given verbally should be recorded in the medical record and later validated by obtaining the owner's signature on a euthanasia consent form to provide additional protection.

Recommended Euthanasia Techniques

Anaesthetic overdose

In a veterinary practice setting gaseous anaesthesia using isoflurane or sevoflurane is recommended as a premedication for euthanasia. Alternatively an overdosage of an intramusculary injected dissociative anaesthetic such as tiletamin/zolazepam (Zoletil©) can be used to induce unconsciousness. Once a deep level of anaesthesia is reached intravenous barbiturate should be given by injection into either the jugular, brachial or tarsal vein. Direct injection of barbiturate into the occipital venous sinus is another option in some bird species including columbids and waterfowl. However, this and intracardiac injection of barbiturate should only be done on heavily sedated or anaesthetized birds because there is a high risk of extravenous leakage of drug which can cause pain and suffering. In most birds a ventral medial approach through the thoracic inlet is preferred for intracardiac injection.

Bolus intravenous sodium pentobarbitone injection causes significant artefacts in histological sections. So birds that are euthanased for necropsy examination and diagnostic work-up should be administered with sodium pentobarbitone to effect. Most commercially available formulations of sodium pentobarbitone such as Lethobarb© have very high concentrations of drug and should be diluted 1:5 in saline.

Subcutaneous or intramuscular routes of administration of sodium pentobarbitone are unacceptable methods of administration due to the high probability of pain associated with injection in conscious birds.

Intrapulmonary, intracardiac or intracoelomic injections are not acceptable methods of euthanasia in birds as barbiturate absorption via this route is delayed due to the presence of airsacs. The secondary cytolytic effects of barbiturates on the coelomic organs also interferes with histological interpretation.

Euthanasia of wild birds

Where it is obvious that there is no person in charge of a wild bird and the bird is severely injured or sick, the veterinarian is able to proceed with euthanasia of the bird without involving another authority. Members of the public, caregivers and other people who deliver wild birds that require euthanasia should be directed to or offered appropriate bereavement counselling.

Researchers planning field trips that involve capture of birds should be prepared in appropriate handling and euthanasia techniques facilitated by an avian veterinarian. Overdosage of an intramusculary injected dissociative anaesthetic such as tiletamin/zolazepam (Zoletil©) should be used to induce unconsciousness. Once deep level of unconsciousness is achieved terminal euthanasia can be achieved by cervical dislocation and or thoracic compression depending on the size of the species. In the field, if drugs or chemical agents are used then potential secondary toxicity must be considered for potential predators and scavengers of carcasses. Death should be verified prior to disposal of the body by confirming absence of movement, absence of respiratory and heartbeat activity for at least three minutes and the onset rigor mortis.

Cervical dislocation

This technique can be done on small birds less than 100 g body weight using a pair of long-nose pliers or other instruments that can crush the first cervical vertebra followed immediately by disarticulation of the atlanto-occipital joint and severing of the spinal cord. A high degree of skill is required and training should be completed using deeply anaesthetized birds.

Cervical dislocation is acceptable for poultry less than 3 kg body weight, however a secondary method such as decapitation or exsanguination should be used to ensure rapid death.

Flock Depopulation

Planned euthanasia of large numbers of birds, flocks and poultry should be done in the most humane way possible. **Methods based on nitrogen-foam** that minimize distress and cause death by anoxia are acceptable. These require birds to be held in a confined space with airtight walls and flooring.

Non-recommended methods

Skull rupture

Euthanasia of small birds (less than 100 g body weight) by rapid concussive stunning through a blow to the skull **is unacceptable**. While this technique can induce lethal physical disruption of brain activity a high degree of technical skill is required and it **must be followed promptly** with direct penetrative destruction of the brain using a pithing probe. This method should never be done in view of members of the public or other birds or animals.

Thoracic compression

Thoracic compression is an unacceptable method of euthanasia for any bird species. This is because actions that restrict respiratory muscle activity are not acceptable as the sole agent for euthanasia. Consciousness might be maintained for a long period until the point of cerebral death which occurs by hypoxaemia and hypercapnia.

Hypothermia and Drowning

Except for the euthanasia of embryonated eggs, euthanasia by the induction of hypothermia in a refrigerated container or drowning are not acceptable methods. Bird embryos that have attained at least 50% incubation have developed a neural tube sufficient for pain perception; therefore they should be euthanized by similar methods used in avian neonates. Eggs of unknown incubation time should be assumed to be at least 50% incubated.

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