

AFRICAN PYGMY HEDGEHOG CARE

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Joanna Hedley examines the common problems that may spike a practitioner's interest in these animals

Summary

African pygmy hedgehogs (*Atelerix albiventris*) can make entertaining interactive pets if handled from a young age. Housing requirements are relatively simple, although supplementary heating is necessary to prevent the development of torpor. The natural diet of an African pygmy hedgehog consists of a large variety of insects, as well as occasional slugs, snails and small vertebrates. Usual recommendations in captivity are for a balanced commercial hedgehog food to make up the majority of the diet, with a variety of live insects to be offered two-to-three times per week. Clinical examination and diagnostics follow similar principles to that of other small mammals, although general anaesthesia is often required for a complete examination. Commonly seen conditions include wobbly hedgehog syndrome, neoplasia, obesity and dental disease, although a variety of other conditions are also discussed.

Key words

African pygmy hedgehog, *Atelerix albiventris*, wobbly hedgehog syndrome

AFRICAN pygmy hedgehogs (*Atelerix albiventris*) originate from west and central Africa, where they live a solitary life, mainly sleeping during the day and coming out to forage at night.

They can make entertaining, interactive pets if handled from a young age, and can live for between five to seven years if looked after correctly.

Hedgehogs should be housed in a large enclosure, with smooth walls and floors to prevent limb entrapment. Enclosures should be secure (hedgehogs are great escape artists), well ventilated, and a deep layer of bedding should be provided.

Suitable substrates include shredded paper or wood shavings (not sawdust). In the cage, hide boxes and a solid wheel for exercise should be provided. Temperatures should be maintained between 24°C to 30°C for these tropical animals, and the enclosure should be placed out of direct sunlight to avoid extremes of temperature.

Unlike their European counterparts, African hedgehogs do not truly hibernate, but can undergo periods of torpor if subjected to extreme temperatures. Supervised exercise within a confined area in the house is encouraged, but it is important to prevent access to anything that could be chewed, eaten or destroyed.

Hedgehogs may be littertrained, but are generally very messy animals and the enclosure will need frequent cleaning to help prevent disease. They are not social animals, and should be kept alone to prevent fighting.

The natural diet of an African pygmy hedgehog in the wild consists of a large variety of insects, as well as occasional slugs, snails and small vertebrates. This is difficult to replicate in captivity, so usual recommendations are for a balanced commercial hedgehog food to make up the majority of the diet, with a variety of live insects to be offered two to three times per week. Additional vitamin and mineral supplementation should be applied to any insects given. Cat food and dog food has traditionally been fed, but this often results in obesity.

Obesity is a common problem in captive hedgehogs, so it is important to limit food amounts by feeding only at night and removing any uneaten food early in the morning. Water should always be freely available, either in a drinking bottle or shallow bowl.

Clinical approach

On initial presentation, the first challenge is often to encourage your patient to unroll for examination. Some hedgehogs are well socialised and will readily unroll ([Figure 1](#)), but others may be more cautious in unfamiliar situations ([Figure 2](#)).

Sometimes time and patience may be all that is necessary, but if this is not successful then unrolling may be encouraged by stroking the spines firmly from head to tail, until the hedgehog begins to relax. Once the hindlimbs begin to extend, they may be grasped and extended in a “wheelbarrow” posture ([Figure 3](#)) to allow a limited clinical examination. Placing the hedgehog on a

clear surface or wire mesh may also be helpful in allowing a better view of the ventrum in uncooperative patients.

Full clinical examination (especially to assess the oral cavity) and further diagnostics will, however, usually require sedation or general anaesthesia.

General anaesthesia in hedgehogs is most easily achieved with the use of a gaseous anaesthetic, such as isoflurane or sevoflurane, via an induction chamber or mask ([Figure 4](#)). Intubation is difficult, but possible with small endotracheal tubes (1.0mm to 1.5mm), although for short procedures anaesthesia can usually be maintained via a mask.

Under anaesthesia, blood samples may be taken from the lateral saphenous, femoral or cephalic veins. For larger volumes, the anterior vena cava is also useful, but it is important to note that the hedgehog heart is more cranial than in some other species, so a short (1/2in to 5/8in) 25g to 27g needle should be used to avoid inadvertent cardiac damage. Access is via the notch between the manubrium and first rib, with the needle directed towards the opposite hip.

Anaesthesia is also necessary for radiography in most cases. It is important to try to reduce the superimposition of the spines when positioning the hedgehog in lateral recumbency by using a clip or instrument to pull them dorsally. Superimposition is impossible to avoid on dorsoventral views, so these may be harder to interpret.

In terms of hospitalisation and treatment, hedgehogs are similar to other small, exotic, pet mammals. Hospital cages should have a hide area and be quiet, easy to clean (hedgehogs are very messy patients) and secure. They should also be kept warm (24°C to 30°C) to prevent torpor.

If a specialised hedgehog diet is not available, cat or dog food may be fed as a shortterm measure, but ideally low-fat varieties should be selected.

Anorexic patients may be tempted to eat with carnivore support diets. Some will tolerate syringe feeding ([Figure 5](#)), although hedgehogs can be notoriously fussy over food, so if it is possible to continue them on the brand of food that they are used to, then this is preferable.

No drugs are specifically licensed for use in hedgehogs, but anecdotal doses are generally extrapolated from those used in cats and dogs. Routes of administration are limited due to the handling difficulties previously described, so most medications are given orally or by subcutaneous injection.

Unfortunately, the hedgehog's keen sense of smell will often detect oral medications hidden in food, so this is not always a reliable route for noxious medications. Subcutaneous injections may be given in any location, but appear to be absorbed best if given at the "skirt" (the area where the spines meet the ventrum). Intramuscular injections may be given when the patient is conscious, but

are easier under general anaesthesia, and for intravenous injections, anaesthesia is essential. Unfortunately, intravenous catheters are difficult to maintain, but an alternative route for fluid therapy would be via an intraosseous catheter placed into the tibia under general anaesthesia. These can normally be maintained, even when the hedgehog is rolled up. Fluids may be administered at a minimum rate of 50ml/kg/day for maintenance.

Common problems

• **Wobbly hedgehog syndrome (WHS)**

Characterised by progressive ataxia and weight loss, this is unfortunately an increasingly commonly seen condition in hedgehogs. Initial presentation is usually a one to two-year-old hedgehog with mild hindlimb ataxia.

Neurological signs may initially wax and wane, but in 90 per cent of cases the condition progresses to total paralysis within around 15 months (Graesser, 2006). There appears to be a familial tendency, although the exact pathogenesis of the condition is not fully understood. Differential diagnoses include trauma, disc disease, arthritis and even cardiac disorders.

Definitive diagnosis requires postmortem and histopathology, which usually reveals vacuolisation of the white matter of the brain and spinal cord with associated neurogenic muscle atrophy. Treatment has so far been unsuccessful, and euthanasia is recommended for advanced cases.

• **Neoplasia**

A variety of neoplasia have been reported in hedgehogs and appear very common, with studies indicating incidences of more than 30 per cent.

Unfortunately, the majority are malignant tumours, such as mammary gland adenocarcinoma, lymphosarcoma and oral squamous cell carcinoma.

Treatment options have not been extensively studied in hedgehogs, but regular health checks may allow detection and surgical excision at an early stage and should, therefore, be encouraged.

• **Obesity**

Obesity is commonly seen in captive hedgehogs, resulting in an inability to fully roll up, arthritis, hepatic lipidosis and, potentially, cardiac disease. Regular weight checks ([Figure 6](#)) should, therefore, be encouraged, and form part of every clinical examination.

• **Dental disease**

Tartar build-up and associated periodontal disease is another commonly seen problem in captive hedgehogs, especially in those fed wet diets. Feeding a complete dry diet should, therefore, be encouraged. Routine dental treatment may also be required in the same way as for cats and dogs.

• **Gastrointestinal or hepatic disease**

A variety of gastrointestinal diseases have been reported in pet hedgehogs, including bacterial, viral and parasitic infections.

Of these, the most significant is probably salmonellosis, due to its zoonotic potential. As with other species, clinical signs include profuse diarrhoea and weight loss, although hedgehogs may also carry this asymptotically, so good hygiene and wearing protective gloves should always be considered when handling this species. From the reverse viewpoint, for hedgehogs a significant zoonotic disease is *Herpesvirus simplex* type-1, which causes the relatively harmless cold sores in humans, but has led to hepatic failure and death in one African hedgehog (Allison, 2002). Owners with active cold sores should, therefore, be warned against handling their pet hedgehogs until the sores subside. A more common hepatic disorder would be hepatic lipidosis, usually secondary to obesity, as previously discussed.

• **Skin disease**

– External parasites. These include mites (mostly *Caparinia tripolis*) and fleas (mostly *Archaeopsylla erinacei*, the hedgehog flea, although cat and dog fleas may also be found on hedgehogs). Treatment is with standard ectoparasiticides, although care should be taken to avoid overdosage, especially with topical products such as fipronil spray.

– Dermatophytosis. *Trichophyton erinacei* is the most commonly seen, but *Microsporum* species may also be involved. Clinical signs start with crusting and mild alopecia, especially around the face and pinnae, but may progress to affect the whole body, leading to dramatic spine loss and alopecia.

Alternatively, infections may be asymptomatic – another important reason for good hygiene and wearing protective gloves when handling this species. Most of these dermatophytes will not fluoresce under a Wood's lamp, so diagnosis is by hair pluck and fungal culture. A variety of topical and systemic antifungals have been tried with varying success, with systemic terbinafine anecdotally resulting in the best response. This should not, however, be used if hepatic dysfunction is suspected.

• **Respiratory disease**

A variety of infections have been reported in hedgehogs, including *Bordetella bronchiseptica*, *Pasteurella multocida* and *Corynebacterium*. In wild hedgehogs, lungworm infections are also a

significant problem, so although less likely in captivity, a faecal screen should be performed in every dyspnoeic patient. The first challenge is in differentiating the normal snuffling noises that a hedgehog may make from true dyspnoea. This may be done by careful observation from a distance. Marked nasal discharges or an abdominal component to the breathing are abnormal. If truly dyspnoeic, the patient should be stabilised with supplementary oxygen until considered suitable for general anaesthesia – at which point, radiographs with or without tracheal washes for culture may be performed. Non-respiratory causes of dyspnoea (such as cardiac disease) should also be ruled out. Treatment regimes are similar to those used in other small exotic pet mammals.

• Cardiac disease

Cardiomyopathies are probably under-diagnosed in hedgehogs, but have been found in 38 per cent of hedgehogs in one postmortem study (Raymond and Garner, 2000).

Heart murmurs may be audible in a cooperative patient, but can be difficult to detect in moving hedgehogs, especially ones that are snuffling or grunting, as is common on examination. The first clinical signs to note, therefore, may often be dyspnoea, weight loss, collapse or even acute death. Diagnosis is usually by echocardiography and normal values are available for this species (Burgdorf-Moisuk, 2009). Cardiac medications have been used in the same way as for cats and dogs, but the long-term prognosis is poor.

- Some drugs mentioned in this article are unlicensed for veterinary use.

References and further reading

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