Anorexia In Snakes – Common causes and treatments

Firstly it is vital to understand that anorexia in reptiles is a symptom and not a disease. Anorexia can have a wide range of underlying causes; infectious disease, husbandry deficiencies, metabolic and sometimes normal physiological processes.

Husbandry Related Anorexia:

A significant proportion of anorexia cases will be directly or indirectly connected to husbandry. Any snake presenting with a history of anorexia should have a thorough husbandry evaluation performed. This should include evaluation of; heating, lighting, humidity, substrate, vivarium size and material, cleaning regime and feeding regime (type, size and frequency of feeding). Pre-prepared husbandry questionnaires can be time saving in the consult but if provided to the owner before the visit date, allow them to look up the correct answers, tending to be less reliable then direct questioning. The origin of the snake (captive bred, captive farm or wild caught) should be identified. Fortunately wild caught snakes are now rare in the UK pet trade. When they do present some simply do not adapt to captivity – often termed a 'maladaptation syndrome' and fail to eat.

Stress in reptiles can be a common cause of anorexia. Along with the husbandry it is important to ask about handling – who handles the snake, frequency of handling and time out of the cage. It is important to remember snakes are not a domesticated pet – although many commonly kept species tolerate handling well, some species are easily stressed by excessive or rough handling which can result in anorexia. The location of the cage in the house is important. Is it in a high traffic area that can lead to nervousness and striking at the glass in sensitive species? Are there loud noises or excessive vibrations? Some shy reptile species may not feed when being watched or if there is too much external activity around the vivarium. Other species are very specific with regards to feeding times – crepuscular reptiles feed best at dawn and dusk. Nocturnal reptiles may not feed at all if food is offered only during the day, even if they are in perfect health. Some clients provide night-time heat using light emitting bulbs – reptiles require a day night photoperiod and lights should never remain on 24hours a day. A snake vivarium must have adequate places to hide for the occupant to feel secure. Terrestrial snakes require hides such as caves and tunnels. Generally at least one hide per snake in the cool end and one hide in the hot end allows thermoregulation while remaining secluded. However for arboreal snakes hides on the floor are clearly not adequate. Branches with artificial or living foliage are used to provide sufficient cover for the occupant to feel secure. Many owners make the mistake of sacrificing vivarium width for extra height in arboreal snakes – this makes horizontal thermoregulation difficult to achieve.

Reptiles from temperate climates may have a period of dormancy – this usually begins in the autumn. This is part of preparation of brumation during winter. Brumation allows reptiles to survive winter temperature that are below their POTZ – preferred optimum temperature zone. Some species will enter brumation regardless

of the temperature of their environment. It is presumed this is instigated by other triggers such as photoperiod, humidity and possibly atmospheric pressure. Brumation is often associated with a period of anorexia. However it is incorrect to make assumptions. Snakes where anorexia is suspected to be as a result of brumation are still best examined for any underlying cause of illness. Making assumptions that anorexia is caused by brumation can mean disease in the early stages is missed until it is developed into a more serious condition.

The husbandry history needs to identify if the correct diet is being fed. The majority of carnivorous snakes kept in the UK will be maintained on a diet of frozen thawed rodents….however exceptions do apply. Many garter snakes prefer a diet of fish and rough green snakes are insectivorous. Just because adults readily accept frozen thawed rodents doesn't mean the juveniles will immediately take to the diet voluntarily. A common cause of anorexia in juvenile snakes occurs from attempting to feed rodents to species that in the wild would mainly eat lizards (ie Lampropeltis spp). It is important to convert these snakes onto a diet which will be readily available. Scenting rodents with shed lizard skin among other techniques can work. Another example is Royal pythons. They will commonly prefer gerbils (supplied frozen and thawed before feeding) as a food source – however a commercial source of these rodents as feeder animals is not reliable and can lead to problems later in life when shortages from distributers mean rats or mice are the only option but the snake is wedded onto eating gerbils.

Normal physiological causes of anorexia are seen commonly in snakes. Gravid females will frequently stop feeding during gestation. Some species of python such as Green Tree Pythons also maternally incubate the eggs and will refuse food during this period. This can lead to a significant loss of condition due to the prolonged fast during a period of increased metabolic demands. Many snakes will also be anorexic during the process of shedding (ecdysis). A snake's vision is impaired as the eyes cloud in the days prior to shedding. It is important to note that hatchling snakes will often refuse feed until after the first shed.

Non-infectious disease

Gastrointestinal problems may lead to anorexia. Stomatitis causes oral pain and dysphagia in advanced cases. Underlying causes can include trauma (striking at feeding tongs, striking at glass), immunosuppression due to poor husbandry and secondary opportunistic infection. Stomatitis may extend to causing oesophagitis or gastritis. Dental disease can be seen in some snakes. Tooth loss is an occasionally seen as a sequalae of severe stomatitis. The tooth loss leads to dysphagia and a difficulty for the snake to hold prey and prehend it to the back of the mouth. Owners commonly report animals striking the prey with it subsequently falling to the floor without it being consumed.

Overfeeding is actually a common long-term cause of anorexia in snakes. When surveyed many reptile owners report feeding time to be their favourite aspect of

reptile keeping. This may partly be the reason snakes are commonly overfed in captivity, often accompanied with reduced exercise compared to wild counterparts. This results in obesity which predisposes to hepatic lipidosis, Hepatic lipidosis often presents as non-specific symptoms commonly starting with anorexia.

Gastrointestinal neoplasia is sporadically seen in reptiles. Carcinomas are the most frequently seen at the authors practice. Diagnostic imaging, endoscopy and biopsy techniques are commonly used in combination to make a diagnosis. Solitary lesions can respond favourably to surgical excision however many cases involve diffuse or disseminated lesions requiring either systemic or invasive surgical treatment. Extra-mural, non gastrointestinal mass's can lead to functional obstruction and anorexia.

Impactions and foreign bodies (while certainly more common in lizards and tortoises) can be seen sporadically in snakes. Substrate material can be ingested when animals strike for food. If rodents are wet after being thawed substrate can stick to the fur and become ingested. The impactions are rarely radiodense so ultrasound imaging or CT are often used to diagnose rather then radiography. Upper GI endoscopy can also be beneficial and is technically straightforward in snakes.

Infectious disease:

Parasitic disease can lead to anorexia. The protozoal disease cryptosporidium can cause anorexia and commonly regurgitation in snakes. Outbreaks are particularly common at breeders/shops affecting hatchling/juveniles animals. Poor husbandry, hygiene and inadequate temperatures can precipitate its spread amongst a collection. A mid-body swelling or blue discolouration is occasionally reported associated with the disease. Gastrointestinal nematodes and cestodes are rare in captive bred snakes but can commonly be seen in captive farmed and wild caught specimens. Part of the investigation on anorexia would involve a complete faecal screen including examination of a direct preparation, floatation and stained cytology sample. Cryptosporidia stain positive with acid fast stains. The reliability of diagnosing cryptosporidia on faecal screens is low – faecal examination can be combined with examination of gastric lavage samples to increase the sensitivity.

Paramyxovirus, herpes virus and adenovirus are the most commonly reported viral causes of gastroenteritis with associated anorexia in snakes. Viral infections are often associated with immunosuppression and leukopaenia, many of the affected animals will also be suffering from secondary bacterial, fungal or parasitic infections. Diagnosis of viral infections can be challenging. Many commercial diagnostic tests lack sensitivity and specificity. Intermittent shedding and access to suitable tissue at biopsy can make PCR analysis challenging. Serology for many viral infections (other then when rising titres are identified) often only confirms exposure and not active infection. Ectoparasites such as Ophionyssus spp are implicated in the spread of viral diseased amongst collections and good monitoring and prompt treatment of ectoparasites is vital.

Treatment:

Given that anorexia is a symptom and not a disease it is vital that the underlying cause is identified so correct treatment can be instigated. Husbandry modifications are a vital part of any treatment regime; I am sure to warn owners that without the correct husbandry many of these cases will fail to recover. Patients may often require nutritional support – in the form of gavage feeding with semi-elementary diets to correct negative energy balance and prevent secondary metabolic complications. The increased stress associated with tube or assist feeding has to be weighed up against the benefits.

True or false – gastrointestinal nematodes are a common cause of anorexia in pet snakes: False

True or false – royal pythons commonly present anorexic due to a preference for lizards in their diet: False

Which three normal physiological behaviours are associated with anorexia?

Answer: Brumation, gestation, incubation, ecdysis