

APPROACH TO THE ANORECTIC RABBIT

by Susan A. Brown, DVM

Anorexia is a common clinical presentation in the pet rabbit. Of course, anorexia is not a disease in itself but can be created by any number of conditions, particularly those that cause pain. The domestic rabbit has the physiology and behaviour of a prey species and will respond to stress or pain like its wild ancestors.¹ A highly stressed rabbit can experience a drop in body temperature, renal ischaemia and an increase in catecholamine production.² Discerning the cause of anorexia requires a detailed history, a thorough physical examination and a variety of diagnostic procedures. In my practice the most common conditions causing anorexia in the pet rabbit include dental disease, gastrointestinal disorders (gastric stasis, intestinal ileus, complete obstruction), urogenital disease, hepatic disease, renal disease, respiratory disease, severe pododermatitis, arthritis, fractures and ingested toxins. Nutritional support of the rabbit during the diagnostic phase is vitally important to prevent or reverse hepatic lipidosis and to reestablish proper gastrointestinal tract (GIT) motility.

History

It is essential to start with a detailed history. Obtain a detailed description of the environment, including the cage setup, areas to which the rabbit has access, cage mates, other household pets and frequency of handling. Rabbits prefer a cool environmental temperature at an average of 16° to 21°C (61° to 70°F).³ If the ambient temperature goes above 85°F, particularly when there is high humidity as well, the rabbit can become anorectic. Look for access to toxins such as poisonous plants and lead-based paint. If the rabbit is litter box trained, ingestion of clay cat litter and subsequent GIT impaction can result. Lack of exercise and a damp, dirty floor can lead to sore, painful feet. Cage mates can prevent access to food and cause stress through aggression. Other household pets, particularly dogs, may terrorise a rabbit. Excessive and inappropriate handling may lead to a high stress level or injuries. Rabbits that are caged or allowed to graze outdoors will have access to a variety of parasites and predators.

Investigate the patient's diet, including the exact types and amounts of foods fed, where they are obtained and how they are stored. Clients often neglect to mention food treats (particularly those that are high in starch or fat), which can be a major factor in the aetiology of some GIT disorders. Rabbits refuse to eat food that is spoiled, often detecting the foul odour before the owner notices a problem. Abrupt diet changes can lead to anorexia. Rabbits may become anorectic if they are denied access to water for 24 hours or longer as can happen when water sources freeze or sipper-tube bottles become clogged. In addition, rabbits may object to the taste of the water if it contains certain substances such as nutritional supplements or medications.

Clinical Signs

Review the clinical signs. A gradual onset of anorexia would indicate a chronic condition as opposed to an acute onset (24 hours or less) accompanied by obvious depression, which would indicate a potentially life-threatening emergency. Often the client observes a gradual decline in the number and size of the hard faeces before noticing a decrease in feed intake. The presence of soft stools interspersed among normal hard faeces indicates a mild to moderate hindgut dysbiosis. An acute onset of profuse diarrhoea suggests a life-threatening enteritis or serious systemic disorder. Note changes in the frequency and location of urination. Normal rabbit urine can periodically have a reddish-orange colour due to plant pigments or porphyrin, which must be differentiated from haematuria. Look for evidence that the patient is having difficulty prehending food (e.g. hanging head over the food or water bowl, eating more slowly, selectively eating only soft or small food items, and dropping food out of its mouth). Determine if there have been signs of pain (e.g. lack of activity, hunched posture, excessive tooth grinding, or ptyalism).

Physical Examination

Do not perform the physical examination until the patient is first observed for any signs of severe stress (e.g. inability to move, weak posture, dyspnea and a dull, lifeless look to the eyes). If an examination can be safely undertaken, proceed with gentle and minimal handling. Perform a thorough oral examination on all rabbits. This can be accomplished in the awake animal using an otoscope or a canine vaginal speculum to evaluate molar and premolar crowns and buccal and lingual surfaces. Use anaesthesia if necessary, particularly in fractious animals or those with lesions in the most caudal areas of the oral cavity. Dental disease is one

of the most common causes of anorexia in my practice. Carefully palpate the mandible and maxilla for evidence of tooth root extension, masses or pain. Ocular discharge often indicates incisor root hyperextension.⁴ Look for nasal discharge, which may be found dried on the medial aspect of the forelimbs as the rabbit "wipes" its nose. Auscultate the thorax for lower respiratory or cardiac disease. Careful abdominal palpation can reveal abdominal masses, enlarged uterus, cystic calculi, gas, a fluid-filled GIT or localised areas of pain. Palpate the thin-walled stomach and bladder gently to avoid serosal haemorrhage and potential rupture. Take a rectal temperature with care to avoid puncturing the delicate rectal mucosa. The majority of anorectic rabbits have a normal (38.5° to 40°C [101.3° to 104°F])⁵ or subnormal body temperature. A body temperature of 105°F or higher may indicate hyperthermia or an acute and severe inflammatory process.

Diagnostic Testing

It may be necessary to perform one or more diagnostic procedures to determine the cause of anorexia. If the patient is in a highly stressed or painful state, excessive manipulation to obtain clinical samples can worsen the condition. Use analgesia, sedation or anaesthesia as needed to minimise fear, potential injuries or discomfort, particularly for procedures such as radiography and intravenous or intraosseous catheter placement. Isoflurane used alone is probably the safest choice for a debilitated or depressed rabbit.⁶

There are a wide range of diagnostics that can be used in these patients including radiography, ultrasonography, haematology, serum biochemistry, serology, urinalysis and bacterial culture and sensitivity testing. In my opinion, radiography is one of the most valuable diagnostic tools used to determine the cause of anorexia in the rabbit (due to the fact that many painful diseases have radiographic signs) but it is often underused. As mentioned in the paper on page 1 of this Journal, dental disease is a common cause of anorexia as a result of pain from either hyperextended molar roots or overgrown crowns and enamel spurs.⁴ If the crowns of the teeth are grossly normal, it is often assumed that there is no dental disease. Unfortunately, this may not be true, and hyperextended roots can be identified only on high detail skull radiographs. I perform a minimum of one dorsoventral and one lateral skull radiograph on rabbits exhibiting epiphora, nasal discharge, ptyalism, pain on palpation of the mandible or maxilla, or any obvious tooth crown disorders. Radiography is useful in differentiating gastric stasis and intestinal ileus from GIT obstructive disease. Radiographs can reveal skeletal disease such as vertebral spondylosis, which is common in older rabbits. Urogenital disease can often be identified radiographically, and contrast studies aid in the diagnosis.

Therapy

A total therapeutic plan for the anorectic rabbit obviously depends on the final diagnosis, but often the patient needs to receive some type of support during the diagnostic process. Many of these patients need to be hospitalised, and it is important to place them in a quiet area of the hospital, away from barking dogs and excessive activity. Provide a litter box with paper or pelleted bedding to serve as both a toilet and a hide area.

Rabbits that are anorectic often have GIT hypomotility or stasis and can rapidly develop hepatic lipidosis. In addition, the ingesta, particularly in the stomach and caecum, can become dehydrated and compacted, further complicating the patient's condition. Unless the rabbit is suspected of having a GIT obstruction, it is important to provide immediate nutritional support ([see box](#)). Hay and fresh food provide much needed fibre and fluid to stimulate peristalsis and rehydrate ingesta in the GIT. Place fresh grass or alfalfa hay along with leafy greens and fibrous fruits in the cage. Many anorectic rabbits that have never been previously exposed to hay or fresh foods will eat these items within minutes of seeing and smelling these foods. Favourite fresh foods include romaine lettuce, dandelion greens, parsley, carrot tops, wheat grass, apple and pear. Do not use light-coloured lettuce (such as iceberg or bibb) as it is primarily composed of water and has little nutritional value. A commercial pelleted rabbit food can be placed in the cage, but it has been my experience that this is often the least preferred food item.

NUTRITIONAL SUPPORT OF THE DEBILITATED RABBIT: FEEDING GOALS

- Rehydrate the ingesta
- Provide high indigestible fibre to encourage peristalsis
- Provide carbohydrates to return patient to a positive energy balance

- Correct fluid deficits, if any

If the patient refuses to eat on its own, it will be necessary to provide food through syringe feeding or a nasoesophageal (NE) tube. An NE tube can be placed easily and causes only mild temporary discomfort in the awake patient.¹ There are a variety of syringe or tube feeding formulas that have been suggested for the rabbit. Canned pumpkin (not pumpkin pie filling) can temporarily be used alone as a source of fibre, carbohydrates and fluid, and it is well accepted. An example of a more complex formula for long-term feeding consists of blenderised leafy greens mixed with alfalfa powder or ground commercial pellets and an oral electrolyte solution added to make a liquid consistency. Avoid the use of high fat paste-type nutritional supplements often given to dogs and cats. The use of laxatives and protein-digesting enzymes has been advocated, but I have found that these products offer no additional help. Fluid therapy is often necessary in these patients. Maintenance fluid level for the rabbit is approximately 80 to 100 ml/kg q24h. Fluid deficits should be corrected gradually over the first 12 to 24 hours. Subcutaneous fluids are adequate in the mildly dehydrated, alert patient and intravenous or intraosseous fluids should be used in the debilitated or severely depressed patient. Intravenous catheters can be placed in the cephalic, lateral saphenous or jugular vein. Intraosseous catheters can be placed in the femur, humerus or tibia.

Use analgesics to enhance the patient's comfort and chances for therapeutic success. A rabbit may visibly relax and start eating once the pain is reduced. Analgesics are particularly useful with dental, skeletal and GIT disorders. Commonly used analgesics include the nonsteroidal analgesics (flunixin meglumine at 1.1 mg/kg SC q8h) and opioid agonist-antagonists (buprenorphine at 0.01-0.05 mg/kg IV, SC q8-12h or butorphanol tartrate at 0.1-0.5 mg/kg IV, SC, IM q4h). We are currently also successfully using carprofen at 1 mg/kg PO q12-24h. Gastrointestinal motility drugs can aid in the return of normal gut peristalsis, particularly in cases of intestinal ileus or gastric stasis. Do not use these products if a complete GIT obstruction is suspected. Two commonly used agents are metoclopramide (0.2-1 mg/kg SC, PO q8h) and cisapride (0.5-1.0 mg/kg PO q8-24h). Since these drugs have different areas of effect, they can be used simultaneously, which is particularly useful in moderate to severe cases of GIT ileus.

Vitamin therapy can be considered, particularly in the patient that may have not had access to its caecotropes for an extended period. Give B-complex vitamins at a feline dose. Vitamin C may have a beneficial effect by inhibiting toxin production by *Clostridium spiroforme* and thus reducing the risk of enterotoxaemia.⁷ In addition, one study indicated that the plasma ascorbic acid concentration was greatly reduced in rabbits exposed to stress.⁸ Ascorbic acid can be administered at 50 to 100 mg/kg q12-24h.

Antibiotics are frequently used indiscriminately in rabbits exhibiting anorexia. In my experience the great majority of disorders that lead to an anorectic state in the pet rabbit are not infectious. Rabbits have a delicately balanced caecal flora (see article on page 1 of this Journal), which is already being disrupted by GIT hypomotility or stasis as a cause or result of the anorexia. Adding antibiotics inappropriately to this situation can be disastrous. In addition, the continual, unnecessary use of antibiotics in these patients can potentially lead to drug resistance. Therefore use antibiotics that are safe for rabbits and only when appropriate based on diagnostic testing and clinical observation.

References

- 1 Brown SA: Clinical Techniques in Rabbits. Semin Avian Exotic Pet Med 6(2):86-95, 1997.
- 2 Jenkins JR, Brown SA: A Practitioner's Guide to Rabbits and Ferrets. Lakewood, CA, AAHA, 1993, p 13.
- 3 Harkness JE, Wagner JE: The Biology and Medicine of Rabbits and Rodents, ed 4. Media, PA, Williams & Wilkins, 1995, p 16.
- 4 Crossley DA: Dentistry for Small Animals other than Cats and Dogs. Second Annual Midwest Exotic Pet Seminars Proceedings. Schaumburg, IL, Mar 97.
- 5 Donnelly TM: Basic Anatomy, Physiology and Husbandry, in Hillyer EV, Quesenberry KE (eds): Ferrets, Rabbits, and Rodents: Clinical Medicine and Surgery. Philadelphia, WB Saunders, 1977, p 148.
- 6 Mason DE: Anaesthesia, Analgesia and Sedation for Small Mammals, in Hillyer EV, Quesenberry KE (eds): Ferrets, Rabbits, and Rodents: Clinical Medicine and Surgery. Philadelphia, WB Saunders, 1977, p 384.

7 Cheeke PR: Rabbit Feeding and Nutrition. Orlando, Academic Press, 1987, pp 150-151.
8 Verde MT, Piquer JG: Effects of Stress on the Corticosterone and Ascorbic Acid (Vitamin C) Content of the Blood Plasma of Rabbits. J Appl Rabbit Res 9:181-185, 1986.

Acknowledgments

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