Common Emergencies in Rabbits, Guinea Pigs, and Chinchillas

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KEYWORDS

• Rabbits • Chinchillas • Guinea pigs • Emergency

KEY POINTS

- Many illnesses seen in small hindgut fermenting herbivore exotic pets are the result of suboptimal diets and husbandry.
- Diets lacking sufficient coarse, high-fiber hays can lead to dental disease and abnormal cecal fermentation, resulting in dysbiosis, enteritis, stasis, and/or life-threatening obstruction or volvulus.
- Rabbits and rodents are exceptionally sensitive to antibiotics and corticosteroids, and care must be taken to choose an appropriate therapy for each species.

INTRODUCTION

Rabbits, guinea pigs, and chinchillas are small hindgut fermenting herbivores that are popular exotic pets. Although they share many physiologic features, they have each developed unique adaptive differences to survive in often-harsh environments on grass-based diets. The illnesses seen in them as pets are frequently related to suboptimal diets and husbandry (small enclosures, poor ventilation, low-fiber and less-abrasive diets) but also to the relative longevity of captive animals (chronic disease, immunosuppression, infection). As prey species, they attempt to mask their illness, and can present with an acute problem (anorexia) that is often the result of several chronic (poor diet, dental disease) and subacute (dysbiosis, enteritis) problems. This article discusses some of the more common diseases seen in rabbits, guinea pigs, and chinchillas presenting for emergent evaluation, highlighting differences. Management of acute trauma and shock is covered in the adjoining article (See Huynh M: Rabbit Physiology and Treatment for Shock, in this issue).

Disclosure Statement: The author has nothing to disclose.
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Vet Clin Exot Anim ■ (2016) ■–■
http://dx.doi.org/10.1016/j.cvex.2016.01.003 **vetexotic.theclinics.com**
1094-9194/16/$ – see front matter

ORAL AND GASTROINTESTINAL DISEASE

Anorexia and Dysbiosis

Anorexia in small hindgut fermenting herbivores results from many different ailments, ranging from dental disease and malocclusion, chronic gastrointestinal tract disturbances, and deficiencies from inappropriate diets, antibiotic use, painful conditions, environmental stressors, and acute traumatic events, such as gastrointestinal stasis (ileus), distension, obstruction, and volvulus. The onset of anorexia, even if it is the result of a chronic process, is a medical emergency in these animals, as gastrointestinal stasis, fluid and electrolyte imbalances, and hepatic lipidosis can develop rapidly following cessation of eating.[1]

The intestinal tracts of rabbits, guinea pigs, and chinchillas are adapted to perform hindgut (cecal) fermentation of coarse, high-fiber grass hays. Although all are slightly different, the cecal intestinal flora contains abundant gram-positive organisms, and a mixture of anaerobic bacteria and low levels of commensal fungi and protozoa. Fermentation supplies glucose and lactose and serves as a significant source of volatile fatty acids. In addition to abundant dry fecal pellets, nutrient-rich cecotrophs are intermittently excreted and are usually promptly reingested. Shifts in the intestinal flora, from inappropriate diets containing low fiber and high carbohydrates, inability to eat coarse grains due to dental disease, or from antibiotic-associated losses (eg, penicillins, bacitracin), allows for proliferation of opportunistic pathogens (*Encephalitozoon coli, Pseudomonas aeruginosa, Clostridium* spp.), or dysbiosis. These pathogenic organisms can cause a secondary bacterial enteritis or enterotoxemia illness, especially in young and immunocompromised animals.[2,3]

The dysbiotic intestinal microenvironment is less efficient at fermentation, leading to gastrointestinal stasis/ileus and increased gas production. Because rabbits, guinea pigs, and chinchillas are unable to vomit or eructate due a prominent limiting ridge at the gastroesophageal junction, this gas accumulates in the stomach causing gastric dilation. Rabbits normally have retained ingesta and fur within their stomachs that are regulated by continuous gastric fluid production and intestinal motility. With hypomotility and subsequent dehydration of gastric and intestinal contents, the retained ingesta and fur pellets coalesce into a firm mass that can cause obstruction. Obstruction is most frequent at the T-shaped junction of the ileum and cecum: the sacculus rotundus. In guinea pigs, gastric distension can be complicated by a life-threatening volvulus.[2,3]

Dental Disease

Rabbits, guinea pigs, and chinchillas have continuously growing (elodont) teeth with long crowns (hypsodont) and no anatomic roots (aradicular).[4] In part due to their increased longevity and less-abrasive diets as pets, their teeth (especially the molars and premolars, or cheek teeth) are not effectively ground, and large enamel points and spurs can form, leading to maladjustment of the occlusal angle with impaired mastication, lingual and buccal mucosal trauma, and even tongue entrapment. Apical crown extension into the maxilla can cause significant bony remodeling and sinonasal complications. Secondary infections and abscess formation are common, and can be difficult to detect in long-haired breeds. In guinea pigs, inadequate vitamin C will accelerate progression of dental disease due to friability of the gingiva and periodontal ligaments. Animals with dental disease develop a preference for softer, low-fiber foods that can exacerbate gastrointestinal stasis and dysbiosis. In addition, incompletely chewed food can form an esophageal obstruction, or choke, especially in chinchillas.[2,4]