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Death and diarrhea in guinea pigs (*Cavia porcellus*)

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A group of 40 young male and female guinea pigs arrived at a pet 'superstore' after they were purchased from a local commercial breeder. Within one week, moderate inappetence was noted in the group. Ten days after arrival, 70% of the guinea pigs had loose feces and were quiet and depressed; a few had profuse yellow, watery diarrhea. Three days later, 15 young female guinea pigs were found dead. Similar problems had occurred sporadically on other occasions and in groups of young rabbits.

Veterinary attention was requested, and on the advice of the veterinarian, one 4-month-old black female guinea pig was selected for a comprehensive clinical examination and necropsy. This guinea pig was socially housed in a cage with other female guinea pigs that had diarrhea and sudden death. Upon physical examination, the guinea pig weighed 300 g and had slightly low body condition (body condition score of 2 on a scale of 1–5). Healthy 4-month-old pigs were typically expected to weigh 350–450 g. The hair coat was rough, and fecal material was adherent to hair around the perineum. No external lesions, signs of trauma or ectoparasites were detected.

We euthanized the guinea pig with an overdose of phenobarbital. On gross pathologic examination of the abdominal and thoracic cavities, we noted that subcutaneous and intra-abdominal fat were present in slightly less than normal amounts. There was mucosal hemorrhage in the duodenum, and the lower part of the intestinal tract contained a normal amount of soft but formed fecal material.

The stomach contained a small amount of food and was otherwise normal. No gross pathological changes were detected in lungs, liver, spleen, urinary tract, brain or genital organs.

Samples of the contents of the small and large intestines were collected immediately after opening of the carcass and examined microscopically for flagellates and ciliates at 200× and 400× magnification. The samples were also examined by a standard flotation method using a solution of 360 mg/ml sodium chloride followed by light microscopy at 200× magnification. Swabs from small and large intestine, and the flotation of the intestinal contents, showed no parasitic ova. Wet swabs for bacteriological and mycological culture were taken from small and large intestines.

Microbiological culture showed the presence of *Enterococcus* spp. and yeasts. The bacterial culture was resistant to sulfonamide and trimethoprim but sensitive to amoxicillin, amoxicillin and clavulanic acid, cephalexin, clindamycin, enrofloxacin, marbofloxacin and oxytetracycline. *Salmonella* spp. and *Campylobacter* spp. were not detected. Intestinal contents were not evaluated for enterotoxin.

Representative tissue samples for histological examination were taken from the heart, lungs, spleen, liver, kidneys, stomach, duodenum and colon. Tissues were fixed in 10% neutral buffered formalin, routinely processed, embedded in paraffin, sliced into 4-μm sections and stained with hematoxylin and eosin. In sections of large intestine, there was a patchy increase in lamina propria

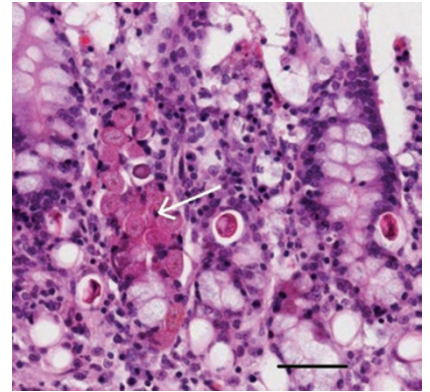


FIGURE 1 | Photomicrograph of a section of large intestine from a young female guinea pig. Large, eosinophilic oval structures (arrow) fill numerous epithelial cells within one intestinal gland. Section was stained with hematoxylin and eosin. Scale bar, 50 μm.

inflammatory cells, including lymphocytes and plasma cells; there was some distortion of normal mucosal architecture, with loss of regularly arranged crypts. Scattered within the mucosa were single or large numbers of cyst-like structures (Fig. 1). No notable lesions were found in sections of heart, lungs, spleen, liver, kidneys, stomach and duodenum.

On the basis of the clinical signs, microbiologic analysis and histopathological findings, what do you think was the cause of diarrhea and death in the guinea pigs? How common is this condition? How would you treat it?

What's your diagnosis?

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