Thomas M. Donnelly, DVM, Column Editor

What's your diagnosis?

Morbidity and Mortality in a Group of Young Guinea Pigs

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Two 16-week-old intact female guinea pigs were presented for medical examination after the death of a third guinea pig in the group. Upon examination, one guinea pig was moribund and cyanotic with evidence of hemorrhagic diarrhea. We anesthetized this guinea pig (guinea pig #2) with pentobarbital (325 mg/4.5 kg i.p.), and then exsanguinated and necropsied it. The remaining guinea pig (guinea pig #3) was mildly depressed and passing soft, normal-color feces. Its hydration was adequate and the rest of its physical examination was unremarkable. During necropsy of guinea pig #2, we found enlarged, rounded bone-cartilage junctions on the ribs. Histologically, the costochondral junctions had physeal fractures, periosteal and medullary fibrosis, irregular physeal column formation, and a generalized lack of physeal mineralization (Fig. 1).

Our AAALAC-accredited research facility had received the three guinea pigs from a commercial breeder (Harlan Sprague Dawley, Inc.) approximately 14 weeks before presentation. Animal care staff housed the guinea pigs in solid-bottom

FIGURE 1: Photomicrograph of a costochondral junction of guinea pig #2. Notice the periosteal and medullary fibrosis (small arrows) and physeal fractures (large arrows). Hematoxylin and eosin.

polycarbonate cages with corncob bedding (Mt. Pulaski, IL). The staff fed the animals a pet store brand diet (Kaytee Products Incorporated, WI) for the first six weeks they housed them in the facility. Concerned that the growing guinea pigs were not consuming sufficient vitamin C, we decided to change them onto a laboratory animal grade diet (Harlan Teklad, WI). For the next seven weeks, in an attempt to transition the guinea pigs to the laboratory animal grade diet without causing anorexia associated with the introduction of a new foodstuff, the animal care staff fed the guinea pigs a combination of the pet store brand diet and the laboratory animal grade

diet. When the clinical veterinarian noted this long-term mixing of diets, she instructed the animal care staff to use only the laboratory animal grade diet. For one week before the guinea pigs were presented for examination, the animal care staff fed them only the laboratory animal grade diet.

List the differential diagnoses for morbidity and mortality in young guinea pigs. How would you diagnose and treat the remaining guinea pigs?

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