Laboratory Animal Science

Acute Gastric Dilatation in Common Marmosets (*Callithrix jacchus*)[1,2]

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Summary | Acute gastric dilatation was diagnosed in a colony of marmosets following antimicrobial therapy with gentamycin and furoxone. All 29 affected animals died from the condition over a period of 5 weeks. *Clostridium perfringens* Type A was demonstrated in gastric contents of all animals. An alteration in the gastric microflora resulting from antimicrobial therapy was postulated as the predisposing factor.

Key Words | Stomach dilatation — *Clostridium perfringens* — Callitrichidae

Acute gastric dilatation is a disease of many animal species characterized by voluminous gas and fluid distention of the stomach, vomiting, collapse, and death (1). The disease occurs infrequently, but in nonhuman primates, it is often a fatal disease involving animals which have been maintained on a long term-basis. Acute gastric dilatation is thus sometimes seen in stabilized, conditioned monkeys whose routine maintenance has been interrupted or suddenly changed by various factors including altered feeding activities or administration of tranquillizing or anaesthetic drugs (1,2).

Case Report

The development of acute gastric dilatation and death in 29 marmosets over a 5-week period following a regimen of antimicrobial therapy prompted the present report. There was an apparent association of the condition with the prevalence of *Clostridium perfringens* Type A in the intestinal contents of the affected animals.

Since 1975, a colony of 180 marmosets have been maintained at Texas A & M University, using triplex and modular indoor-outdoor caging (3) with pea gravel runs. Animals had been in these facilities for approximately 17 months prior to the onset of acute gastric dilatation.

The primary diet for the monkeys consisted of 40-50 g canned diet[3] supplemented daily with mealworms and fruit, as available. Water was available to the animals *ad libitum*.

In December 1978, approximately 4 weeks after of the modular units died on consecutive days. Five days after the first infant died, two adults were found dead in cages adjacent to cages in which infants had succumbed, and a transient diarrhea was observed throughout the colony. *Shigella sonnei* was recovered from the intestinal tracts of the two infants, but subsequent cultivation of the gut contents of the adults and fecal specimens from the remainder of the colony failed to reveal presence of shigellae or other enteric pathogens. Upon isolation of a shigella, however, 59 animals in the affected housing units were treated twice daily for 7 days with 5 mg/kg gentomycin sulfate intramuscularly and 2.25 g/liter furoxone soluble powder in the drinking water, daily for 2 weeks.

Signs of minor gastric distress were then observed, and the animals refused conventional diet while readily accepting small quantities of a liquid diet.[4] In an effort to stabilize gastric discomfort, affected animals were given 2.5 ml/kg bismuth-subsalicylate[5] and 0.02 mg/kg neoscopolamine orally on a daily basis for 5 days. The treatments appeared to be of limited value, and affected animals developed intermittent diarrhea over a period of 3 – 5 days prior to succumbing to acute gastric dilatation. Over a 5-week period, 29 marmosets died. Affected animals were most often found dead or in an advanced moribund state with abdominal dilation in the morning. Efforts to treat moribund animals were unsuccessful.

Pathologic Findings

The intestinal tracts of all animals necropsied (25 animals) were distended with considerable quantities of gas and light-brown fluids. Although gas-filled, none of the stomachs had ruptured. Minute gas bubbles and edema in the subcutaneous fascia of the ventral cervical and abdominal regions were observed. Mucosae of the jejunum and ileum were hyperemic. Microscopic examination of the jejunum and ileum revealed hyperemia and partial loss of the mucosal surface of the jejunal and ileal

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[3]Marmoset Science Diet. Riviana Foods, Hills Division, Institutional Products Department, Topeka, KA.
[4]Sustagen®. Mead Johnson Laboratories, Evansville, IN.
[5]Pepto-Bismol®. Norwich-Eaton Pharmeceutical, Norwich, NY.