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Salmonella enterica in Pinnipeds, Chile

To the Editor: Several wildlife-associated zoonotic agents have played a major role in the emergence of diseases in humans (1). However, diseases can also emerge in wildlife as a result of human activities, such as contamination of the marine environment and its fauna by the discharge of untreated human sewage. Salmonella enterica is among the agents identified as causing infection in various marine birds and mammals, including pinnipeds, from different geographic regions (2–4).

The objective of our study was to determine whether S. enterica infection occurs in pinnipeds from the Chilean coast. During August–December 2010, we obtained samples from 13 South American sea lions (Otaria flavescens) that the sanitary authority found malnourished and stranded at the northern Chilean beaches of Antofagasta (23°40’S, 70°24’W) and Los Vilos (31°54’S, 71°30’W) (Table). The pinnipeds showed no clinical signs or symptoms of disease; however, rectal swab samples were obtained during their stay for rehabilitation at the Buin Marino facilities (Santiago, Chile). After the animals recovered, they were released to their original habitat.

The swab samples were placed in Cary-Blair transport medium (COPAN, Murrieta, CA, USA) for shipment to the laboratory (Laboratory of Infectious Diseases, University of Chile, Santiago). To isolate bacteria, we placed the swab samples into 5 mL of buffered peptone water (Difco APT broth; Becton Dickinson, Franklin Lakes, NJ, USA), incubated them for 24 h at 42°C with agitation, and then aliquots of the suspension were transferred into the following media: modified semisolid Rappaport-Vassiliadis basal medium (Oxoid, São Paulo, Brazil) with novobiocin (20 μg/mL), selenite cystine broth base (Oxoid), and xylose lysine deoxycholate agar (Difco XLD; Becton Dickinson). After the aliquots were incubated at 37°C for 24–48 h, we identified suspected colonies by using biochemical tests and invA gene detection by PCR (5). Results showed that 2 of the 13 animals were infected with S. enterica strains, which were serotyped as S. enterica serotype Newport and S. enterica serotype Havana (Table), according to the Kauffmann-White scheme (6). Testing showed that the strains were susceptible to the following antimicrobial drugs: ampicillin, chloramphenicol, tetracycline, amoxicillin/clavulanic acid, trimethoprim/sulfamethoxazole, cefotaxime, nalidixic acid, nitrofurantoin, ciprofloxacin, ceftazidime, and cefoxitin (7).

Our results confirm S. enterica infection in pinnipeds from Chile and,
more broadly, the South American coast and contrast with previous unsuccessful attempts to detect Salmonella spp. in pinnipeds from Valdivia, 2,200 km to the south (8). This finding suggests geographic variability in the epidemiology of infection; however, this possibility must be confirmed in additional studies with more samples and additional regions.

S. enterica is an endemic bacterium in Chile that causes infection in humans and domestic animals. The Chilean sanitary authority includes S. enterica infection among the list of notifiable diseases, but surveillance is not conducted for S. enterica in wildlife. However, consideration should be given to changing this situation, given a report suggesting S. enterica as a priority for active surveillance (9). In addition, S. enterica serotypes Newport and Havana have been detected in Chile’s human population (10), strengthening the necessity for official support for initiatives addressing the need to elucidate the epidemiology of Salmonella in aquatic animals.

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