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Salmonellosis of Infants Presumably Originating from an Infected Turtle in Nagasaki, Japan

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The patient was a 6-year-old boy who began to experience vomiting and diarrhea on November 8, 2005. He consulted a hospital in Nagasaki City on November 10, and on the same day he was admitted under suspicion of acute gastroenteritis. On the day of the admission his laboratory data included a white blood cell count of 5,000/ μ l and C-reactive protein level of 2.24 mg/dl, which suggested low level inflammation. A biochemical examination, including serum electrolytes measurement, showed no abnormalities. The patient remained stable, but the high fever, vomiting and diarrhea continued. Suspected of bacterial enteric infection, he received oral administration of fosfomycin (FOM) and intravenous administration of flomoxef (FMOX). He responded well to this treatment, gradually recovered and was discharged on the 8th day after admission. As *Salmonella* serogroup O4 was isolated from the fecal specimens collected on the day of admission, he was diagnosed with salmonellosis.

H typing conducted in our laboratory identified the isolate as *S. Schleissheim*. Because the boy kept a turtle as a pet, we analyzed a swab sample of the turtle's body and a sample of the water remaining in the filter of the aquarium. Serogroups O4 and O8 *Salmonella* isolates were obtained from both specimens. The serogroup O4 was *S. Schleissheim* and the serogroup O8 was *S. Litchfield*. The *Xba*I-digested DNA samples of the three *S. Schleissheim* isolates showed the same pattern in pulsed-field gel electrophoresis (PFGE), indicating that the boy's salmonellosis was caused by *Salmonella* derived from the turtle (Fig. 1). The antibiotic-sensitivity pattern was identical for all the three isolates.

We were later informed that, on October 21, several weeks prior to the above event, his 9-year-old sister had experienced fever, diarrhea, vomiting and bloody stool, and had been effectively treated with oral administration of FOM; *Salmonella* spp. had been isolated from her. The turtle was *Trachemys scripta elegans*, which was bought at a street stall on October 9 at a festival in Nagasaki City. The retail route of the turtle was not clear.

Trachemys scripta elegans, whose original habitat is North

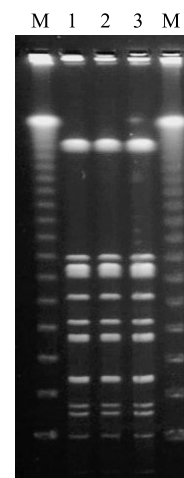


Fig. 1. Pulsed-field gel electrophoresis pattern of isolates. *Xba*I-digests of the chromosomal DNA of the isolates were run (6 V/cm; pulse time 2.2-54.2 s) on a 1% agarose gel for 19 h. Line 1, isolate from the 6-year-old boy; 2, swab sample of the turtle; 3, water remaining in the filter of the aquarium. M, lambda DNA ladder as a molecular weight marker.

and South America, is imported into Japan in quantities of several tens of thousands to a million per year, and now is the most common pet turtle in Japan. As salmonellosis tends to be severe in infants and elderly people, the Nagasaki City authority has issued a warning and produced a guide on the sanitary handling of pet turtles in families. In addition, the city authority now collects more information on the activities of pet shops and other animal handlers, and has intensified the surveillance and the control of these activities.

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