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Salmonella Serovar Montevideo Involved in a Food Poisoning Outbreak at a Club for Elderly Persons in April 2002 in Hyogo Prefecture

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In comparison with those caused by *Salmonella* serovar Enteritidis, food poisonings caused by *S.* serovar Montevideo have been rare in Japan (1). In April 2002, we experienced an outbreak of food poisoning in a club for elderly people on Awaji island in Hyogo Prefecture. Among 38 persons who ingested the suspected lunch prepared by a caterer, 23 persons of 59-79 years of age developed symptoms such as diarrhea

and fever. *S.* Montevideo strains were isolated from stool specimens of 12 severe symptomatic and four asymptomatic patients (strain Nos. 1-16). As references, we used three *S.* Montevideo strains isolated in unrelated cases, one isolated from a sporadic case of a resident in the same island in the same month (strain No. 17) and two from contaminated eggs in 1993 and 1994 (strain Nos. 18 and 19, respectively).

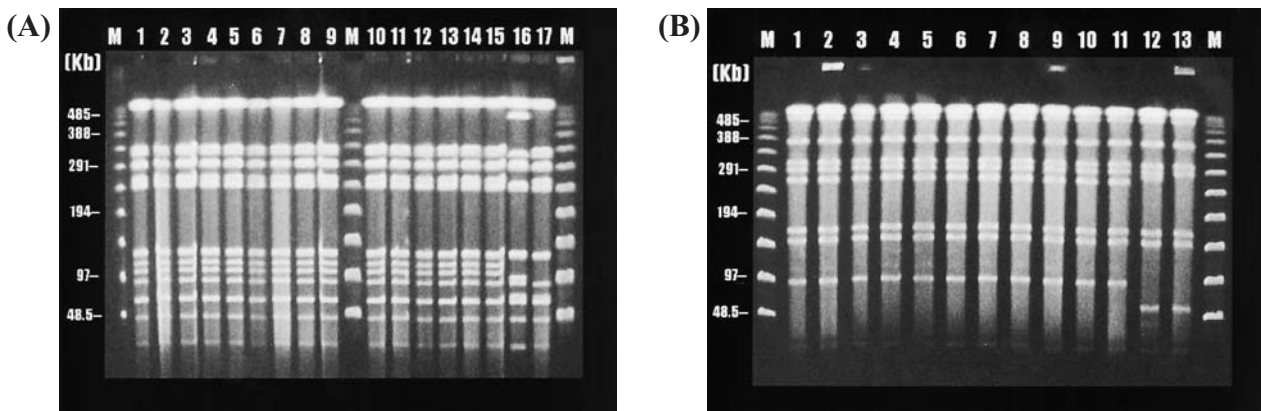


Fig. 1. PFGE patterns of *Xba*I- and *Bln*I-digests of chromosomal DNA of *Salmonella* Montevideo isolates. (A), *Xba*I-digests; and (B), *Bln*I-digests. Strains No. 1-16 are isolates from the outbreak in April 2002, No. 17 is an isolate from sporadic infection in April 2002, and Nos. 18 and 19 are isolates from eggs in 1993 and 1994.

(A) Lane 1: strain 1. Lane 2: strain 4. Lane 3: strain 5. Lane 4: strain 6. Lane 5: strain 7. Lane 6: strain 8. Lane 7: strain 9. Lane 8: strain 10. Lane 9: strain 11. Lane 10: strain 12. Lane 11: strain 13. Lane 12: strain 14. Lane 13: strain 15. Lane 14: strain 16. Lane 15: strain 17. Lane 16: strain 18. Lane 17: strain 19. M: λ ladder.

(B) Lane 1: strain 1. Lane 2: strain 5. Lane 3: strain 6. Lane 4: strain 7. Lane 5: strain 8. Lane 6: strain 12. Lane 7: strain 13. Lane 8: strain 14. Lane 9: strain 15. Lane 10: strain 16. Lane 11: strain 17. Lane 12: strain 18. Lane 13: strain 19. M: λ ladder.

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The 19 strains were tested for sensitivities to ampicillin, cefotaxime, kanamycin, gentamicin, streptomycin, tetracycline, trimethoprim, ciprofloxacin, fosfomycin, chloramphenicol, sulphamethoxazole-trimethoprim, and nalidixic acid by using antibiotic disks (Becton Dickinson Microbiology Systems, Cockeysville, Md., USA) (2). All were sensitive to the tested antibiotics. We examined the pulsed-field gel electrophoresis (PFGE) patterns of chromosomal DNAs digested with *Xba*I (Takara Shuzo Co., Ltd., Kyoto) (Fig. 1A) or *Bln*I (Takara Shuzo) (Fig. 1B), employing a Gene Path Typing System (Program No. 5; Bio-Rad Laboratories, Hercules, Calif., USA). All the isolates from the food poisoning were identical with one another and with one from a sporadic infection, but largely different from the egg isolates. The present food poisoning and the sporadic case were probably caused by the same strain.

The past two decades experienced an increasing incidence of various kinds of *Salmonella* (1), such as *S.* Oranienburg and *S.* Chester (3), *S.* Braenderup (4), *S.* Brandenburg and *S.* Corvallis (5), and the present *S.* Montevideo. The incidence rates of these infections will continue to increase due to reasons that include the increase in international travel and trade, and changes in the food production system and dietary habits (6).

REFERENCES

1. National Institute of Infectious Diseases and Infectious Diseases Control Division, Ministry of Health and Welfare (2000): Salmonellosis in Japan as of June 2000. *Infect. Agents Surveillance Rep.*, 21, 162'-163'.
2. Jorgensen, J. H., Turnidge, J. D. and Washington, J. A. (1999): Antibacterial susceptibility tests: dilution and disk diffusion methods. p. 1526-1543. *In* P. R. Murray, E. J. Baron, M. A. Tenover and R. H. Tenover (ed.), *Manual of Clinical Microbiology*. 7th ed. American Society for Microbiology, Washington D.C.
3. Tsuji, H. and Hamada, K. (1999): Outbreak of salmonellosis caused by ingestion of cuttlefish chips contaminated by both *Salmonella* Chester and *Salmonella* Oranienburg. *Jpn. J. Infect. Dis.*, 52, 138-139.
4. Hamada, K., Tsuji, H., Sego, E. and Maeda, S. (2000): PFGE analysis of *Salmonella* Braenderup isolates from two districts, September-November 1999 (Hyogo). *Infect. Agents Surveillance Rep.*, 21, 9-10 (in Japanese).
5. Hamada, K. and Tsuji, H. (2001): *Salmonella* Brandenburg and *S.* Corvallis involved in a food poisoning outbreak in a hospital in Hyogo Prefecture. *Jpn. J. Infect. Dis.*, 54, 195-196.
6. World Health Organization (1996): Emerging foodborne diseases. WHO Fact Sheet, No. 124.