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An Outbreak of *Campylobacter jejuni* subsp. *jejuni* Infection via Tap Water

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A total of 71 patients demonstrating abdominal pain, diarrhea, and fever were reported to Kooriyama City Health Center and Aizu Health Center in Fukushima Prefecture, Japan, in August 2006. All the patients had been drinking tap water supplied by a small village in the town of Inawashiro (Fig. 1), and there were no foods commonly eaten by the patients. The health center found that the tap water had not contained chlorine for about a week due to the failure of a chlorine injection system, and that the pace of incoming patients peaked during that time. It was suspected contaminated tap water was the source of this outbreak of food poisoning.

Thirteen stool specimens of patients, and samples of original untreated water from a spring, treated water at the filtration plant, and tap water in a patient's home were investigated by the Fukushima Institute of Public Health and at the Aizu Branch of the institute. *Campylobacter jejuni* strains were isolated from 11 stool specimens and from the original untreated water. Confirmation of the *C. jejuni* was done by biochemical analyses and multiplex PCR (Fig. 2). Serological tests indicated that all of the isolates belonged to the Z₆ serotype. Further, all isolates from the stool samples and from the water demonstrated the same pattern by *Sma*I-digested pulsed-field gel electrophoresis (Fig. 3). It was concluded that *C. jejuni* originally present in the water was the cause of

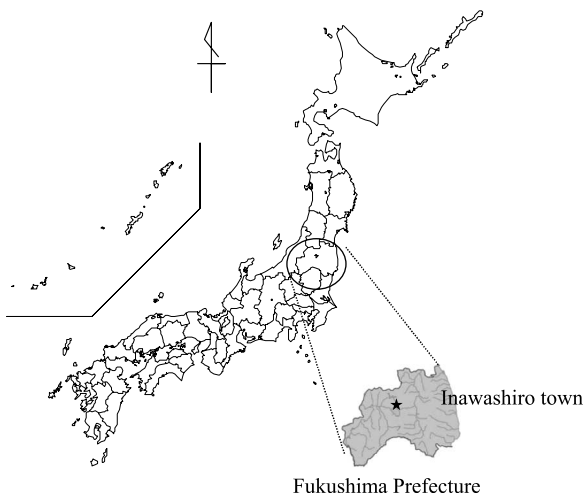


Fig. 1. Location of Inawashiro town.



Fig. 2. Detection of *C. jejuni* and *C. coli* by multiplex PCR. Lane 1, original untreated water; lanes 2-12, stool specimens from patients; lane 13, negative control; lane 14, *C. jejuni*; lane 15, *C. coli*; M, 100-bp DNA ladder.

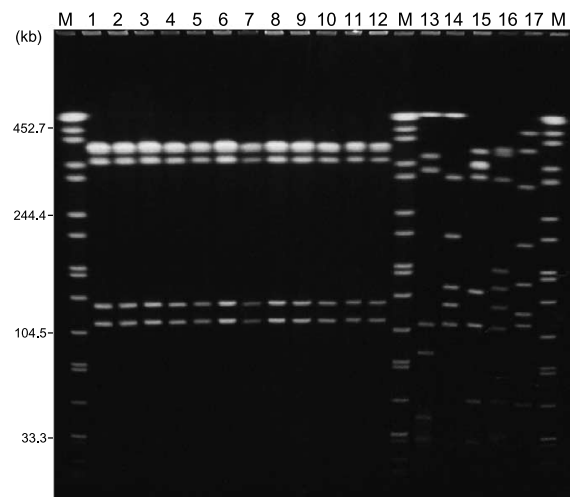


Fig. 3. Pulsed-field gel electrophoresis of *Sma*I digest of the chromosomal DNAs of *C. jejuni* isolates. Lane 1, original untreated water; lanes 2-12, stool specimens from patients; lanes 13-15, *C. jejuni* isolated in different cases; lanes 16-17, stool specimens from patients in different cases; M, molecular size marker (*Salmonella* Braenderup strain H9812, *Xba*I digest).

this water-borne outbreak.

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