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Outbreak of Enterohemorrhagic *Escherichia coli* O157 Attributed to a Grilled-Meat Restaurant

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On July 1st in 2005, a health center received a report from a clinic under its control, of isolation of enterohemorrhagic *Escherichia coli* O157 (VT1 and 2) from a patient with diarrhea and vomiting. Three days later, on July 4th, another health center received a report of isolation of *E. coli* O157 (VT1 and 2) from a patient with hemorrhagic diarrhea.

The two health centers in Saga Prefecture investigated the patients and their contacts for food consumptions, clinical symptoms and stool specimens. The families of both patients had meals in the same grilled-meat restaurant on the same day June 19th. On this day, 128 people used this restaurant. However, the symptomatic patients were limited to 4 members of the 2 families: 3 children under the age of 10, and a male in his 30s.

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Fourteen stool specimens from the 2 families, 7 stool specimens from the employees of the restaurant, 3 swab specimens of the restaurant and 2 specimens of the food raw materials were subjected to microbial investigation. *E. coli* O157 (VT1 and 2) was isolated from a total of 11 persons: 5 members from each of the families and 1 employee of the restaurant. Seven of them, a boy and 2 girls under the age of 10, a male of in his 20s, 2 females of their 30s and a female of her 60s, were asymptomatic. Bacteria were not isolated from swabs or food specimens.

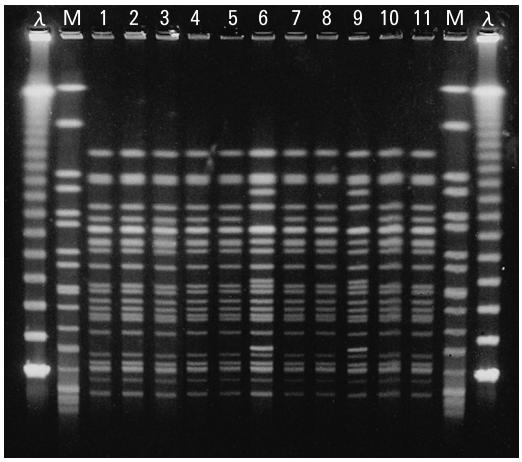

Fig. 1. PFGE patterns of isolates. λ, lambda ladder; M, *S.* braenderup H9812; lane 1, family A member #1 (the first patient); lane 2, family A member #2; lane 3, family A member #3; lane 4, family A member #4; lane 5, family A member #5; lane 6, family B member #1 (the first patient); lane 7, family B member #2; lane 8, family B member #3; lane 9, family B member #4; lane 10, family B member #5; lane 11, an employee of the restaurant.

The isolates were subjected to a pulsed-field gel electrophoresis (PFGE) analysis of the *Xba*I-digested chromosomal DNA. Nine isolates including one isolate from the employee, were identical in electrophoresis pattern (1). However, two other isolates from the same family (lanes 6 and 9, Fig. 1), though mutually identical, were different from the above isolates in four bands (Fig. 1).

The above epidemiological and PFGE data indicated that the outbreak was caused by a common (or two closely related) *E. coli* O157 strain(s) that contaminated the meal served by the restaurant. The source of contamination was either the food material or employee(s). As *E. coli* O157 was not isolated from the food materials, it could have been an employee, but there was no definitive proof. The restaurant received administrative sanction.

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