

Laboratory and Epidemiology Communications

Enterohemorrhagic *Escherichia coli* O157 Infection Presumably Caused by Contact with Infected Cows, Aomori Prefecture, Japan

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On July 3, 2007, a medical facility in Aomori Prefecture informed Mutsu Health Center of a case of enterohemorrhagic *Escherichia coli* O157 (EHEC O157) infection. The patient was a primary school child who had visited a stock farm on June 16 to “experience contact with animals” as a part of social studies field trip. From then until July 31, reports of EHEC O157 infection came to the health center one after another. All the patients were children who participated in the event held in this stock farm to “experience contact with animals” or their family members. Field trips were undertaken by primary schools A, B and C on June 16, July 6 and July

11, respectively. The stock farm was opened to the public on July 1. Fig. 1 summarizes the sequence of events, and Table 1 summarizes the patients’ symptoms.

Epidemiological studies suggested no other causes than contact with the cows at the stock farm. The pulsed-field gel electrophoresis patterns of the *Xba*I digests and *Bln*I digests of the chromosomal DNA of the isolates were almost indistinguishable for all isolates except isolate #15, which had one band missing in the *Xba*I digest and one band shifted downward in the *Bln*I digest, and isolate #6, which had an extra band in the *Bln*I digest (Fig. 2).

Table 1. Symptoms

Group	Patient no.	abdominal pain	diarrhea	hemorrhagic stools	vomiting	fever	hemolytic anemia	acute nephritis	hemorrhagic urinary syndrome	hospital admission
Cases related to the primary school A	1	○	○	○						○
	2 ¹⁾		○		○	○	○	○	○	○
	3 ²⁾									
Cases related to the event opened to the public	4	○	○	○		○	○	○	○	○
	5	○	○	○	○	○				○
	6 ³⁾	○	○							×
	7	○	○	○		○				○
	8	○	○	○		○	○	○	○	○
Cases related to the primary school B	9	○	○	○						○
	10	○	○	○						○
	11	○	○	○			○	○	○	○
	12 ⁴⁾	○		○	○	○				○
	13	○	○			○				×
Cases related to the primary school C	14	○		○						○
	15 ⁵⁾	○	○	○		○	○	○	○	○
	16 ⁶⁾	○	○	○						○
	Total	14	13	12	3	8	5	5	5	
Frequency of symptoms among the patients (%)		93	87	80	20	53	33	33	33	

¹⁾: patient #1’s brother (not participated in the event).

²⁾: patient #1’s father, asymptomatic carrier (not participated in the event).

³⁾: patient #4’s sister.

⁴⁾: patient #11’s sister (not participated in the event).

⁵⁾: patient #13’s brother (not participated in the event).

⁶⁾: patient #13’s father (not participated in the event).

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