Gastroenteritis Due to *Vibrio parahemolyticus* Hsin-Chu County

During July 7-9, 1985, an outbreak of gastroenteritis occurred among guests at a wedding banquet in Hu-Kao Village, Hsin-Chu County. The suspect meal was served on July 7 from noon to 2:00 pm. Approximately 300 people attended the banquet which was served in the host's home by a catering company. From

the guest list, we were able to identify and interview 181 banquet attendees and their family members who ate left-over food. A case of gastroenteritis was defined as anyone who attended the banquet or ate left-over food and developed an illness during July 7-10 with at least two of the following symptoms: diarrhea, abdominal pain, nausea, vomiting, fever, chills, bloody stools, or headache. Ninety-nine persons fit the case definition for an attack rate of 55 percent. Symptoms and signs included diarrhea (94%), abdominal cramps (88%), vomiting (30%), fever (28%), chills (27%), headache (13%), bloody stools (9%), and nausea (8%). Fifty-four percent of cases sought medical care; none required hospitalization. The median incubation period was 17 hours (range: 2-54), and the median duration of symptoms was 36 hours. Six of 17 (35%) persons who did not attend the banquet but ate left-over food became ill. There were no secondary cases. Of 20 food items served, 12 were statistically associated with illness (Table 2). Five of these food items contained seafood. Twelve of 13 rectal swabs from cases were positive for *Vibrio parahemolyticus*, serotype K8. Only two food items, pickled bamboo with pork and fried squid with celery, were available for culture; both were positive for *V. parahemolyticus* (serotyping was not performed). Although food handling practices were reviewed, we could not identify any specific process or technique that could account for the outbreak. Food was prepared the night before the banquet at the caterer's home, and transported to the banquet without refrigeration. Some of the food items were reheated before serving; others were served at room temperature.

Reported by the Hu-Kao Village Health Station; Hsin-Chu County Health Bureau; National Institute of Preventive Medicine, Food and Drug Bureau, Bureau of Disease Control, Department of Health, Executive Yuan.

Editorial note: *V. parahemolyticus* is a relatively common cause of gastroenteritis, and has been isolated from up to 20 percent of reported patients with diarrhea

Table 2. Food items associated with gastroenteritis at a wedding banquet, Hsin-Chu County, 1985

Food Item	p-value*	Food Item	p-value*
Cold Appetizers		**Hot Dishes**	
Bamboo	<0.001	Salted goose	<0.001
Chicken liver	<0.001	Fried chicken	NS
Squid	<0.025	Fried duck	NS
Goose feet	<0.025	Fried fish	<0.025
Pig tongue	NS	Pickled vegetable soup	NS
Pork leg in jelly	<0.001	Chicken soup	NS
		Fish soup	<0.001
Cold Dishes		Assorted soup	<0.001
Sashimi	NS	Pickled bamboo	
Cuttle fish	<0.005	with pork†	NS
		Fried squid with	
Hot Dessert		celery†	<0.001
Sticky sweet rice	<0.005	Shrimp	NS

*Chi-square test for significance. NS=not significant

†Culture-positive for *Vibrio parahemolyticus*

in Japan[1]. The organism is ubiquitous in coastal waters, and inadequately cooked seafood or food contaminated by saltwater has been associated with many foodborne outbreaks due to *V. parahemolyticus*. In this outbreak many food items, including several kinds of seafood, were signficantly associated with illness. Although the specific food preparation technique responsible for the outbreak was not identified, foods were probably cross-contaminated and the lack of refrigeration or inadequate reheating may have allowed organisms to proliferate to a concentration sufficient to produce disease.

In Taiwan, it is presently difficult to assess the relative importance of *Vibrio* species as a cause of foodborne illness since most city and county health bureaus only use peptone water to transport patient specimens to the laboratory. While the peptone water prepared by the National Institutes of Preventive Medicine (NIPM) is helpful in the rapid identification of cholera, it is not a good transport medium for non-vibrio enteric pathogens because it is highly alkaline.

To improve the microbiologic aspects of foodborne outbreak investigations, the Bureau of Disease Control and the NIPM have made the following revisions to the policy on transporting patient specimens to the laboratory effective September 1, 1985: all patient specimens from foodborne outbreaks should be transported on both peptone water and Cary-Blair media (two culture tubes per patient). Both media are available from the NIPM and should be routinely stocked by all city and county health bureaus.

References

1. Sakazaki R. Halophilic vibrio infections. In : Riemann H. ed. Food-Borne Infections and Intoxications. New York, Academic Press, 1969:115-29.
2. Carpenter CCJ. Other pathogenic vibrios In : Mandell GL, Douglas RG, Bennett JE, eds. Principles and Practices of Infectious Diseases. 2nd ed. New York, John Wiley & Sons, 1979:1219.

REPUBLIC OF CHINA
EXECUTIVE YUAN
DEPARTMENT OF HEALTH
BUREAU OF DISEASE CONTROL
P O BOX 81-95 TAIPEI, TAIWAN, R O C
TEL: (02) 7123761

R.O.C. EXECUTIVE YUAN/G I O PUBLICATION NO 4485
PRINTED BY FEAN YANG PRINTING ENTERPRISE CO , LTD
17, LANE 62, SIN SHAN S ROAD, SEC. 2, TAIPEI
中華郵政台北字第1566號執照登記為雜誌交寄