

Title

Salmonellosis outbreak in a restaurant associated with French toast sandwich — Chiayi County, Taiwan, 2018

Authors

1. Mr. Yu-neng Chueh
2. Dr. Chia-ping Su
3. Ms. Tsai-hsia Du
4. Ms. Chao-jung Lee
5. Ms. Ying-su Liao
6. Dr. Chien-shun Chiou
7. Ms. Jui-chen Chang
8. Ms. Chiao-wen Lin
9. Ms. Tsuey-fong Lee

Background

Salmonella is a common pathogen in foodborne outbreaks in Taiwan; however, the contamination routes remain largely unknown. On April 27, 2018, Taiwan CDC was notified of a salmonellosis outbreak related to a restaurant, with 13 patients laboratory-confirmed. We investigated the outbreak to identify infection source and recommend preventive measures.

Methods

We conducted a case-control study. We recruited and interviewed patients with gastroenteritis and patrons through reviewing medical records from an emergency department, foodborne illness complaints, restaurant orders, and referrals from patrons. We defined case-patients as patrons with diarrhea occurring within 72 hours after consuming the restaurant foods during April 16–27, 2018. We conducted bivariate analyses to identify foods associated with illness. Stools from patients and food handlers, foods and environmental samples were tested for enteric pathogens. *Salmonella* isolates were analyzed using pulse-field gel electrophoresis (PFGE) and whole genome sequencing (WGS). We inspected the restaurant and reviewed surveillance camera recordings to identify possible source of contamination during food preparation.

Results

We identified 47 cases; 14 were hospitalized and one died. Median incubation period was 10.5 hours (range: 0.5–52.5 hours). Main symptoms included diarrhea (n=47, 100%), fever (n=32, 68%) and abdominal pain (n=31, 66%). Compared with 44 controls, case-patients were more likely to have eaten French toast sandwich (OR: 102.4, 95% CI: 18.7–952.3). *Salmonella* Enteritidis were yielded from 16 case-patients, sharing indistinguishable PFGE and WGS results. Foods and food handler

samples tested negative. Environmental inspection did not find lapses in food safety practices. Surveillance camera recordings showed that handmade liquid eggs, one ingredient of French toast sandwich, was contaminated by egg shells, stored under room temperature and reused for days.

Conclusions

French toast sandwich containing handmade liquid eggs could be the infection source. Restaurants should use pasteurized liquid eggs and ensure safe processing and storage techniques.

Topic Areas

- Food and water borne infectious diseases
- Zoonotic infectious diseases

Abstract Study Type

Case Control

Abstract Research Type

Outbreak/Cluster Investigation

Abstract Key Words

salmonella infection, video recording, whole genome sequencing, pulsed-field gel electrophoresis, case-control study, foodborne disease

In what country is the program based?

Taiwan

In what year did the author enroll in a field epidemiology training program?

2017

Author Type

Trainee

Gender

Male

Name of Person Submitting Abstract

Wan-Chin Chen

Email of Person Submitting Abstract

wanchin@cdc.gov.tw

Role of Person Submitting Abstract

I am the Program Director

If "Other"

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Abstract Ranking

1

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REVIEWER COMMENTS:

1. A good abstract

2. Well written abstract.
Why was there not:
 1. Definition of controls?
 2. Multivariate analyses?