

The Queensland cholera incident of 1977.

1. The index case*

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The first known case of cholera to be contracted in Australia during the seventh pandemic occurred in Queensland in 1977. There was no record of recent travel abroad by the patient, or of her having been in contact with persons suffering from gastroenteritis. Vibrio cholerae, biotype eltor, serotype Inaba, phage-type 2, was the causative microorganism. This case is unique in that the microbiological diagnosis was based on the identification of an isolate from venous blood. This indicates that the patient was bacteraemic, an observation not previously reported. The incident shows the importance of routine screening of faecal specimens for V. cholerae, as well as other enteropathogens.

Although cases of cholera have been imported into Australia during the seventh pandemic, it is not considered as a cholera-receptive area since there were no secondary cases (1, 2). This report deals with the first microbiologically proven case of cholera contracted in Australia during the pandemic.

CASE HISTORY

A 56-year-old Caucasian female was admitted to hospital with severe gastroenteritis and in a state of collapse. Before admission, she had been treated by her medical practitioner for diarrhoea of three days' duration. She had a history of rheumatoid arthritis, pernicious anaemia, hypothyroidism, an unspecified mental disorder, ethanol abuse, and periodic bowel upsets. There was no record of recent travel abroad by the patient, or of her having been in contact with persons suffering from gastroenteritis. In the two-month period before the onset of her illness, she had lived at a caravan park in southeastern Queensland. A native of England, she had resided in Australia for 13 years. Prior to her arrival, she had travelled in the Mediterranean area, West Africa, and Indonesia.

CLINICAL AND BACTERIOLOGICAL FINDINGS

When admitted to hospital, the patient was acutely dehydrated, hypotensive, afebrile, but conscious.

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Within 24 hours of admission, she developed severe acidosis with acute pulmonary oedema, cardiac arrhythmia, and anuria, and required intensive therapy. Although the diarrhoea was profuse, at no time did she pass 'rice-water' stools.

Cultures of venous blood taken during the hypovolaemic shock phase of the illness yielded the initial isolate of *Vibrio cholerae*, biotype *eltor*, serotype *Inaba*, phage-type 2. This isolate was biotyped at the Australian Cholera Reference Laboratory, School of Public Health and Tropical Medicine, Sydney, and phage-typed at the WHO Cholera Research Centre, Calcutta, India. Its toxigenicity was determined by Dr R. Bradley Sack at Johns Hopkins University, Baltimore, MD, USA.

Further microbiological studies resulted in the isolation of *V. cholerae* of the same biotype, serotype, and phage-type from the patient's faeces. Clinical investigations also showed that the patient was achlorhydric. Although the patient responded to treatment and was discharged, she died nine months later from causes unrelated to the cholera episode.

DISCUSSION

This case was the first microbiologically proven clinical case of cholera to be contracted in Australia during the seventh pandemic. Furthermore, it could not be traced to a primary human source (3).

The initial microbiological diagnosis is unique in that it was based on the identification of an isolate recovered from venous blood. This would indicate that the patient was bacteraemic during the hypovolaemic-shock stage of the illness, an observation not

previously reported. It thus appears that bacteraemia may occur in severe cases of cholera, but further studies are required before any conclusions can be reached.

Because the patient was achlorhydric, she was probably unusually susceptible to small ingested doses of *V. cholerae* (4). As was subsequently shown (3), she served as a very sensitive detector of the presence of the cholera vibrio in a local surface-water system. Her already debilitated condition accounted for the

severity of the illness; however, she did not at any time pass characteristic 'rice-water' stools.

Finally, the incident showed the importance of screening faecal specimens for *V. cholerae*, as well as other enteropathogens, in non-endemic zones. The use of thiosulfate-citrate-bile salt-sucrose (TCBS) agar, as well as the alkaline-peptone water-enrichment technique (5), should be included in routine procedures for the examination of faeces in all cases of gastroenteritis.

RÉSUMÉ

L'INCIDENT DE CHOLÉRA DE 1977 AU QUEENSLAND

I. LE CAS INITIAL

Une femme blanche de 56 ans a été admise à l'hôpital avec une diarrhée sévère et dans un état de collapsus. Elle avait des antécédents de polyarthrite rhumatoïde, d'anémie pernicieuse, d'hypothyroïdisme, de troubles mentaux non spécifiés, d'éthylisme et de dérangements intestinaux périodiques. La malade n'avait pas voyagé récemment à l'étranger et n'avait pas été en contact avec des personnes souffrant de gastroentérite. Au cours de la période de deux mois qui a précédé le début de sa maladie, elle avait habité une caravane sur un terrain de camping dans le sud-est du Queensland. Elle était originaire d'Angleterre, mais vivait en Australie depuis 13 ans. Avant son arrivée dans ce dernier pays, elle avait voyagé dans la région méditerranéenne, en Afrique occidentale et en Indonésie. Bien que présentant une diarrhée profuse, elle n'a, à aucun moment, eu de selles contenant des grains riziformes. La malade a répondu favorablement au traitement et a été autorisée à quitter

l'hôpital. Elle mourut neuf mois plus tard de causes sans rapport avec l'épisode cholérique.

Les cultures de sang veineux prélevé pendant la phase de choc hypovolémique de la maladie ont donné une souche toxigène de *Vibrio cholerae*, biotype *eltor*, sérotype Inaba, lysotype 2.

Il s'agit là du premier cas connu de choléra contracté en Australie au cours de la septième pandémie. En outre, il a été impossible de remonter à une source primaire humaine. Ce diagnostic microbiologique initial fondé sur un isolement à partir de sang veineux est un fait unique; il suggère que la malade avait une bactériémie, ce qui n'avait jamais été rapporté auparavant. Parce que la malade présentait une achlorhydrie, elle constituait un indicateur très sensible de la présence du vibron cholérique dans un système d'eaux de surface local.

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