

Epidemiology Bulletin

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Case Report on A Botulism
Intoxication—Taipei City

Case Report on A Botulism Intoxication – Taipei City

At 4:30 pm, 19 September 1990, a suspected case of botulism intoxication was reported by a hospital in Taipei. Preliminary laboratory testing of the fecal specimen of the case by the National Institute of Preventive Medicine, the Department of Health, showed it to be positive for type A botulinal toxin. Members of FETP visited the hospital in the morning of 20 September to talk with ICU physicians and family members of the patient to obtain epidemiological data.

The investigation showed that the case was a 70-year old vegetarian woman and that she became ill in the afternoon of 4 September. She had lunch with around 200 people on 2 September at a nearby Buddhist temple on the occasion of a Buddhist ceremony. For the next three days she and her family members bought their vegetarian foods from a market. A onset of illness, she took some medicine and was later treated at a nearby clinic. She had a history of stomach ache and high blood cholesterol, and was diagnosed as having stomachache at the clinic. She was transferred to the hospital for treatment in the early morning of 5 September. Early symptoms included: vomiting, abdominal pain, blurred vision, and later, ptosis, dysphagia, numbness of limbs and dyspnea. Fecal and serum specimen, and left-overs from the lunch on 4 September were later collected and sent to the National Institute of Preventive Medicine for laboratory testings. The fecal specimen was positive for type A botulinal toxin, the serum specimen was negative, and no pathogenic bacteria were cultured from the left over food. On 19 September, family members of the patient received three bottles of anti-toxins (A + B + E) from the Bureau of Disease Control of the Department of Health. On 20 September, the patient was placed on a respirator and was under supportive treatment. She was also injected with the anti-toxins. Telephone calls were made on 24 September to emergency rooms, ICU's, and neurology departments of some 34 hospitals to see if there were any additional cases. The result was: no case of vomiting, blurred vision, dyspnea and ptosis due to food poisoning was identified in September. On 26 September, after additional anti-toxins, the patient became stable though was still placed in ICU under respirator and supportive treatment. Language difficulty still existed. No case was found among family members or the 200 some people who shared the lunch with her.

On 19 November, two months later, the investigators visited the hospital again. Although the patient was still under respirator and unable to speak normally, her galvanic skin and peripheroneural reactions had improved and eyelids could open slightly.

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Editorial Notes: Botulism intoxication often occurs either sporadically or in families. The disease caused by botulin toxins of seven types from A through G, with types A, B and E affecting humans more seriously.⁽¹⁾

Botulinus bacillus (*Clostridium botulinum*) is Gram-positive, anaerobic and exists in anaerobic and low acid conditions around a temperature of 30-37 ° C. It distributes relatively widely in soil and intestinal tracts of animals in the forms of nutrient or spore. Spores are strongly resistant to heat, chemicals and radiation and can only be inactivated by high temperatures. Both nutrient and toxin can be easily destroyed. Intoxication occurs often by ingestion of home-made canned vegetables inadequately processed during canning and contaminated by the spores of botulinus bacillus. Although the present Patient did not ingest any canned food, the food consumed was left at room temperature after cooking, and was later consumed without being heated again. Similar cases have been reported.⁽²⁾

Botulism intoxication is not due only to sausages and preserved meats. In 1985, a case of intoxication due to preserved peanuts was reported in Chang-hua County.⁽³⁾ Poisoning could also be due to home-canned vegetables and fruits. Canned foods contaminated by botulin toxin do not necessarily show signs of decay and are often consumed without suspicion.

Symptoms usually appear within 12 to 36 hours, sometimes 8 to 10 days after eating contaminated food, depending on the amount of food consumed and the health condition of the individual. According to Lamanna's estimate in 1959, one gram of pure botulin toxin is sufficient to kill 10 billion mice. The lethal dose for man is supposed to be 100 times higher than that for mice. This one gram of pure botulin toxin will cause deaths in a population of 100 million. Major early symptoms are abdominal pain, vomiting, nausea, followed by diplopia, dryness of mouth, dysphagia, thirst, and paralysis of peripheral nerves. About two-thirds of patients die within 3 to 7 days, usually from respiratory or cardiac failure. Electrophysiology shows a low level of galvanic skin reaction which then improves after rapidly repeated electric stimulus. Early administration of antitoxin while toxin is still in the blood circulation can neutralize the toxin. Clinical process will not be altered if antitoxin is administered after paralysis has developed. The clinical process can last as long as several weeks to several months.⁽⁴⁾

Specimens of suspected case of botulism intoxication should be collected immediately for laboratory examination. The fact that the fecal specimen of the present case was positive and the serum specimen negative perhaps was due to the methods of specimen collection. Specimens include food, serum, feces and the suspected food. 10cc of blood should be collected under sterilized condition before treatment. Blood should not be hemolyzed. Serum is separated after coagulation and forwarded immediately without additional treatment to the laboratory for testing for the existence of toxin. Fecal specimen and suspected food require more than 25 grams. 15 cc of discharges can also be collected through enema by distilled water. These specimens are placed in sterile, heard and shock-proof closed containers for transportation under freezing. They should be specifically labeled and numbered, and the laboratory technicians should be told that the specimens were collected from suspected botulism intoxication cases and that whether some medicines had been administered before the collection of specimens to alert the technicians to the possibility of interference. In Taiwan Area, human specimens can be forwarded to the Bacteriology division of the National Institute of Preventive Medicine for examination. The Division should be informed by telephone: (02) 7857556,

prior to the collection of any specimen from the suspected patient. the Division will advise the collector as to what care should be taken and what container is to be used. Food specimens can be examined by the National Laboratories of Foods and Drugs. Contact the 5th Division of the National Laboratories through telephone: (02)-78578122x511 for information prior to collection. Diagnosis of botulism intoxication is established by 1) the demonstration of specific toxin in the serum or feces, or of its presence in a suspected food item; 2) the isolation of the organism from the suspected food or feces; or 3) the epidemiological correlation between the onset of disease and the consumption of suspected foods.

Antitoxin is available from the Bureau of Disease Control, DOH, telephone: (02)-3210151x264.

References:

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