



Copies of any bulletin may be ordered by calling the Section of Epidemiology at (907) 269-8000  
or by writing to us at PO Box 240249, Anchorage, Alaska 99524-0249

*Bulletin No. 20*  
*October 15, 1982*

## **BOTULISM STRIKES AGAIN!**

Two Juneau residents were admitted to Bartlett Memorial Hospital on August 29, 1982 for treatment of nausea, vomiting, and neurologic impairment which followed the consumption of fermented salmon eggs. Three adults had eaten the eggs at a single meal on August 27 but only the two who had consumed the bulk of both eggs and liquid developed symptoms. The most severely affected patient, a 21-year-old woman, began to feel unwell thirteen hours after eating the salmon eggs. She was nauseated, uncoordinated, and could not focus her eyes. Later she developed double vision, stumbling, and disorientation. Finally, she was unable to "get enough air" and sought medical attention early in the morning of August 29. The physician who saw her recognized her symptoms as botulism, took samples of her blood, stool, and gastric contents and administered trivalent botulinum antitoxin, tap water enemas, and nasogastric suction. He telephoned the other two exposed individuals and persuaded them to come to the hospital. One, a 31-year-old male who developed symptoms eighteen hours after eating the salmon eggs, was weak and nauseated, could not focus his eyes, and had developed urinary retention. The other, a 45-year-old woman felt well. Both symptomatic patients were treated with trivalent botulinum antitoxin after appropriate testing for allergy to the horse serum from which antitoxin is made. The well patient was discharged after two days and kept under close observation for two weeks. Both symptomatic patients deteriorated; the woman soon needed endotracheal intubation and mechanical breathing. After stabilization, both patients were transferred to Anchorage where the more severely affected remained on a ventilator for three weeks. Recovery was eventually complete in both cases.

The physician involved promptly reported the outbreak to the Epidemiology Office. We assisted by advising on treatment, providing additional antitoxin, investigating the possible exposure of others to sources of botulinum toxin, handling clinical specimens and food samples, and transporting both patients to Anchorage.

Our investigation revealed that the physician had indeed contacted all exposed persons. All three individuals had eaten fermented salmon eggs before, although not within the past year. They noted nothing unusual about this batch, which was prepared approximately ten days prior to the meal. The eggs, rinsed with salt and tap water and wrapped in plastic, had been obtained from an uncle who had caught a silver salmon in the Juneau area that day. The eggs were re-washed with salt and tap water and placed in a plastic "Tang" container, the lid of which was closed "loosely". The container was placed behind the sink in an apartment where ambient temperature is estimated at 75°, and remained there until the August 27 meal.

*Clostridium botulinum*, the bacteria which produces botulinum toxin grows in conditions of low oxygen. Sealed plastic bags, closed jars, and covered containers, especially when kept in a warm environment allow *Clostridium* to produce toxin. The use of air-tight containers is a relatively recent innovation on traditional methods of preparing fermented salmon eggs. Traditionally eggs were fermented in porous sacks in cool conditions. Flattened or collapsed eggs were rejected. These older methods seemed wiser.

Botulism in Alaska has thus far been associated only with the consumption of Native foods. The disease which the toxin produces is characterized by symmetric paralysis, often with progressive respiratory weakness, normal temperature, postural hypotension, diplopia, eye muscle and other cranial nerve paralysis. There are several toxin

types; Types A,B, and E have all caused outbreaks in Alaska. Heating destroys the toxin while the incubation period is usually 12-48 hours, symptoms have appeared as early as six hours and as long as eighteen days after eating affected food. Botulism is not communicable person-to-person.

Botulism is a true public health emergency. Prompt reporting of all cases in whom the diagnosis is suspected is critical to initiate epidemiologic investigation. It is essential that those suspecting botulism observe the patient closely and be prepared to provide respiratory and circulatory support. Epidemiologic investigation spares no efforts to find contaminated food sources and to locate those who have eaten suspect foods. Antitoxin should be used only in consultation with the epidemiologists. Samples of blood, stool, and gastric contents should be taken before antitoxin is administered. Consultation is available 24 hours a day through the Epidemiology Office 272-7534, and the Centers for Disease Control, Alaska Activities, 271-4011. (See Communicable Disease Bulletin number 18 for our call schedule and phone numbers).

(Reported by Dennis Batey, M.D., PHS Juneau; Michael Westley, M.D., ANMC.)