



Bulletin No. 24

May 22, 1997

## Botulism Caused by Seal Oil - 1997

**Case 1:** On April 1, a 68-year-old woman from Tuntutuliak presented to the Yukon-Kuskokwim Delta Regional Hospital (YKDRH) with vomiting, dry mouth, dysphagia, and diplopia. She ate cooked whitefish soup and seal oil with chunks of fat during the previous week. The patient was given one vial of botulism antitoxin and, after an apneic episode, was transferred to the Alaska Native Medical Center (ANMC) for ventilatory support. She gradually improved and was discharged home. Type B botulism toxin was found in the patient's stool specimen, but no seal oil was available for testing. Two friends shared the seal oil, and one remained asymptomatic. The other was seen for dry mouth and constipation but was not felt to have botulism.

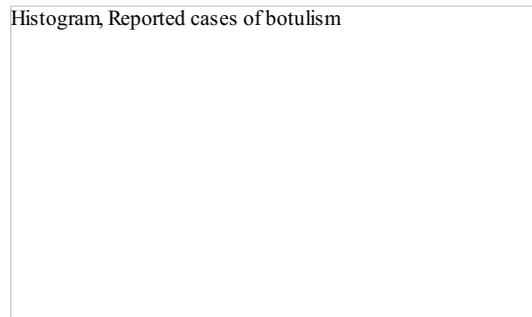
**Case 2:** On April 30, a 61-year-old woman from Togiak was seen at Kanakanak Hospital with complaints of abdominal upset, nausea, vomiting, dysphagia, dry mouth, weakness, diplopia, and trouble urinating. She, her husband, and her son ate fermented seal flipper and seal oil one week earlier; her husband and son were asymptomatic. She received one vial of botulism antitoxin and was transferred to ANMC but did not require ventilatory support. The patient gradually improved with supportive care. Type E botulism toxin was detected in the patient's stool and in a sample of seal oil.

**Case 3:** On May 2, a 33-year-old woman from Tuntutuliak was admitted to YKDRH because of respiratory impairment, trouble speaking, extreme weakness, urinary retention, and absent bowel sounds. She reported eating seal oil and fish soup during the previous week. One vial of botulism antitoxin was administered. She was intubated and transferred to ANMC. After 5 days she was extubated and showed gradual improvement. Serum results are pending, but both the patient's stool and a sample of seal oil were positive for type E botulism toxin. No one else ate any of the seal oil.

**Case 4:** On May 5, a 61-year-old woman from Manokotak was seen at Kanakanak Hospital with vomiting and lower extremity weakness. On May 6 she was transferred to ANMC where she was found to have dry mouth, diplopia, dysphagia, vomiting, and quiet bowel sounds. Although she had decreased respiratory capacity, she did not require intubation. The patient gave a history of eating dried pink salmon dipped in seal oil the day before onset of her illness. She was given one vial of botulism antitoxin. Although all patient specimens were negative for toxin, a sample of seal oil that only she had eaten was found to contain type E botulism toxin. A sample of dried fish was negative for botulism toxin.

### Discussion:

In Alaska, there have been 6 to 21 cases of foodborne botulism per year during 1991-1996 (Figure 1). The most common source of botulism is fermented traditional Alaska Native foods. Although seal oil has been reported to cause botulism, this is seen less frequently. In each of the four cases reported to date in 1997, seal oil was the likely cause. Because seal oil is used as a condiment, this potential source of botulism may be overlooked.



**Table 1. Signs and symptoms of botulism**

#### a. Gastrointestinal/Urinary

- nausea
- vomiting
- diarrhea
- abdominal pain
- intestinal ileus
- urinary retention

#### b. Neurologic

- dry mouth
- blurry vision
- diplopia
- dilated or unreactive pupils
- dysphagia
- decreased gag reflex

#### c. Muscular

- symmetrical skeletal muscle weakness
- respiratory muscle paralysis
- fatigue
- dyspnea

### Recommendations:

1. Whenever botulism is suspected (Table 1), immediately notify the Section of Epidemiology. Obtain a careful food history to try to identify the contaminated food. Many clinicians have found a "diagnostic pentad" (Table 2) useful for deciding if a patient might have botulism. Incubation periods of up to 10 days have been reported.

2. Other family members and friends who may have shared the suspected contaminated food must be located, evaluated, and followed for signs of botulism.

3. Obtain serum samples (2 - 5 red top tubes) before antitoxin is administered, gastric contents, and stool from the patient(s). Whenever possible, specimens (especially stool) should also be collected from others who ate the suspect food.

4. All suspect food should be saved for analysis. Place it in a location that will prevent additional consumption. The Section of Epidemiology facilitates the handling of all botulism specimens.

5. **Treatment of suspected botulism now requires only one vial of botulism antitoxin.** In August 1996, the U.S. Centers for Disease Control and Prevention (CDC) made this recommendation based on two studies demonstrating that one vial gave antitoxin levels 100-fold greater than needed to neutralize the largest amount of circulating toxin ever measured at CDC.

6. **Suspected botulism is a public health emergency. To report a possible case, call (907)269-8000 during business hours or (800)478-0084 after hours.**

**Table 2. Diagnostic pentad**

Botulism should be strongly suspected if a patient has a history of consuming traditional Alaska Native food, particularly fermented food, during the week before onset of symptoms and **three or more** of the following five signs or symptoms are present:

- nausea or vomiting
- dysphagia (trouble swallowing)
- diplopia (double vision)
- dilated or unreactive pupils
- dry throat or mouth

(Cases reported by Drs. Anna Jensen, Arnold Loera, Muna ar-Rushdi, and Mia Lee. Submitted by Beth Funk, MD, MPH, Section of Epidemiology.)