State of Alaska Epidemiology Bulletin

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Scombroid Fish Poisoning in an Anchorage Restaurant

On February 12, an Anchorage emergency room physician reported a probable foodborne outbreak; a 25-year-old male developed acute illness within 30 minutes of eating lunch at an Anchorage restaurant.

On February 12, two friends ate lunch at a popular Anchorage restaurant. The index patient ate a luncheon special, grilled fresh tuna served with a mushroom and onion sauce and lettuce and avocado. His friend, who did not become ill, ate reindeer sausage and bread. The pair ordered several meals to take back to their office co-workers. After eating lunch, they split up. Within 30 minutes of eating, the 25-year-old index patient began to develop symptoms of illness characterized by dizziness, severe flushing, malaise, fatigue, and a rushing sensation. The flushing extended across the face and over the trunk. There was no shortness of breath, respiratory symptoms, diarrhea, nausea, or vomiting.

In the meantime, the patient's friend returned to his office with the takeout food. Three individuals in the office then ate these meals. A 31-year-old woman ate her lunch of grilled fish with mushrooms and onions, lettuce and avocados at approximately 1:00 p.m. Within 15 minutes her nose began itching severely. She then developed a severe headache. Her co-workers remarked that her nose and face became red and blotchy. Symptoms progressed to malaise, dizziness, blurred vision, a floating sensation, a flushed and hot feeling in her face, and a bad taste. She developed abdominal cramps but had no nausea, vomiting, or diarrhea.

A second co-worker, a 28-year-old woman, also ate a similar meal at approximately 1:00 p.m. Within 30 minutes she developed a headache, abdominal cramps, gas, and nausea. Her face and scalp were severely flushed, and itched severely.

A third co-worker, 37-years of age, ate a fish sandwich at 1:00 p.m. Within 15-20 minutes he also noted dizziness, flushing, and developed mild diarrhea. His meal consisted of grilled fish in a bun with some teriyaki sauce, lettuce and tomato. Symptoms of all four patients resolved in 4-6 hours.

At approximately 2:00 p.m., an ARCO physician's assistant called to report illness in a 40-year-old woman who ate lunch at the same restaurant and presented within 30 minutes of eating fish. She complained of severe flushing in her face and trunk, nausea, and dizziness. She had no vomiting or diarrhea and denied itching.

Investigation of the restaurant established that the fish served at the noon meal was yellow-tailed tuna obtained through a local seafood outlet. Further investigation established that the yellow-tailed tuna was caught off the coast of southern California. A commercial fish store in Anchorage purchased 75-100 lbs. of fresh yellow-tailed tuna on February 4. The implicated restaurant received 22 pounds on February 6. The fish served February 12 was the last remaining tuna. Samples of the tuna were sent to Hawaii for histamine assays. Samples from the implicated batch of tuna showed histamine hydrochloride levels of 14.4 mg/100 g; control specimens had level of 5.3 mg/100 g.

This outbreak represented a typical outbreak of Scombroid fish poisoning syndrome. Scombroid fish poisoning results from consumption of improperly handled tuna and other dark meat fish species. When fish are improperly refrigerated, marine bacteria that are part of the normal surface microflora multiply and produce scombrotoxin. Scombrotoxin is thermostable and is not destroyed in regular procedures used in canning or cooking fish.

The symptoms experienced by the affected individuals were typical of the histamine-like reaction caused by Scombroid fish poisoning. Scombroid fish poisoning can be completely prevented with proper handling and refrigeration. Clinical illness is generally mild. Chemical analyses have documented that the histamine is very unevenly distributed in the flesh of spoiling tuna. Fish causing illness may have no offensive odors or tastes associated with spoilage.

(Reported by Frank Hollingshead, M.D., Humana Hospital; William Tanner, P.A., ARCO; Glen Y. Kobayashi, Acting Chief, Laboratories Branch, Department of Health, State of Hawaii; Rose Tanaka, Chief, Southcentral Laboratory, State of Alaska.)