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# Communications

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## Bluefish: A Newly Discovered Cause of Scombroid Poisoning

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Scombroid poisoning, a histamine-like reaction, can follow the ingestion of improperly handled tuna, skipjack, bonito, saury, mackerel, seerfish, and butterfly kingfish, all members of the suborder Scombroidea. Recently, dolphinfish and mahimahi, not belonging to the suborder Scombroidea, have been reported to cause scombroid poisoning.<sup>1</sup> Six separate instances of scombroid poisoning following the ingestion of bluefish (*Pomatomus saltatrix*) were reported to the Connecticut Department of Health during the months of August, September, and October 1982.<sup>2</sup> Five instances resulted from fish consumed in a restaurant, and a sixth involved home-prepared bluefish. The following is a brief case report of this sixth Connecticut incident of bluefish-associated scombroid poisoning.

### Case Report

A 34-year-old man presented to the emergency room with chest tightness, palpitations, headache, and erythema of his face and upper body. There was no shortness of breath or paresthesias. The symptoms began 20 minutes after eating a bluefish steak. He had caught the fish off the coast of Connecticut five days previously and had kept the fish unfrozen in a refrigerator. Physical examination revealed normal vital signs with the exception of a pulse rate of 140 beats/min. A confluent erythema was present over his face and upper torso. The lungs were clear without wheezes and neurologic examination yielded normal results.

Scombroid poisoning was suspected, and he was treated with intramuscular diphenhydramine (50 mg) and methylprednisolone (40 mg). He received ipecac syrup to evacuate residual fish and vomited 10 minutes later. Within 30 minutes, the chest tightness, tachycardia, and erythema resolved. A residual headache persisted for two hours. Following this, the patient experienced no further symptoms and no further therapy was required.

On analysis performed by the Connecticut State Laboratory, a 100-g uneaten portion of the same

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fish was found to contain 124 mg of histamine. Histamine levels greater than 100 mg/100 g of fish are associated with scombroid poisoning.

## Discussion

Scombroid poisoning can occur following the ingestion of decomposed fish containing high levels of histamine. Fish from the suborder Scombroidea contain high amounts of histidine in their muscle, as do the dolphinfish and mahi-mahi. Bacterial contamination, most frequently *Proteus* organisms, clostridia, *Escherichia coli*, salmonellae, shigellae, and *Enterobacter* organisms, cause decarboxylation of the histidine into histamine.<sup>1</sup> Temperatures between 37° C and 43° C favor rapid bacteria growth.<sup>3</sup> After fish are caught, they should be frozen to avoid bacteria contamination and growth. Most outbreaks of scombroid poisoning have been traced to improper freezing or refrigeration of fish.<sup>4</sup> In the case presented, prolonged refrigeration instead of freezing probably permitted bacteria proliferation. Unfortunately, cooking does not destroy the substance or substances responsible for scombroid poisoning.<sup>3</sup>

Decomposed fish frequently taste sharp or peppery. Signs and symptoms of scombroid poisoning usually occur within one hour of ingestion and can include nausea, vomiting, headache, palpitations, swelling of the lips, flushing of the face, an erythematous rash, burning of the throat, and difficulty swallowing.<sup>1</sup> These symptoms can be followed by diarrhea and abdominal cramps. Rarely, respiratory distress and shock occur. The signs and symptoms of scombroid poisoning usually resolve spontaneously in a few hours, and antihistamines appear to shorten the course of the illness.<sup>3</sup>

Scombroid poisoning should not be confused with true fish poisoning, or ichthyosarcotoxism.<sup>5,6</sup> True fish poisoning results from ingesting such fish as moray eel, barracuda, and puffer, which contain preformed toxins. In true fish poisoning the toxins are present in the live fish, whereas scombroid poisoning, on the other hand, is the result of toxins being produced during decomposition.

Scombroid poisoning is confirmed by the demonstration of high histamine levels (greater than

100 mg/100 g of tissue) in the fish associated with poisoning. Levels of histamine greater than 20 mg/100 g of fish are suggestive of decomposition resulting in the decarboxylation of histidine into histamine-like compounds. Levels of histamine greater than 50 mg/100 g of fish are considered a danger to health and potentially toxic. Bacterial contamination is difficult to quantify and is not an accurate marker of scombroid poisoning.<sup>1</sup>

The terminology of scombroid poisoning suggests that some characteristic of the suborder Scombroidea is etiologic. The association of scombroid poisoning with dolphinfish and mahi-mahi make that unlikely. Bluefish is also not a member of the suborder Scombroidea, and the association of characteristic poisoning with it leads to an inference that some other mechanism is involved.

Histamine alone probably is not the causative agent of scombroid poisoning. High doses of oral histamine can be administered to volunteer subjects with no apparent effect because oral histamine is converted in the bowel to inactive N-acetyl histamine. Unidentified toxins or potentiators of histamine absorption must therefore be present, which could include scombrotoxin, saurine, endotoxins, the production of other amines in decomposed fish, or alterations in the conversion of histamine to inactive N-acetyl histamine.<sup>1</sup> Recent reports that demonstrate the therapeutic superiority of cimetidine over antihistamine support this opinion.<sup>7</sup>

Not all individuals eating the same contaminated fish develop scombroid poisoning, explainable by the uneven distribution of decay (and histamine) within the fish flesh.<sup>4</sup> Therefore, when checking a fish sample for histamine, it is prudent to sample multiple areas.

The diagnosis of scombroid poisoning is based on characteristic clinical features and the finding of high histamine levels in the ingested fish. Most outbreaks have involved improperly stored fish from private catches; however, commercially canned fish can also cause scombroid poisoning.<sup>3</sup> Bluefish is a popular sport fish caught during the summer and fall in the coastal waters of New England. The six Connecticut reports of histamine-like reactions following the ingestion of bluefish containing large amounts of histamine document bluefish as a new culprit in scombroid poisoning.

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The authors expect that with careful documentation and reporting, more species of fish will be found to cause scombroid poisoning.

**References**

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# Physicians' Impressions of Old Medical Records

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Old medical records are considered essential to high-quality medical care.<sup>1,2</sup> It has been assumed that the essential data of a patient's previous medical care could be found in records obtained from prior physicians. Are old medical records, when obtained from previous health care providers, useful, and if so, which portions are most useful to the requesting physician?

To answer these questions, the Research Committee of the Florida Academy of Family Physicians conducted a study of the perceptions and preferences of its members in obtaining old medical records.

**Methods**

A questionnaire was designed asking the members of the Florida academy to indicate the usefulness of each of several designated types of old medical records obtained from previous health care providers. Specifically physicians were asked to rate on a scale of one to seven (one being most useful and seven being least useful) each type of old medical record available, including progress notes and chart notes, previous laboratory tests such as complete blood count, chemistry survey, etc, electrocardiograms (ECGs), chest or other x-ray reports, hospital discharge summaries, dictated summaries of medical history, and other special tests such as cardiac catheterizations, stress tests, mammograms, pulmonary studies, and others. The questionnaire, along with a self-addressed, but unstamped, return envelope, was mailed in the spring of 1982 to approximately 1,100 members of the Florida Academy of Family Physicians.

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