



Introduction

Ciguatera fish poisoning, which occurs after consumption of tropical and subtropical reef fishes contaminated with Ciguatoxin, is the most commonly reported marine disease in the world[1]. However, it remains under-diagnosed and under-reported in South East Asian countries such as Malaysia, which, ironically, has vast coral reefs of where these organisms thrive. Patients affected with ciguatera fish poisoning will develop a constellation of clinical findings, involving the gastrointestinal, neurological and cardiovascular systems.[2] On rare occasions, ciguatera poisoning can be fatal. [3]

Here, we are reporting 3 of such cases, namely a lady who presented with diarrhea, bradycardia and heart block, a gentleman with bradycardia and hypotension, and lastly with perioral paraesthesia and dizziness. All three consumed the same fish (barracuda) at the same time.

Case report

Case 1: A 23 years old lady with no known medical illness presented with 6 episodes of loose stools, 6 episodes of vomiting and facial flushing. At presentation, BP was 90/40, HR 40-50bpm, while ECG showed sinus arrhythmia. She consumed a barracuda fish with its internal organs approximately 3-4 hours prior to the development of symptoms. Patient responded to adequate fluid resuscitation and was subsequently discharged well 2 hours later from the emergency department.

Case 2: A 35 years old gentleman with no known comorbidity, complained of sudden onset of profuse sweating and dizziness around 6-8 hours after eating the same fish including the internal organs and roe. Patient was conscious, but hypotensive with BP of 64/31 mmHg and bradycardic (HR 40-50 bpm). ECG showed sinus bradycardia. IV Adrenaline was started after fluid bolus of 30cc/kg due to persistent hypotension. Patient was subsequently admitted. In ward, inotropes were able to be weaned down. Symptoms improved with supportive therapy and patient was subsequently discharged the next day.

Case 3: A 43 years old gentleman with no comorbidity presented with neurological symptoms of dizziness, perioral numbness, and generalized limb weaknesses. He was also found to have consumed the same fish at the same time. He was bradycardic; HR 50-60 but showed no GIT symptoms and was normotensive. Patient responded well with IV fluid and was subsequently discharged well after 1 day of observation in ward.

Discussion/ Conclusion

Ciguatera fish poisoning occurred with consumption of fish contaminated with Ciguatoxins which was found in high levels in Dinogellate *Gambierdiscus Toxicus*, a marine organism that typically inhabits low lying tropical shore areas and coral reefs [Figure 2]. Among the commonest type of fish that is contaminated with the toxin is barracuda which was consumed by all the three individuals as per the case stated [Figure 1].



Figure 1: Barracuda frequently ingested Ciguatoxin contaminated algae.



Figure 2: dinoflagellate gambierdiscus toxicus

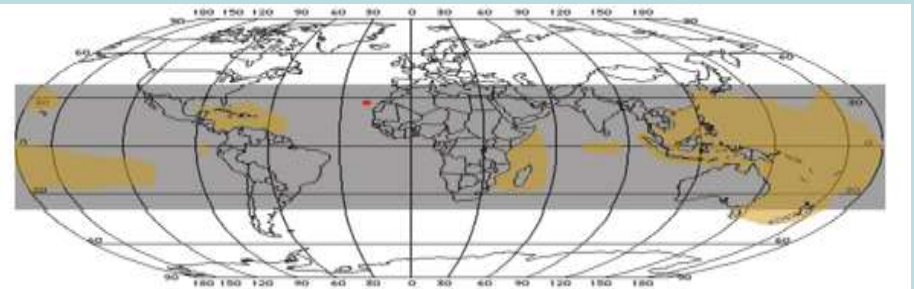


Figure 3: Ciguatoxin endemic regions

Diagnosis of ciguatera fish poisoning can be established with the aid of cytotoxic essays or liquid chromatography-mass spectrophotometry. The fish can also be sent for testing using a mouse bioassay and an IgG immunoassay [4]

These tests, however, are costly, time consuming, and not widely or rapidly available. Moreover, there are no clinical tests available for the diagnosis of ciguatera fish poisoning. In addition to that, fish containing ciguatoxin cannot be recognized by odor, appearance, or taste. Therefore, the following criteria can help in establishing the diagnosis of ciguatera fish poisoning:

- A history of large reef fish ingestion, particularly large reef fish such as barracuda, grouper or red snapper.
- Neurological or gastrointestinal symptoms and signs that correlate with ciguatera fish poisoning, particularly temperature related dysesthesia.
- Ciguatera food poisoning in multiple individuals who consumed the same fish, or, if possible, test confirming the presence of ciguatoxin in the fish consumed.
- Exclusion of other diagnosis. [5]

Ciguatera poisoning, particularly its severe form, represents an important public health issue for endemic regions, especially coastal countries like Malaysia. It is often under diagnosed or misdiagnosed and under reported. It may present with a myriad of multisystemic manifestation. Fatality rate of ciguatera poisoning as been reported to be 0.1 percent overall[3]. Hence, awareness, as well as a high clinical suspicion is needed when attending to a patient with fish related poisoning

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Declaration of conflict for all authors

Informed consent was obtained from all patients to be included in this case report. All authors have no conflict of interest.

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