Keriorrhoea After Consumption of Blue Marlin
Guedes Laura Vilar*, Rebouças Daniel Santos and Guedes Jorge Carvalho

1Universidade Federal da Bahia, UFBA, Clerkship student at Centro de Informações Antiveneno do Estado da Bahia, CIAVE, Brazil
2Director of Centro de Informações Antiveneno do Estado da Bahia, CIAVE, Brazil
3Department of Gastroenterology, Universidade Federal da Bahia, UFBA, Brazil

Abstract

Introduction: Keriorrhoea is a benign, self-limited symptom caused by indigestible wax esters contained within some fish, often escolar (Lepidocybium flavobrunneum) or rudderfish (Centrolophus niger).

Case report: A 53-years-old male patient presented, two hours after consumption of Blue Marlin (Makaira nigricans), oily orange discharge from the rectum, a condition known as keriorrhoea or gempylotoxism.

Discussion: The Blue Marlin does not contain indigestible lipids and it was not described as capable of inducing keriorrhoea in published articles. However, its diet sporadically includes some species of fish of the family Gempylidae, which was probably the source for intoxication.

Keywords: Fishes; Poisonous; Diarrhea; Toxicology; Fish oils

Introduction

Keriorrhoea (in Greek: “flow of wax”) is a gastrointestinal condition described as oily orange rectal discharge that occurs after consumption of fish with high content of non-saponifiable lipids (wax esters), which are non digestible by humans [1-5]. The condition has been classically associated with the consumption of escolar (Lepidocybium flavobrunneum) or rudderfish (Centrolophus niger) [2,3,5,6]. Eventually, the poisoning is called “gempylotoxism” in reference to the family Gempylidae also able to trigger the symptom [7].

Case report

In January 2010, an Antivenom Information Centre noted a case of a male 53-years-old patient, presenting oily substance discharge from rectum, which started two hours after consumption of Blue Marlin fish (Makaira nigricans) and achieved complete regression after 12 hours of onset. He did not present other symptoms as abdominal pain, malaise, nausea, vomiting or fever and rectal discharge was continuous and not noticeable, in small quantity. The patient did not seek medical attention during the presentation of symptoms, but sought the Antivenom Information Centre subsequently to clarify the nature of the condition. He reported previous ingestion of Blue marlin, but never presented similar symptoms. Four other people (one male and three female) ingested smaller quantities of the same fish, and remained asymptomatic. The fish had been purchased in the market, properly identified by label, and was prepared in the patient’s own residence in adequate hygienic conditions.

Discussion

The symptoms resulting from ingestion of fish with high content of wax esters was widely described in a retrospective cohort study in Australia [5] after a conference of the Public Health Unit of that country. At the time of the conference, several participants had health problems after eating rudderfish at lunch. The results showed that 46% of respondents who ate the fish had gastrointestinal symptoms (no significant difference between sexes) and the symptoms appear on average 2.5 hours after ingestion lasting on average 22 hours. Diarrhoea was the most frequent symptom, and 38% had defined as “oily diarrhea”. In this study, other symptoms included nausea, malaise, vomiting and headache. Although the patients have been away from their activities, none of the affected sought medical assistance.

The poisoning presented in this case seems to be the condition described as keriorrhoea especially because of the description of symptoms, but also fits in the history of fish consumption, evolving with sudden onset of symptoms but not immediate, lasting about 24 hours. Keriorreia been reported in other studies, which pointed out several species of fish capable of inducing the symptom, like Lepidocybium flavobrunneum, Ruvettus pretiosus, Centrolophus spp., Tubia spp., Scatophagus spp. [1-3,6-9]. However, there are no reports in the literature of keriorreia secondary to the consumption of Blue Marlin.

One study pointed the misclassification of fishes as one of the obstacles for the proper market and consumption control of species that trigger keriorreia, especially the confounding between escolar (Lepidocybium flavobrunneum) and rudderfish (Centrolophus niger). According to the article, the real rudderfish does not contain the nondigestible wax esters that induce oily diarrhea [6]. The Hong Kong Centre for Food Safety published on its homepage a warning to the citizens about the consumption of escolar fish being sold as cod. In the same document, the institution explains that the dispensation of rudderfish without proper identification is prohibited in Hong Kong and warns consumers about the possibility of appearance of oily diarrhea [10].

The Blue Marlin (Makaira nigricans) differs greatly in appearance of the fishes which cause keriorreia. It has rapid growth, reaching 11.3 feet in length and 396 pounds, and has elongated structure in the form of needle. The species have commercial importance and is known to have high fat content, although there are no reports contain unsaponifiable lipids.
lipids [11]. The Blue Marlin belongs to the family Istiophoridae, that inhabit tropical and temperate waters and makes great migrations [12]. Its habitat shift behaviours allow a diet composed by variety of species, from animals that inhabit the surface to depth [11,13]. It was demonstrated that its diet may include fish of the family Gempylidae, capable of causing keriorreia, although these are not the basis of their usual diet [11,13].

The symptoms identified in this case is a condition already described in medical literature, with legal implications in the marketing of certain fish in some countries, although it is poorly known. Due to the characteristics of being a potentially embarrassing symptom and also self-limited, only a few affected by this poisoning seek medical care, dificulting the production of knowledge. We didn’t find in the literature another case of keriorreia occurred in Brazil, although this certainly was not the first one.

The original source of wax esters in this case description remains unknown. Misidentification of the fish, witch could be actually a escolar or rudderfish is one possibility, although the Blue Marlin has physical peculiarities that make it difficult to confound. The hypothesis of contamination of food through the Blue Marlin’s diet is plausible, although it has sporadic feature. Thus, it should not be considered a fish capable of inducing poisoning. It is worth noting that the ingestion of non-saponifiable lipids causes keriorrhoea only in susceptible individuals, and the nature of the predisposition remains unclear.

References


