

Is Eating Fish Related-Psychiatric Disorders? A Case Report of Female Child with Schizophrenia Related Fish Ingestion

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Abstract

Many studies worldwide reported about patients developed gastrointestinal symptoms generally within three to six hours of eating the fish. Neurologic symptoms, including circumoral paresthesias and weakness in the lower extremities, can occur later; occasionally a reversal of hot-cold taste sensation is reported. Neurologic symptoms often persist for several weeks, but in some cases can last for years. We have reported a case study of female child presenting with A Schizophrenia like attack just after fish ingestion, following the patients up for 30 months, the disease symptoms disappeared when patient was adherent to medications, relapsed when eating fish in a surprising character. In such an interesting case report, we shed light on the food born neurologic and psychiatric illness produced by eating fish.

Index terms— knowledge, risk factors, vaccination, je, rupandehi.

1 Introduction

Food is a frequent source of food-borne illness. Such illness can arise from consumption of fish, especially shellfish, contaminated by viruses such as Norwalk or Hepatitis A; ingestion of a toxin such as scombroid, found in certain finfish; or poisoning from fish or shellfish contaminated with toxins from algae and other marine life forms, such as dinoflagellates that produce toxins causing ciguatera fish poisoning and paralytic shellfish poisoning, or *Gymnodinium breve*, which causes serious disorders such as what is known as red tide [1,2].

One of the famous reported fish poisoning outbreaks; Ciguatera poisoning which is the most common form of seafood poisoning and occurs after ingestion of certain species of local reef fish, which vary from location to location. Between 1998 and 2002, 84 outbreaks resulting in 315 cases were reported to the CDC; several outbreaks have been described in Australia. The fish appear and taste normal; cooking does not destroy the toxin and thus, avoidance of these fish is the only means of prevention, most resort areas in the Caribbean area [3,4]. Many questions have arisen Author ? : Department of Hepato-Gastroenterology, Al Azhar Faculty of Medicine, Al Azhar Asuit University Hospital (WHO Psychiatry Training Course-Ain Shams University-Cairo-Egypt). Author ? : Leibniz-Institute of Freshwater Ecology and Inland Fisheries, Müggelseedamm 301, 12587 Berlin, Germany. Author ? : National Institute Oceanography and Fisheries (NIOF), Red Sea Hurghada-Red Sea-Egypt. e-mail: ahmadrazek@gmail.com related -Scombroid fish. Scombroid Fish poisoning occurs after the ingestion of finfish, notably tuna, mahimahi, and bluefish. One of the largest reported outbreaks of scombroid fish poisoning in the United States was associated with neurological disorders, till now the mechanism of Poisoning-related neurological /Psychiatric disorders is not fully understood [5].

2 II.

Case Report 2 years ago, female child 10 years old, presented with increased activity beyond her developmental age, together with visual hallucinations in the form of demons and angels, she also showed lack of need of sleep even if she tired. There was no family history of any psychiatric diseases.

Parents claimed the condition presentation and progression just after eating fish, which did not concerned as important history by pediatrician, psychologist or psychiatrist.

The child's chronological age, intellectual capabilities, and environmental factors were evaluated into account for assessing the level of functional impairment or improvement in early and follow up course.

24 months following cognitive behavior therapy, psychotherapy and pharmacotherapy, patient improved with complete disappearance of schizophrenic symptoms and signs, patient showed significant progressive improvement in her intellectual activities together with social abilities.

Gradual pharmacotherapy withdrawal was done by expert pediatric psychiatrist with intimate follow up, surprisingly just the patient has eaten fish with her family, she showed aggressive relapsing of hallucination both audible and visual with significant hyperactivity syndrome, for the second time her parents claimed the condition for the child related-eating fish, they mentioned no similar condition for them or siblings when eating fish also. Accordingly we minded the condition seriously, following the patient up for another 6 months, patient showed some social and psychiatric improvement, when we asked parents allowing the child to eat fish (any kind) she showed the same previous relapsing attack, which cannot be explained.

3 III.

4 Discussion

Paralytic shellfish poisoning (PSP) is the food borne illness associated with the consumption of seafood products contaminated with the neurotoxins known collectively as saxitoxins (STXs). This family of neurotoxins binds to voltage-gated sodium channels, thereby attenuating action potentials by preventing the passage of sodium ions across the membrane. Symptoms include tingling, numbness, headaches, weakness and difficulty breathing [6,7].

Schizophrenia is one of the top ten illnesses contributing to the global burden of disease ranked by the World Health Organization, whatever the disease is much serious in childhood, affecting the Psycho-motor System. Antipsychotic medications were prescribed to the patient as first-line treatment for schizophrenia. Medications were very effective in reducing symptoms and behaviors associated with the disorder. The concept that certain food ingestion may lead to diseases or interaction diseases related disorders have been reported in many studies which could estimate the usefulness versus the harmless of certain food. Other American-marine studies reported that fish eating may lead to certain neurologic manifestations which may take several weeks to years. One of the largest reported outbreaks of scombroid fish poisoning in the United States was associated with neurological disorders, till now the mechanism of Poisoning-related neurological /Psychiatric disorders is not fully understood [9][10].

One of our Explanation regarding Psychiatric/ Neurological disorders-related Fish ingestion, the idea that Histidine; presenting with high concentration in certain sea food breaking down or converting to Histamine, in a cumulative matter with pre-coding gene stimulator like effect, when eating fish containing high amount of Histidine, it may lead to neurological and Psychiatric diseases.

In organic disorder it will be much Histamine related allergies; in a case antihistaminic drugs could be helpful. Whatever eating fish may help sleeping and sometimes relaxation in many institutions. Accordingly we have no idea regarding the mechanism of action. There were 118 outbreaks of scombroid from 1998 to 2002, resulting in 163 cases; One Pennsylvania outbreak was associated with consumption of a tuna and spinach salad in a restaurant. Flushing, nausea, sweating, diarrhea, and headache occurred from five minutes to two hours after ingestion and resolved within hours. Histamine levels were found to be elevated in the fish, which had been caught in the Gulf of Mexico by a long-line method that kept the fish suspended for 12 to 24 hours on the line in the relatively warm water prior to harvesting.

The illness is caused by histamine and other products from bacteria that propagate on the fish in warm water or when they are inadequately refrigerated.

Prompt harvesting and refrigeration until the fish is cooked are the best means of preventing this poisoning [11][12] [13]. In our current case study we have no scientific explanation on the moment; ultimately we have to research and understand more about these neuropsychiatric disorders related eating fish.

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- [American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders ()] , *American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders* 2013. American Psychiatric Association. (Washington)
- [Alaska Epidemiology Bulletin. Paralytic Shellfish Poisoning in Juneau ()] , <http://www.epi.alaska.gov/bulletins/docs/b2010> *Alaska Epidemiology Bulletin. Paralytic Shellfish Poisoning in Juneau* June2010. 2011. 22. (Accessed on December)
- [Nordentoft and Thomsen (2013)] ‘Association between Attention-Deficit Hyperactivity Disorder in childhood and Schizophrenia later in adulthood’. M Nordentoft , P H Thomsen . S0924-9338(13)00078- 3. doi: 0.1016/j.eurpsy.2013.06.004. *Eur Psychiatry* 2013 Sep 6. (Epub ahead of print)
- [Wood et al. ()] ‘Family relational factors in pediatric depression and asthma: pathways of effect’. B L Wood , B D Miller , J Lim . *J Am Acad Child Adolesc Psychiatry* 2006. 45 p. 1494.
- [Sobel and Painter ()] ‘Illnesses caused by marine toxins’. J Sobel , J Painter . *Clin Infect Dis* 2005. 41 p. 1290.
- [Deeds et al. ()] ‘Nontraditional vectors for paralytic shellfish poisoning’. J R Deeds , J H Landsberg , S M Etheridge . *Mar Drugs* 2008. 6 p. 308.
- [Etheridge ()] ‘Paralytic shellfish poisoning: seafood safety and human health perspectives’. S M Etheridge . *Toxicon* 2010. 56 p. 108.
- [Mines et al. ()] ‘Poisonings: food, fish, shellfish’. D Mines , S Stahmer , S M Shepherd . *Emerg Med Clin North Am* 1997. 15 p. 157.
- [Hartigan-Go and Bateman ()] ‘Redtide in the Philippines’. K Hartigan-Go , D N Bateman . *Hum Exp Toxicol* 1994. 13 p. 824.
- [Fleming and Stinn ()] ‘Shellfish poisonings. Shoreland’s’. L Fleming , J Stinn . *Travel Medicine Monthly* 1999. 3 p. 1.
- [James et al. ()] ‘Shellfish toxicity: human health implications of marine algal toxins’. K J James , B Carey , J O’halloran . *Epidemiol Infect* 2010. 138 p. 927.
- [Morris and Pfisteria ()] ‘the cell from hell,” and other toxic algal nightmares’. J G MorrisJr , Pfisteria . *Clin Infect Dis* 1999. 28 p. 1191.
- [Murray and Lopez ()] *The Global Burden of Disease*, Cjl Murray , A D Lopez . 1996. Cambridge, MA: Harvard University Press. p. 21.