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Guam Seaweed Poisoning: Presentation of Patients at the Emergency Room

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Abstract—Four patients with histories of eating seaweed were seen at a hospital emergency room over a 6 hour period. They complained of difficulty breathing (3 patients), numbness, particularly of the lips and extremities (3), sweating (3), abdominal pain (3), diarrhea (3), vomiting (2), blurred vision (1), and twitching of facial muscles (1). Two patients described their paresthesias as a sensation that raindrops were falling on their skin. Laboratory tests were unremarkable except that one patient had a slight increase in WBC's and one patient with breathing difficulty had an elevated blood CO_2. The clinician treating these patients felt that the symptoms were consistent with a diagnosis of ciguatera poisoning.

On April 27, 1991, when I came to work in the Guam Memorial Hospital Emergency Room (ER) at 11:00 p.m. the duty physician had a patient to endorse to me. A 33 year-old Chamorro (native Guamanian) female (R.M.) had come to the ER complaining of numbness, particularly of the fingers and mouth. She had been having similar problems since 2:30 p.m. but had earlier refused to be taken to the hospital. At that time I was the only physician on the 11 p.m. to 7 a.m. shift and the emergency room was full. I proceeded to examine her thoroughly, finding nothing unusual other than a complaint of paresthesias. She appeared to me to be a typical case of fish poisoning similar to what I have seen since I started practicing on Guam in 1968. I asked if she had eaten fish recently but her response was negative. The only unusual thing in her history was that she had eaten seaweed. Her boyfriend (A.U.) had been seen earlier in the ER and he had also eaten the same seaweed.

At about 2:35 a.m. a 33 year-old Filipina (C.S.) came to the ER. She was hyperventilating, perspiring and complaining of numbness of her body, extremities and mouth. She had initially been seen in the ER the previous afternoon and was the first patient to be seen with this syndrome. The physician on duty at that time examined her and found nothing unusual other than that she just didn't feel well so she was referred to her regular clinic for a complete medical evaluation. When I examined her she was hyperventilating and appeared very nervous so I tried to get her to relax. She had carpal pedal spasm but we see that all the time with hyperventilation. I decided to take some blood tests; CBC

(complete blood count), of course, is always done when you don't know what else to do. The CBC results were unremarkable except for a slight increase in the number of white blood cells.

At about 4:25 a.m. my first patient's boyfriend (A.U.) decided he was going to re-register because he was now having abdominal pain in addition to the numbness of lips and extremities that he had experienced earlier (he had earlier asked to see a physician but changed his mind). I examined him and requested a CBC and a urine test because of the abdominal pain. There were some red blood cells in the urine so I thought maybe he had a kidney stone and I scheduled him for an X-ray.

I now had three patients with similar histories and symptoms and I was beginning to more strongly suspect ciguatera poisoning. I took time to check an emergency medicine textbook (Schwartz et al. 1978) and handbook (Dreisbach 1974) but could not find any reference to seaweed. We also have emergency medicine computer software (Micromedex, Inc. 1992) so we did a search for "seaweed," again with negative results. Apparently seaweed is not supposed to be poisonous, at least according to the information we had access to in the ER.

I continued to treat all my other emergency cases when about 5:00 a.m. the duty nurse announced, "We have another seaweed case." This patient was a 48 year-old Filipino male (S.T.) with a history of both vomiting and diarrhea who had also eaten seaweed. He was complaining of feeling weak rather than of having parasthesias or numbness and anybody who has had diarrhea and vomiting may feel weak.

I did not see this patient right away because when I was told there was another seaweed-associated case, my first reaction was that we needed help. From questioning the patients we knew that the seaweed had been purchased at a local flea market. Since the flea market would be opening soon I was afraid we would be faced with a major epidemic if additional people purchased the seaweed and ate it. I called the Territorial Epidemiologist at home and explained that somebody at the flea market was selling seaweed that was making people sick and suggested that he prevent any additional sales.

I did not get to see the last patient until about an hour after he registered. When I examined him I found nothing unusual except that he was weak but able to move his extremities. I endorsed him to the physician that was coming on duty since by that time it was 7:00 a.m. Before I left, I also endorsed the girl that was perspiring (C.S.) because she said she couldn't breathe well and when I checked her arterial blood gases I found her blood carbon dioxide was elevated. I called up the private physician that had seen her earlier and told him that although she did not really look too bad, she was hyperventilating, perspiring and complaining of paresthesias. As far as I was concerned, clinically, it looked like ciguatera but I couldn't find anything to substantiate that what she had eaten could be a source of ciguatera toxin.

We also endorsed the other patients to their regular physicians. Usually with a diagnosis of ciguatera poisoning I would have sent these patients home and asked them to see their regular doctors the next day. But for some reason I just

didn't feel comfortable following this procedure, probably because their symptoms had not begun to resolve as is usually the case with our fish poisoning cases. I had tried the so-called mannitol treatment (Palafox et al. 1988) on these patients, except for a possibly pregnant patient who could not tell us the date of her last period (until we had the results of a pregnancy test we did not want to give her anything that might harm a pregnancy). We went ahead and gave all the others mannitol, some of them calcium, and this seemed to help a little but it just never resolved the symptoms. So I went home to try to get some rest and all these patients were admitted to the hospital.

References

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