

## LETTER TO THE EDITOR

### PROBABLE RECOGNITION OF HUMAN ANISAKIASIS IN BRAZIL

São Paulo, July 2, 2007

Dear Sir:

Human anisakiasis is a parasitosis caused by the accidental ingestion of the infecting larvae of nematodes of the Anisakidae family, mainly *Anisakis simplex* and *Pseudoterranova decipiens*. Infection is acquired from the consumption of fish, such as, salmon, codfish, herring, silver hake, flounder and squid<sup>1</sup>. When the fish is improperly cooked, frozen or irradiated, infection is possible.

In Japan, anisakiasis is frequent, due to the consumption of sushis and sashimis. It is also common in Holland, Scandinavia and along the Pacific coast of Latin America. In Brazil, there are no reports of this human infection, although studies have shown the existence of some contaminated fish. Dorado, anchovies, red porgy and swordfish have been cited, especially from the northeast region. Moreover, it is known that *Anisakis physeteris* and *Pseudoterranova* sp. have been found in the stomachs of *Kogia breviceps* whales, in Brazil, off the coast of Fernando de Noronha, indicating a new geographic distribution of this parasite<sup>4</sup>. There are no reports of the existence of nematodes of the Anasakidae family in codfish gutted, dried and salted for commerce in the fishing industry of São Paulo State<sup>2,3</sup>.

The disease has two distinguishing characteristics: 1) the local effect of the parasite on the digestive tract and 2) allergy, due to immediate hypersensitivity from the immunoglobulin E. The former generally occurs from a single larva in the digestive tract, which provokes local irritation with symptoms, such as nausea, vomiting, and epigastric pain. There are occasional reports of disturbances such as appendicitis, peritonitis and even Crohn's disease. In cases of severe pain, surgery to remove the nematode is required. The latter characteristic, allergy, is caused by the parasites' antigens, occasionally resulting in clinical pictures that can vary from simple urticaria to angioedema, including anaphylactic shock<sup>5,6</sup>.

We attended three patients that were probably infected with anisakiasis. Diagnosis was based on clinical aspects, laboratorial alterations and epidemiological circumstances that can be important in the acquisition of the helminthiasis. Relevant clinical data are as follows: VMA, 43 years old, pain in several parts of the body, for the last seven days at the time of reporting; eosinophilia (32% - 664/mm<sup>3</sup> and soon after 38% - 5,940/mm<sup>3</sup>); CAIS, 38 years old, abdominal pain for two days; macular rash in the body trunk; eosinophilia (25% - 3475/mm<sup>3</sup> and soon after 38% - 4,902); ACA, 28 years old, epigastric pain for ten days; macular rash in the abdomen; eosinophilia (20% - 2,200/mm<sup>3</sup>).

One of the patients was treated with albendazol, based on the elevated eosinophilia. Adequate treatment is not known for human anisakiasis, and benefits from the aforementioned anti-helminthic medicine are unknown.

Clinical evidence of the three patients and the hematological alterations suggest a diagnosis of anisakiasis.

Nine persons from São Paulo City, (São Paulo State, Brazil), traveled to Ilha do Bananal, Tocantins State, Brazil, to fish. Five of these persons that ate raw fish of the genus Cichlydae became sick and three were attended at a medical service. They did not receive an adequate in-depth clinico-laboratorial examination, therefore we could only provide the basic data obtained at our doctor's office.

The anglers placed the live fish that they caught in a recipient with river water; and then within four hours, the fish was disemboweled and put in the refrigerator. Since they ate raw fish that they had stored for more than one occasion, we do not know for certain the intervals of incubation. When eating the fish, they always added soy sauce and wasabi (horse radish) that are traditional condiments used by Japanese people and their descendants.

They did not report acute symptoms, and their complaints began around fifteen to twenty days, after they left the island and returned to São Paulo. These time intervals are in accordance with those known for people infected and for possible allergic manifestations.

It is understood that such reports are not deemed important enough to warrant formal register. Many such occurrences are not considered worthy of publication, and as such, delay acquisition of up-to-date information. The manifestations of human anisakiasis are usually as follows:

1) gastrointestinal (pain in the epigastric region; abdominal pain); 2) allergy (macular rash in the trunk and intense eosinophilia). Pain in several parts of the body, may be interpreted as meaning a systemic involvement. These clinico-laboratorial manifestations, constitute part of anisakiasis, frequently along with more numerous and intense non-specific disturbances. Complete etiological proof would depend on the finding of the larvae in the digestive tract, and this information was not available with these cases. It is important to point out that the four members of the group who did not eat the raw fish remained free of the disease.

We would like to, at least, advise that human anisakiasis may be found in Brazil and stimulate interest on this issue.

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#### **REFERENCES**

1. OKUMURA, M.P.M.; ALEXANDRINO DE PÉREZ, A.C. & ESPÍNDOLA FILHO, A. - Principais zoonoses parasitárias transmitidas por pescado - revisão. *Rev. Educ. cont. CRMV-SP*, **2**: 66-80, 1999.
2. PEREIRA, A.D.; ATUI, M.B.; TORRES, D.M.A.G.V.; MANGINI, A.C. & ZAMBONI, C.Q. - Incidência de parasitos da família Anisakidae em bacalhau (*Gadus morhua*) comercializado no Estado de São Paulo. *Rev. Inst. A. Lutz ( S. Paulo)*, **59**: 45-49, 2000.
3. PRADO, S.P.T. & CAPUANO, D.M. - Relato de nematóide da família Anisakidae em bacalhau comercializado em Ribeirão Preto, SP. *Rev. Soc. bras. Med. trop.*, **39**: 580-581, 2006.
4. SANTOS, C.P. & LODI, L. - Occurrence of *Anisakis physteteris* Baylis, 1923 and *Pseudoterranova* sp. (Nematoda) in pygmy sperm whale *Kogia breviceps* (De Blainville, 1838) (Physeteridae) in Northeastern Coast of Brazil. *Mem. Inst. Oswaldo Cruz*, **93**: 187-188, 1998.
5. VAN THIEL, P.H.; KUIPERS, F.C. & ROSKAM, R.T.H. - A nematode parasitic to herring, causing acute abdominal syndromes in man. *Trop. geogr. Med.*, **12**: 97-113, 1960.
6. ZULOAGA, J.; ARIAS, J. & BALIBREA, J.L. - Anisakiasis digestiva. Aspectos de interés para el cirujano. *Cirug. esp.*, **75**: 9-13, 2004.