Endoscopic imaging of the first clinical case of anisakidosis in Brazil

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Abstract. Anisakidosis (known as anisakiasis in the past) is an uncommon helminthic human infestation caused by dietary intake of uncooked raw fish. The distribution of fish and other marine animals infected by Anisakis spp is common in Taiwan, Brazil, Japan, Korea, Western Europe, India, and other countries. We report endoscopic findings of the first possible patient with Anisakis-like infection in Brazil.

Keywords: Anisakis spp.; Anisakidosis; Brazil; First case; Seafood.

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Introduction

Human anisakidosis (previously know as anisakiasis) is a fish-borne zoonotic disease caused by larval parasitic nematodes of the genus Anisakis (Santana and Cives, 2009). Infection occurs after the accidental ingestion of raw, undercooked or improperly processed fish and/or squid parasitized by these larval stages. Several types of human anisakidosis have been identified, based on the location of lesions, i.e. either gastric, intestinal, extra-gastrointestinal, oro-pharyngeal or transient luminal (Takei and Powell, 2007). Acute or chronic infections are also described in gastric and intestinal lesions (Takei and Powell, 2007). Anisakids are important human pathogens because their paratenic hosts are often fishes used for human consumption and there has been an increase in the consumption of raw fish which in turn can increase the infection rates (Petithory, 2007). Many cases have been reported in Japan, Korea, Netherlands, and in the Western Europe, regions where raw fish are massively consumed (IDSC, 2004; Kim et al., 2006). Just et al. (2008) reported a case of anisakidosis in a patient that had eaten in a “sushi” bar. Fish infected by Anisakis spp. have also been found in Taiwan, Brazil, Croatia, Poland, Portuguese Madeira Island, Italian Sardinia Island, Spain, Indian Ocean, Eastern Mediterranean, Indonesia, and Bali Island (Grabda, 1983; Chao, 1985; Mattiucci et al., 2002; Fei et al., 2004; Sù and Fei, 2004;
Kozačinski et al., 2006; Iglesias et al., 2008; Palm et al., 2008). In this sense, Žilić and Mladineo (2006) detected 21.78% of blue fin tuna fish infected by *Anisakis simplex* in the Croatian Adriatic marine farms. In Brazil, despite the presence of pygmy sperm whale (Santos and Lodi, 1998) and other cetaceans (Mattiucci et al., 2002; Motta et al., 2008) but also several fish like the cusk Eel (*Genypterus brasiliensis*) (Knoff et al., 2007), and several other freshwater (Tavares et al., 2007) and marine fish (de Barros and Cavalcanti, 1998; Mattiucci et al., 2002; Bicudo et al., 2005) infected by anisakids in many different Brazilian territories (Brazilian Atlantic Coast, Ceará, Fernando de Noronha Island and Rio de Janeiro), and despite the evidence of an increased of consumption of raw fish, there is no literature description of a Brazilian clinical case of human anisakidosis. Literature data shows that *Anisakis*-infected fish have been commercializes in Brazilian fish markets and supermarkets (de Barros and Cavalcanti, 1998; Knoff et al., 2007). The absence of a report of human anisakidosis in Brazil can be due to difficulty of disease diagnosis since it should only be confirmed if the presence of anisakid larvae is confirmed (Kim et al., 2006).

The present work describes for the first time in Brazil a suspected case of acute anisakidosis causing sub-mucosal lesions in the stomach, and the observation of the larval nematode in the small intestinal region by endoscopic examination.

**Case report**

A 73-year-old man visited the endoscopic service in “Barra do Garças” city – Mato Grosso State (Brazil). The patient had possibly eaten raw seafood 3 weeks before when he traveled to Bahia State (Brazilian sea cost). He developed epigastric pain, gastric fullness, and precocious satisfaction without bloody or mucous diarrhoea, fever, or myalgia. His medical history showed no evidence of any specific disease. Physical examination showed stable vital signs. Endoscopic examination (figure 1A) showed a plain lesion with hyperaemic surface at the proximal part of the body and into the antrum of the stomach (figure 1B). Some lesions showed erosions and hard surface consistency (figure 1C).

![Figure 1. Endoscopic imaging of Anisakidosis in human stomach and intestine: A – general view from duodenum; B – hyperaemic surface of the stomach; C – erosive lesions of stomach; D/E – presence of *Anisakis*-like larvae in an inflammatory area of duodenum; F – retrieved larvae](image-url)
Duodenum endoscopic examination revealed inflammatory mucosal area and the presence of a 1.5 cm of size and circular thread-like appearance larva (figures 1D, 1E). After the larva was removed by endoscopy (figure 1F) the patient left the medical center but unfortunately he had died after 20 days due to unknown reasons.

**Discussions**

Since *Anisakis* spp. induce intestinal obstruction and possible allergic reactions that can be life threatening (Chinda et al., 2004; Audicana and Kennedy, 2008) these are candidate hypotheses for patient death in this report.

This is the first evidence of *Anisakis*-like larvae causing gastrointestinal lesions reported in Brazil despite the great seacoast and uncooked fish are commonly consumed in the form of sushi and sashimi. It is presumed that the infection was acquired by eating raw marine fish, although neither the mode of infection nor the identification of the worm has been determined with certainty. With this regard, even Italian and Japanese patients have been diagnosed based on clinical symptoms as well as endoscopic gastrointestinal imaging (Hsu et al., 1986; Sakai et al., 1992; Pampiglione et al., 2002). Similarly as reported by Sakai et al. (1992) in this clinical case the larva was accidentally detected during endoscopic examination. Furthermore, the absence of reported cases of anisakidosis in Brazil makes very difficult the adequate diagnosis by untrained physicians. Additionally, the patient’s death made impossible any complementary investigations after the suspecting human anisakidosis was confirmed by other medical investigators.

**References**


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