

# Anisakiosis and its Role in Acute Abdomen

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## Abstract

The expansion of the consumption of raw or undercooked seafood has driven the increase in gastrointestinal anisakiosis in humans. Approximately 20,000 cases of this disease are detected annually worldwide. Of all patients with anisakiosis, 7% undergo surgical treatment for acute abdomen. Unfortunately, this is the case after surgical examination for diagnostic purposes, given the limited information provided by imaging tests and the difficulties in interpreting serological tests due to cross-reactions with other helminths. Therefore, the objective of this article is to highlight the role of *Anisakis* spp. in the genesis of acute abdomen, as well as the importance of dietary history and epidemiological behavior as necessary elements to guide the diagnosis.

**Keywords:** anisakiosis; acute abdomen; *anisakis* spp; differential diagnosis; fish consumption

## Introduction

The second intermediate hosts of *Anisakis* spp. are fish or squid, as they contain third-stage (L3) larvae. This can cause accidental infection in humans when ingested in a poorly processed, undercooked, or raw state. The types of symptoms and their onset depend on the segment of the gastrointestinal tract to which the L3 larvae attach. This highlights the important role currently attributed to *Anisakis* spp. in the development of acute abdomen, not only in medical but also surgical cases [1-3]. Consequently, anisakiosis should be included in the differential diagnosis of pathologies capable of triggering acute abdomen, particularly because these frequently go unnoticed in diagnostic imaging studies, such as tomography, ultrasound and X-ray (widely used for the investigation of acute abdomen), due to the increasing global expansion of the consumption of raw seafood or fish, and because the prevalence of anisakiosis has quadrupled in the last decade, in this sense, the history of consumption of fish or seafood should be considered as a key element for the orientation of the diagnosis [4-6]. Of the gastrointestinal infections caused by *Anisakis* spp. reported in the international literature, pathologies included in the international classification of diseases as acute abdomen are described. Among them, the following stand out due to their higher frequency: intestinal intussusception, with laboratory tests indicating increased acute phase reactants, as well as dilated intestinal loops and free fluid compatible with occlusion by a band or internal hernia, but not as a consequence of L3 larvae of *Anisakis* spp., which

generally end as granulomas or abscesses when surrounded by a predominantly eosinophilic inflammatory infiltrate (García-Redondo 2024) [7]. In the last four decades, few cases of intestinal intussusception due to anisakiosis have been reported, and only 23 of those found have resulted in intestinal obstruction. Therefore, it can be considered extremely rare, but this should not exclude it from the differential diagnosis of acute abdomen, because intestinal anisakiosis is difficult to distinguish from strangulated intestinal obstruction. Likewise, as a cause of acute abdomen, cases of severe intestinal ischemia due to live *Anisakis* spp. larvae have been reported, even with perforation of the mesentery, because the intestinal wall is thin, and in some cases accompanied by bloody ascites [3, 8]. Pathological changes in the intestine may include intestinal necrosis requiring appropriate surgical resection, as the segment of intestine affected by the L3 larva of *Anisakis* spp. can become highly ischemic due to the inflammatory process resulting from intestinal wall perforation, mesenteric blood vessel collapse, vasoconstriction, and granuloma formation. Finally, it is important to note that the differential diagnosis is broad and varied and includes acute appendicitis, diverticulitis, ileitis, peptic ulcers, inflammatory bowel disease, cholecystitis, intussusception, and intestinal obstruction [9, 10]. From the above, it follows that intestinal anisakiosis is a cause of severe acute abdomen that requires suspicion to avoid catastrophic consequences for those affected, based on observation of the diet consumed, the

epidemiological behavior of the pathology in each region of the world, knowledge of the diagnostic tools, and the recommended treatment in each case (Bastidas 2019, Hirosawa 2020) [11, 12].

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