

# Reply to Dr. Antonella

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*Dear Editor:*

I read with interest the report by Antonella et al.<sup>1</sup> This report described a case of the acute scrotum caused by *Anisakis*. As the authors write, this condition is rare in its own right. However, I would like to discuss two other rare aspects of this case: that it occurred during childhood and that acute scrotal disease and anaphylaxis occurred simultaneously.

There has been a long debate as to whether anaphylaxis caused by *Anisakis* occurs with the ingestion of live insect bodies only or with dead insect bodies as well.<sup>2</sup> Since several allergen components of *Anisakis* have been identified and their tolerance to heat has been reported, it is theoretically possible that anaphylaxis could occur with the ingestion of dead larvae body parts. However, some reports suggest that even patients sensitized to *Anisakis* may not develop allergic symptoms with the ingestion of frozen *Anisakis* larvae.<sup>3</sup>

Nevertheless, there have been very few cases of gastrointestinal anisakiasis and anaphylaxis occurring simultaneously. In fact, previous literature has shown that in 40 cases of anaphylaxis which occurred due to the ingestion of live fish, upper gastrointestinal endoscopy revealed no difference in phenotype between the 20 cases in which live larvae were found and the 20 cases in which they were not found, and even in the case of live *Anisakis* bodies, the abdominal symptoms were minor.<sup>4</sup> Of the 128 cases included in our previous study, only one could be said to have developed anaphylaxis and gastric anisakiasis simultaneously.<sup>5</sup>

The patient we experienced was a 36-year-old woman with a previous history of gastric anisakiasis. Urticaria, watery diarrhea and vomiting, and respiratory distress developed three hours after eating sashimi (sliced raw fish) of young yellowtail. The patient was rapidly administered adrenaline intramuscular injection, followed by H1/H2 blockers and methylprednisolone, and admitted to the hospital for observation. However, after a day of admission, she continued to complain of intermittent epigastric pain and underwent upper gastrointestinal endoscopy. A live *Anisakis* larva was found in the gastric cavity, and the epigastric pain disappeared after its removal. This case was negative for fish-specific IgE and positive for *Anisakis*-specific IgE (ImmunoCAP<sup>®</sup> fluorescent enzyme immunoassay). Similar cases have been reported recently by Shikino et al.<sup>6</sup>

The reason for such phenotypic variations after the ingestion of live *Anisakis* is a direction for future research. From this perspective, it would be very interesting to explore what pathological changes, e.g., eosinophilic granulomatous changes, had occurred in the scrotum or lungs of the boy described in Antonella et al. I believe that these characteristics are important to determine the cause of the respiratory impairment in this case.

Further, it is interesting to note that this phenomenon occurred in an 8-year-old boy. Only one in our 128 cases of fish-associated anaphylaxis was under 10 years of age, and this case was positive for the IgE specific to horse mackerel and mackerel.<sup>5</sup> Therefore, the group I analyzed did not include cases of *Anisakis* anaphylaxis under the age of 10 years. The case described in Antonella's manuscript does not appear to have undergone a specific IgE test or other skin tests. However, given the rarity of *Anisakis* anaphylaxis in this age group,

anaphylaxis due to other culprits such as parvalbumin caused by fish ingestion should also be considered.

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#### Reference

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