Diagnosis: Luminal anisakidosis due to Pseudoterranova decipiens

Anisakidosis is caused by a group of nematodes found in raw or poorly cooked saltwater fish or squid. Three nematode species are implicated in this disease; of these species, Anisakis simplex and Pseudoterranova decipiens (figure 1) are most commonly associated with disease in humans. Contracecum species are rarely associated with disease in humans; however, when this nematode is present, tissue invasion is more common. Presentations of anisakidoses range from purely luminal infections to those in which local invasion of the gastric or intestinal mucosa and submucosa occurs in association with granuloma formation. Rarely, larval migration through a luminal wall with dissemination to the omentum, lung, and liver may occur [1].

Examination of the partially dissected worm from our patient under a dissecting microscope revealed a nematode with a muscular anterior esophagus connected to a distal ventriculus (figure 2). An anterior projecting cecal appendix was observed branching from the intestine. Three lips resembling those seen in Ascaris species (not shown) were also observed. These findings are consistent with the nematode P. decipiens.

P. decipiens is most commonly associated with infestation of the gastric or upper intestinal lumen. Following ingestion of the third-stage larvae, the adult worm emerges from the gut into the throat or mouth. A classic symptom is a tickling sensation in the back of the throat followed by expectoration of a live worm [1]. Histologically, anterior lateral cords with a “butterfly shape” are characteristic [2]. The infestation may be self limited, and treatment is often not required. However, P. decipiens has been reported to cause local gastric mucosal invasion similar to that caused by A. simplex [3].

A. simplex is often associated with locally invasive disease within the gastric or intestinal mucosa and submucosa. This species lacks the cecal or ventricular appendix, a feature by which it can be distinguished from P. decipiens. Histologically, the lateral cords appear “Y-shaped” and pedunculated. Endoscopic removal of the worms is the treatment of choice and usually is curative [4].

The life cycle of anisakine nematodes begins with the consumption by marine mammals of fish infected with third-stage larvae. The larvae mature into adult worms within the mammalian stomach, where they bore into the gastric mucosa and produce ulceration. Females lay eggs that pass into the water with feces. The eggs hatch in the seawater, and larvae are ingested by marine crustations (krill), where the larvae mature to the third stage. Infected krill are eaten by marine fish or squid [1].

Humans serve as accidental hosts by eating raw or underprepared fish or squid. Professional sushi chefs indicate that the parasites are often pigmented and easy to identify in raw fish. However, these worms may lack pigment and elude all but the most careful observer. The nematode can survive in vinegar for several days or weeks; therefore, pickling infested fish such as herring may not prevent disease [5].
In summary, human anisakidosis must be clinically differentiated from other roundworm infections such as ascariasis because the clinical course, treatment, and etiology of these infections differ. Careful morphological identification of the worms may aid in assessing the potential for invasive disease and may indicate potential sources of community-acquired infection [2].

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References