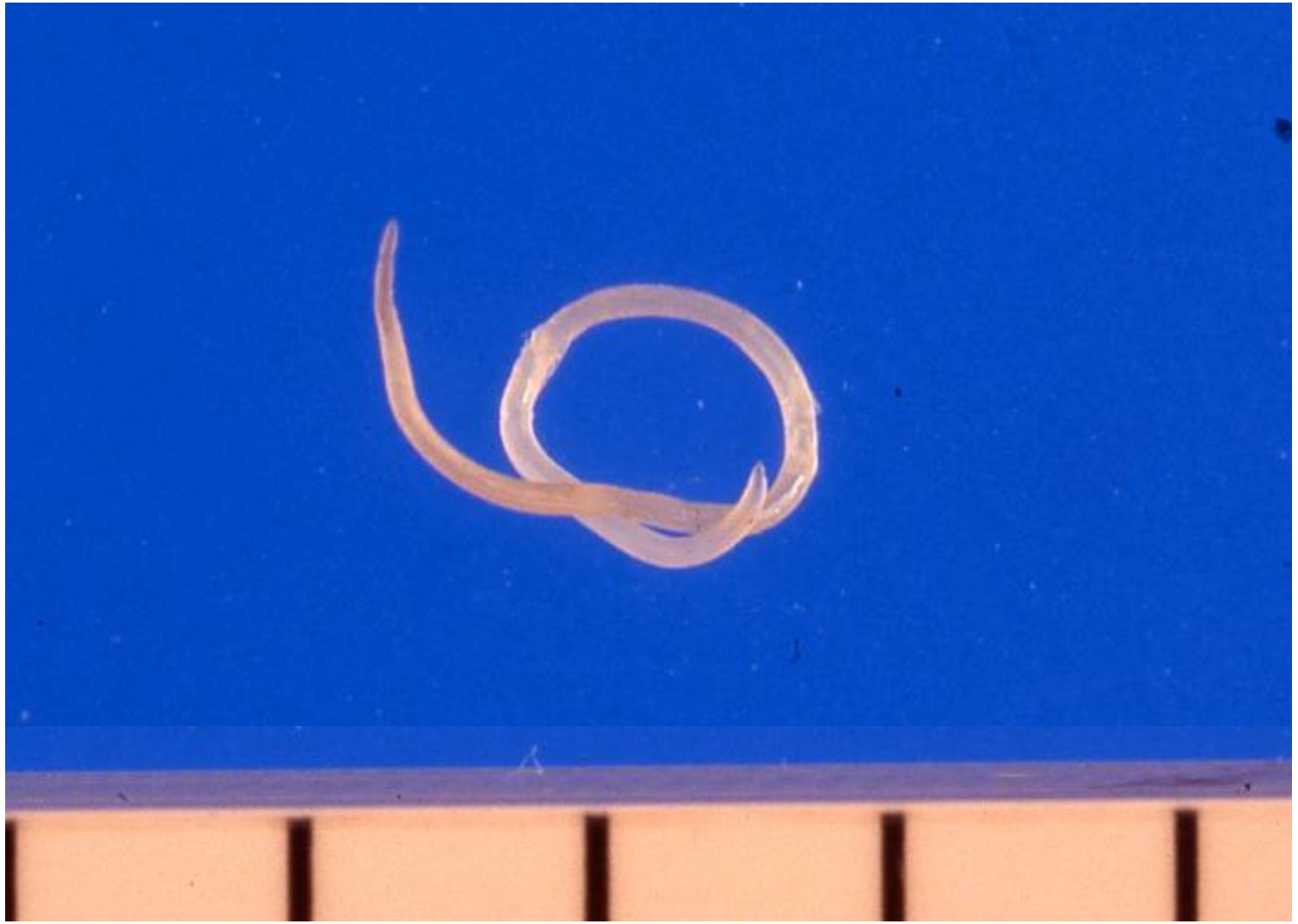
Intestinal anisakiasis

Anisakiasis is caused by accidental ingestion of Anisakis larvae, present in fresh fish and squid. Abdominal pain is severe and abrupt to cause acute abdomen. Human anisakiasis can be divided into the three types; gastric, intestinal, and extra-gastrointestinal anisakiasis. According to a series of 15715 cases of anisakiasis reported by Ishikura, gastric anisakiasis accounts for 95.6% of the cases, whereas intestinal and extra-gastrointestinal anisakiasis account for 4.1% and 0.3% of the cases, respectively. Intestinal anisakiasis is often seen in gastrectomized individuals, and may be complicated by perforation and strangulation. Anisakis larvae can survive only for a few days in the human gastrointestinal tract. Therefore, the symptoms due to acute inflammation subside within 2-3 weeks and may be treated well by conservative therapy.

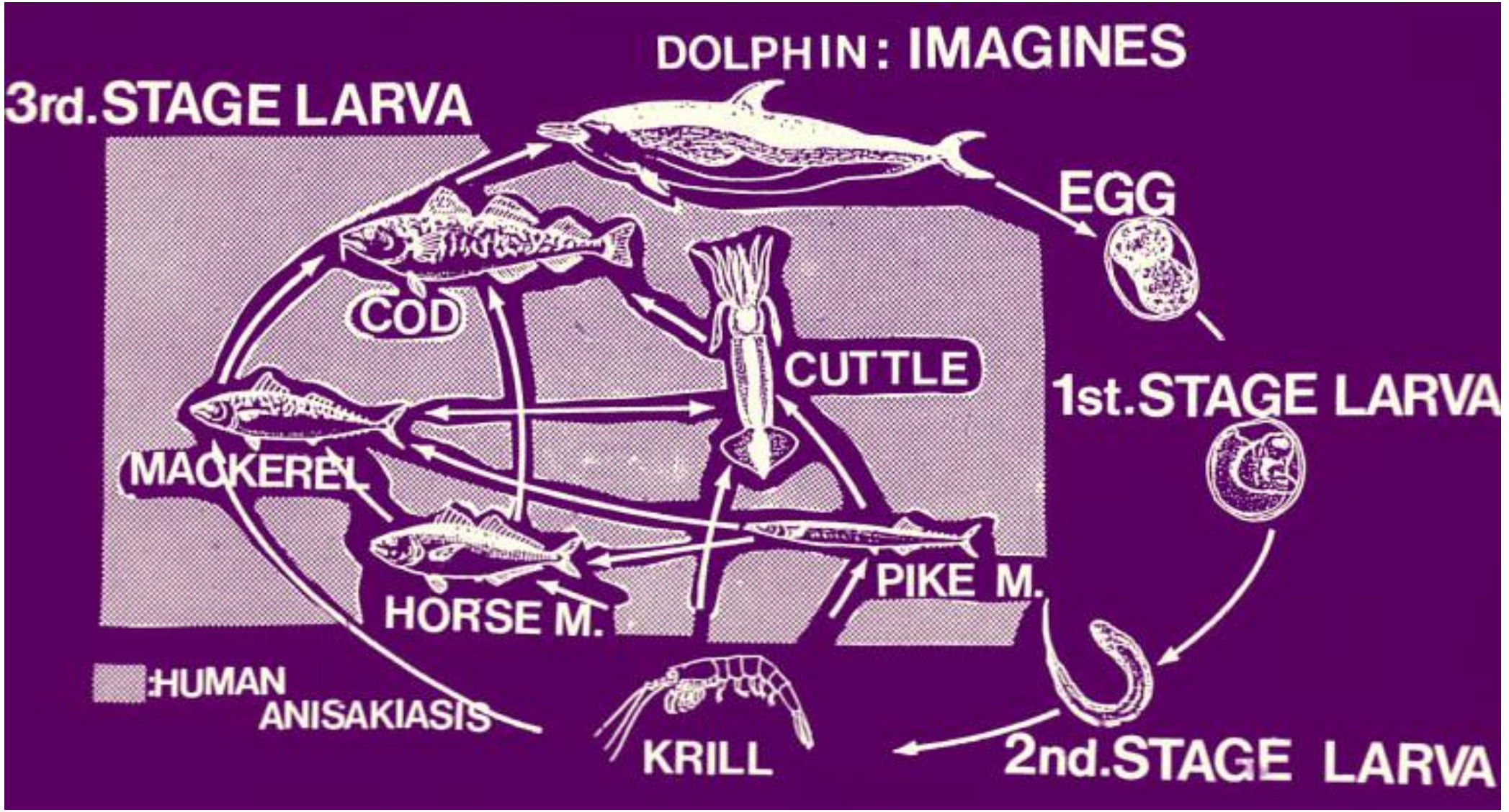
Ref.-1: Ishikura H. Anisakis. Rinsho Shokaki Naika (Clin Gastroenterol) 1991; 6: 1052-1060 (in Japanese)

Ref.-2: Shrestha S, et al. Intestinal anisakiasis treated successfully with conservative therapy: importance of clinical diagnosis. World J Gastroenterol 2014; 20(2): 598-602. doi: 10.3748/wjg.v20.i2.598

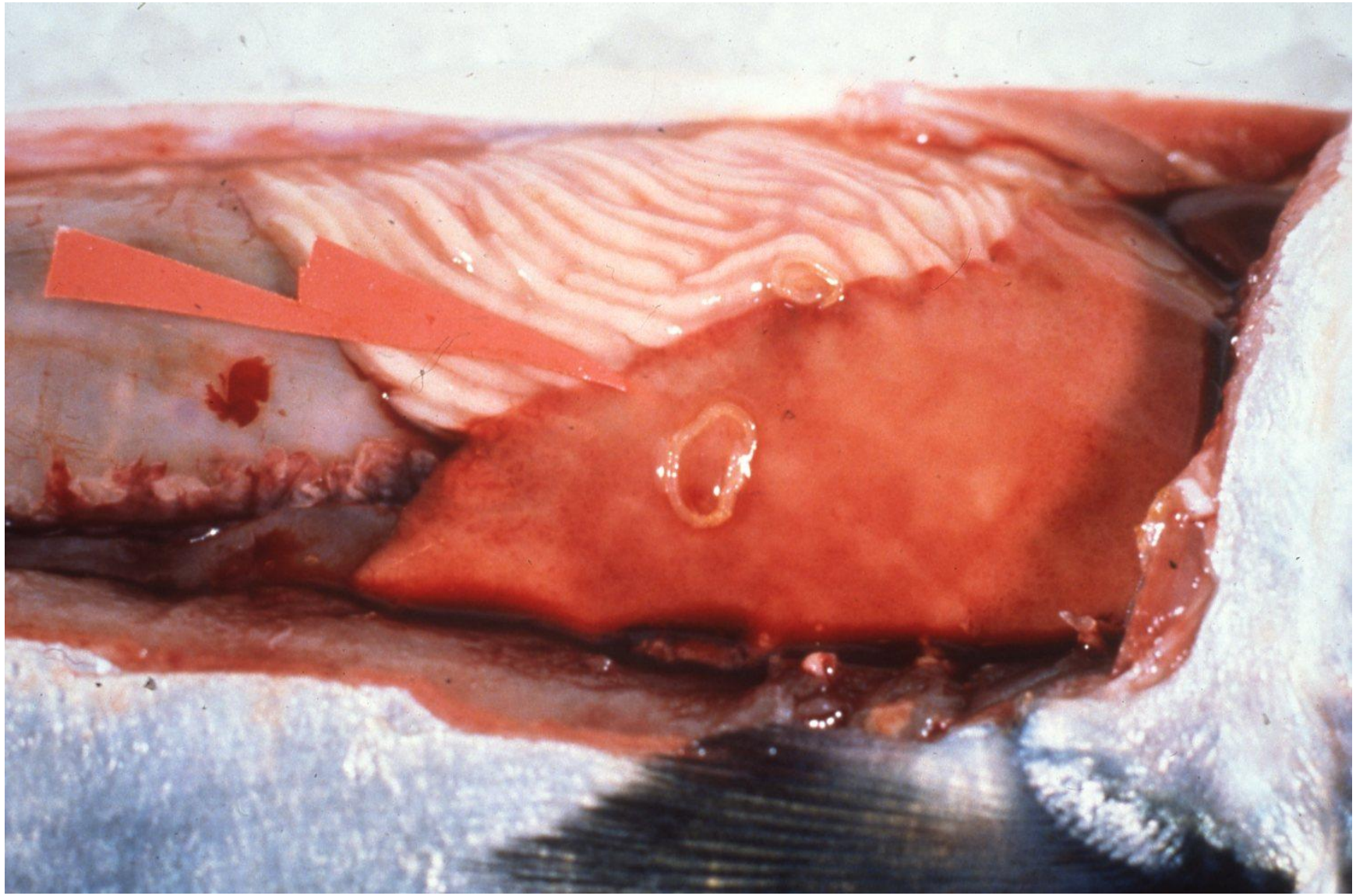
Gross appearance of intestinal anisakiasis in a male patient aged 50’s with a history of gastrectomy. Intestinal anisakiasis is often seen in gastrectomized individuals. A 2 cm white-colored nematode is stuck in the highly edematous, partially removed jejunum.



Gross appearance of an *Anisakis simplex* larva after formalin fixation.
A thin translucent nematode is seen. A measure indicates 5 mm.

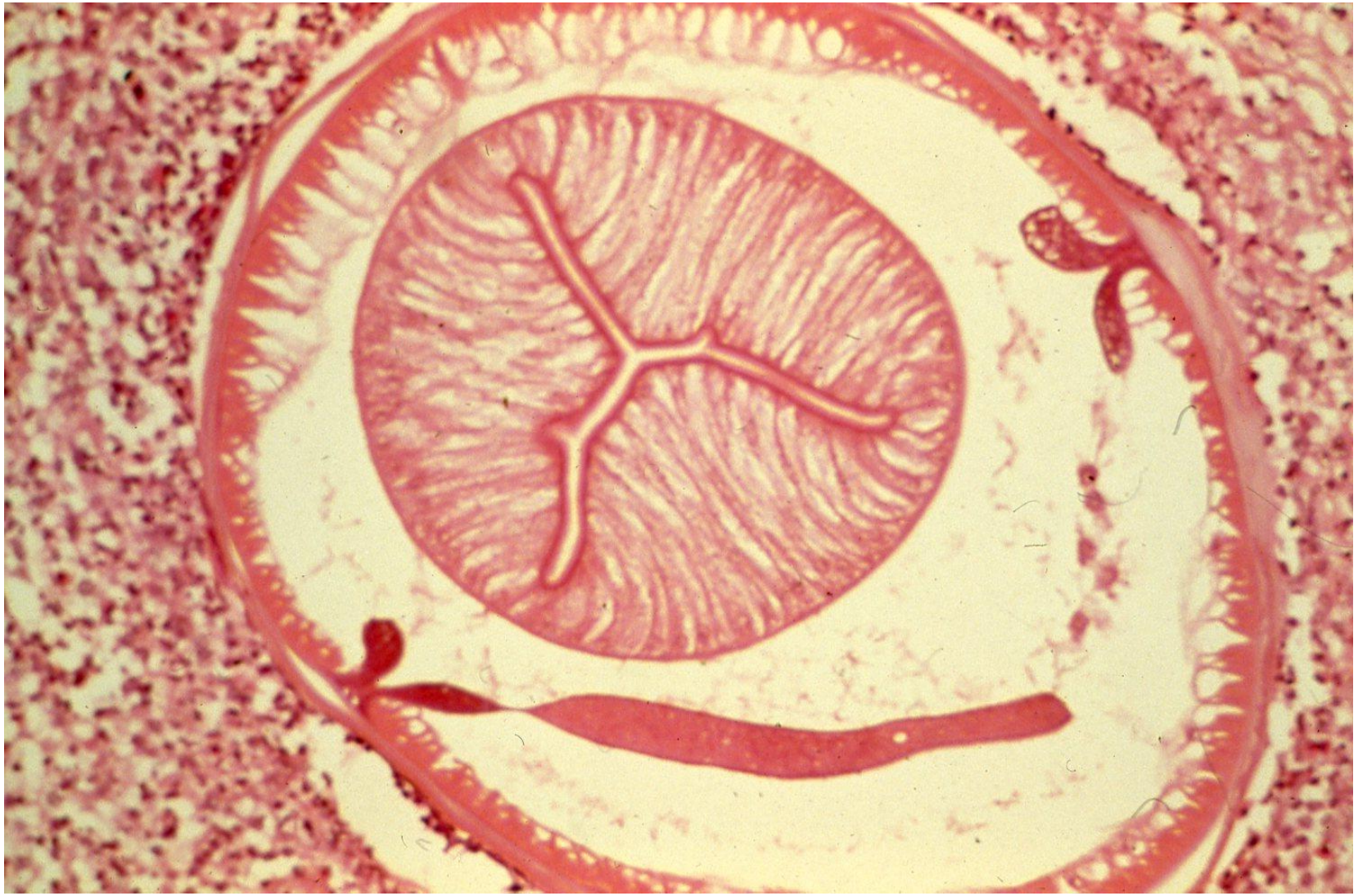


Life cycle of *Anisakis simplex*. The final host is the dolphin and whale. The site of infestation is the gastric mucosa of the sea mammals. Almost all sea fish can be an intermediate (paratenic) hosts. The third-stage larva infects the human by ingesting raw fish as Sushi or Sashimi. The larva dies when heated or frozen.



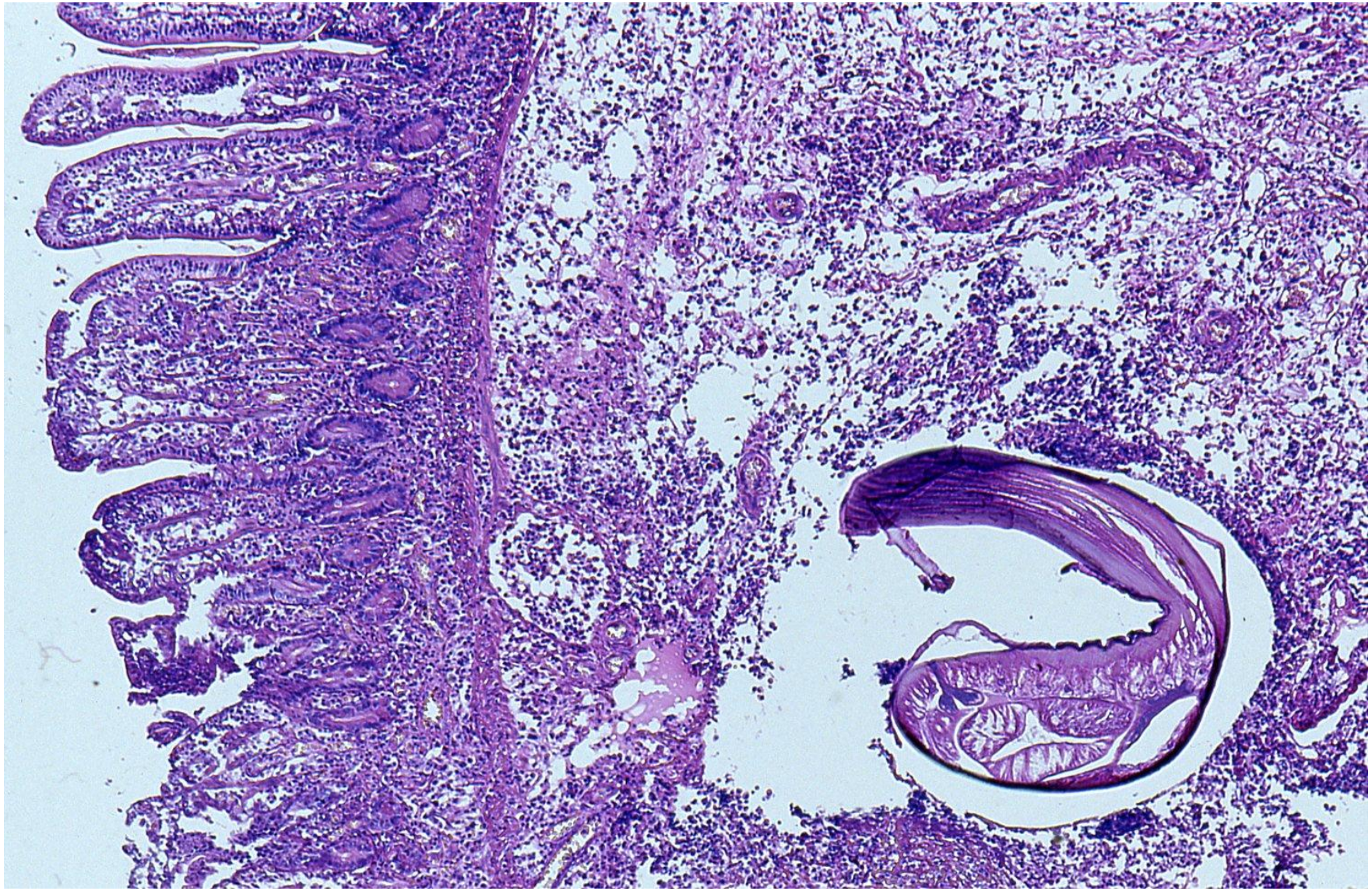
An Anisakis larva (the third stage) on the gill of the mackerel is shown. The larvae are preferentially distributed in/on the gill, peritoneum and gonads of the fish. They migrate to the striated muscles when heavily infected.

Intestinal anisakiasis. The cut surface of *Anisakis simplex* is demonstrated. Columnar-shaped muscle layer is located just beneath the cuticle. Paired clover-shaped lateral chords are characteristic. Intestine and Renette cells (a long solid structure, representing an excretory organ) are observed. Eosinophilic cellulitis has been provoked. H&E-1

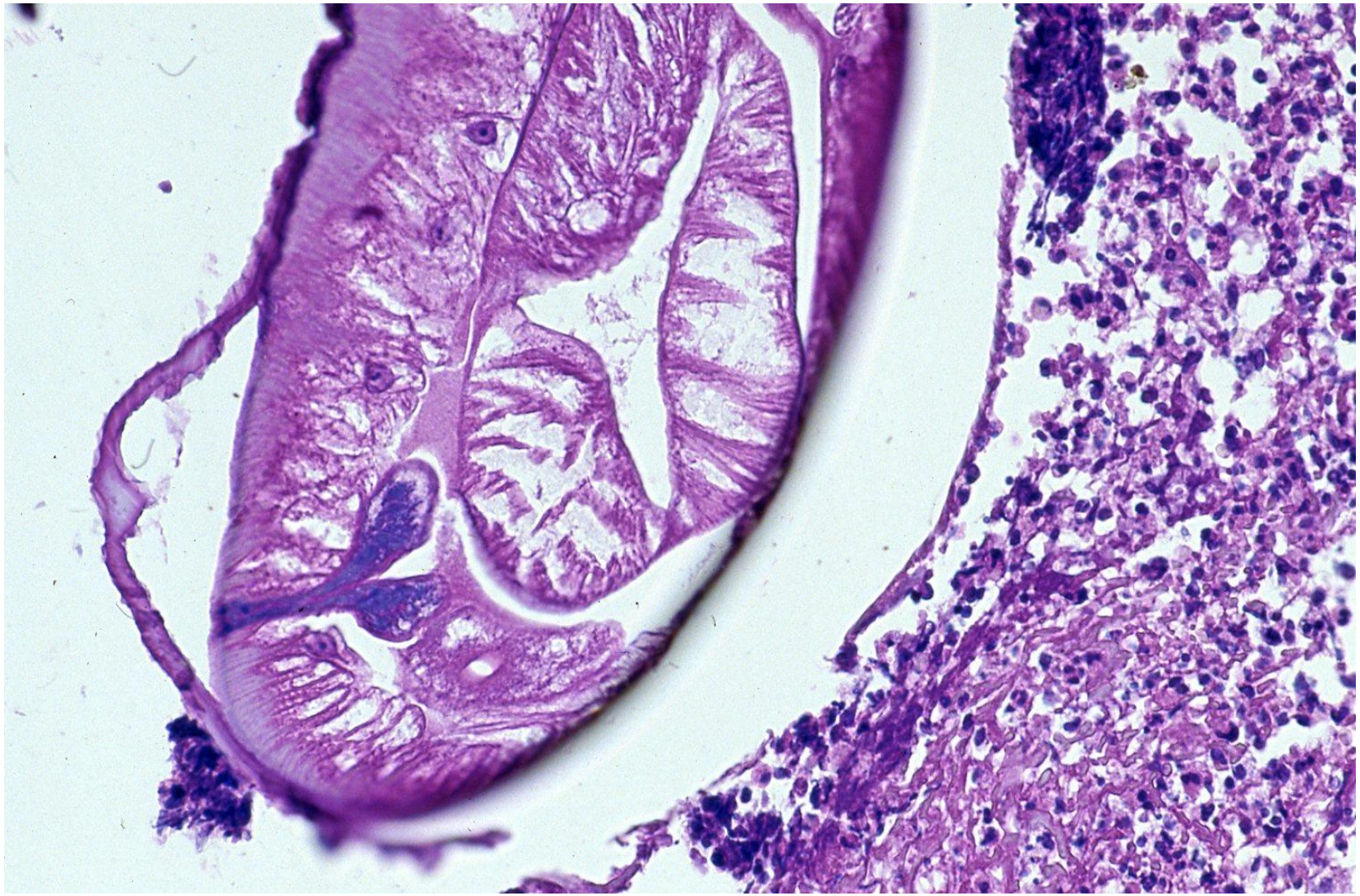


Intestinal anisakiasis. The cut surface of *Anisakis simplex* is demonstrated. Columnar-shaped muscle layer is located just beneath the cuticle. Paired clover-shaped lateral chords are characteristic. Intestine and Renette cells (a long solid structure, representing an excretory organ) are observed. Eosinophilic cellulitis has been provoked. H&E-2

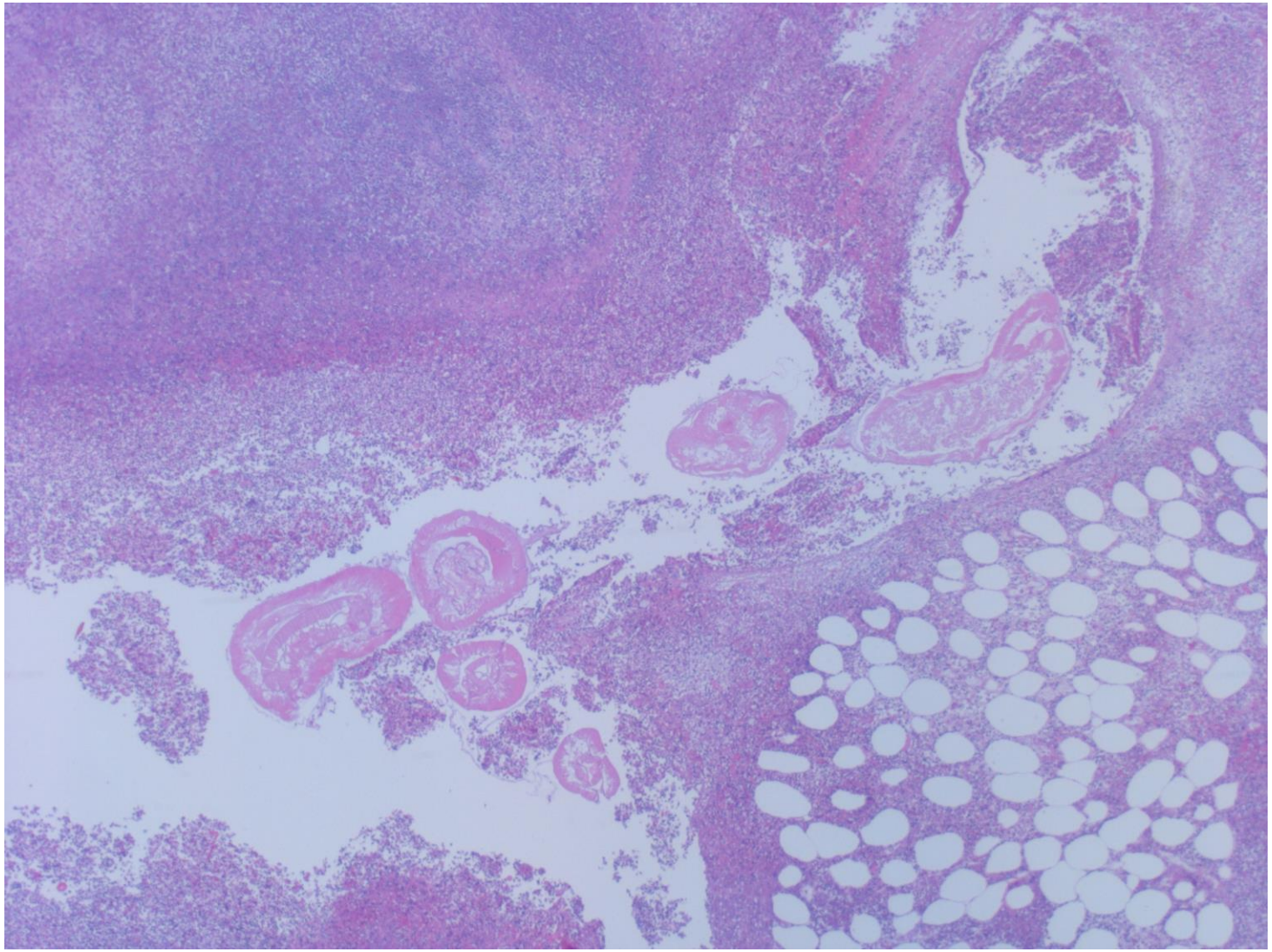
Intestinal anisakiasis. The cut surface of *Anisakis simplex* is demonstrated. Columnar-shaped muscle layer is located just beneath the cuticle. A clover-shaped lateral chord and intestine are closed up. Eosinophilic cellulitis is seen. H&E-3



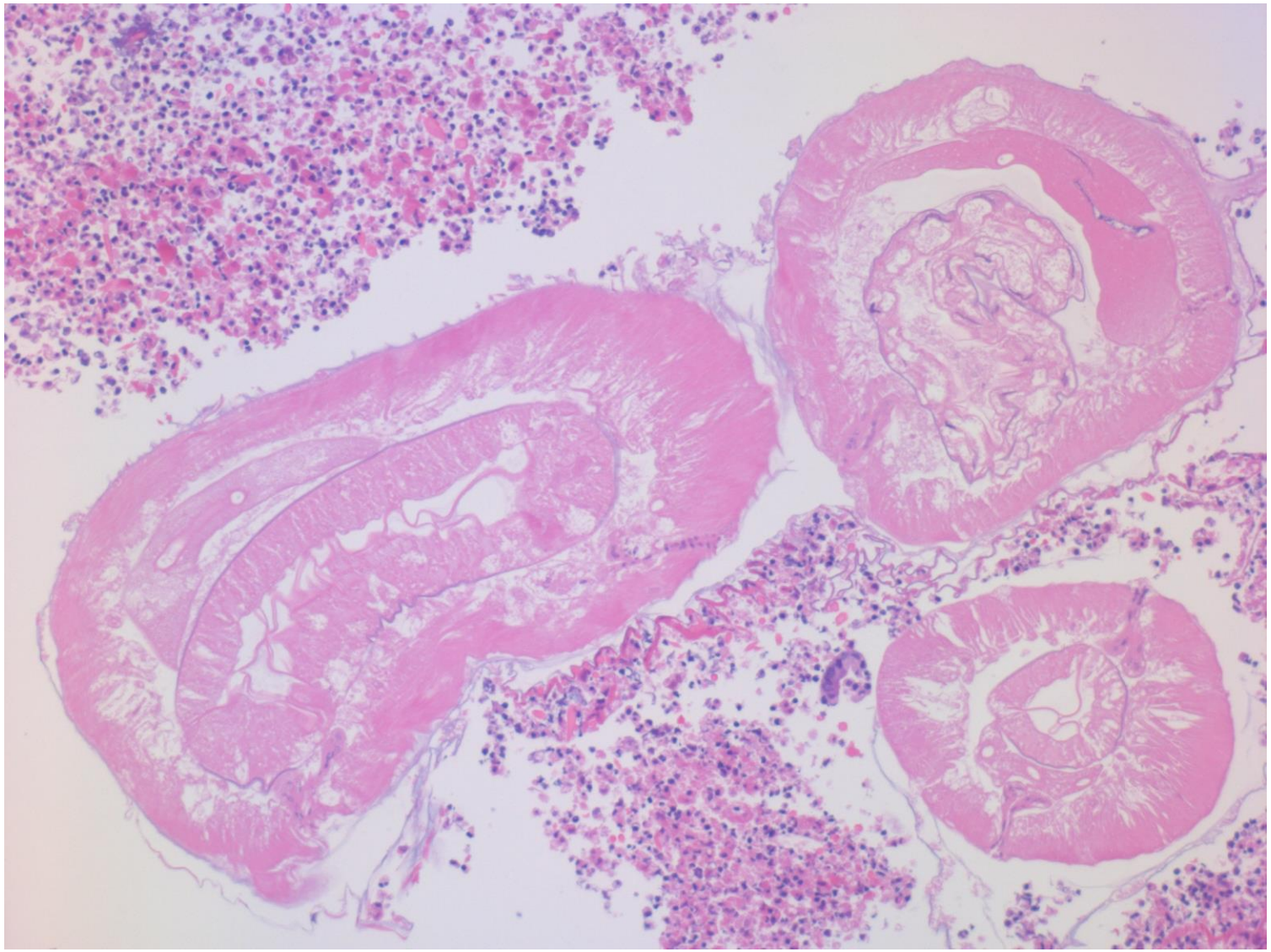
Another case of intestinal anisakiasis. The cut surface of *Anisakis simplex* is demonstrated. In the submucosal layer. The muscle layer, clover-shaped lateral chord and intestine can be recognized. Eosinophilic cellulitis has been provoked. H&E-4



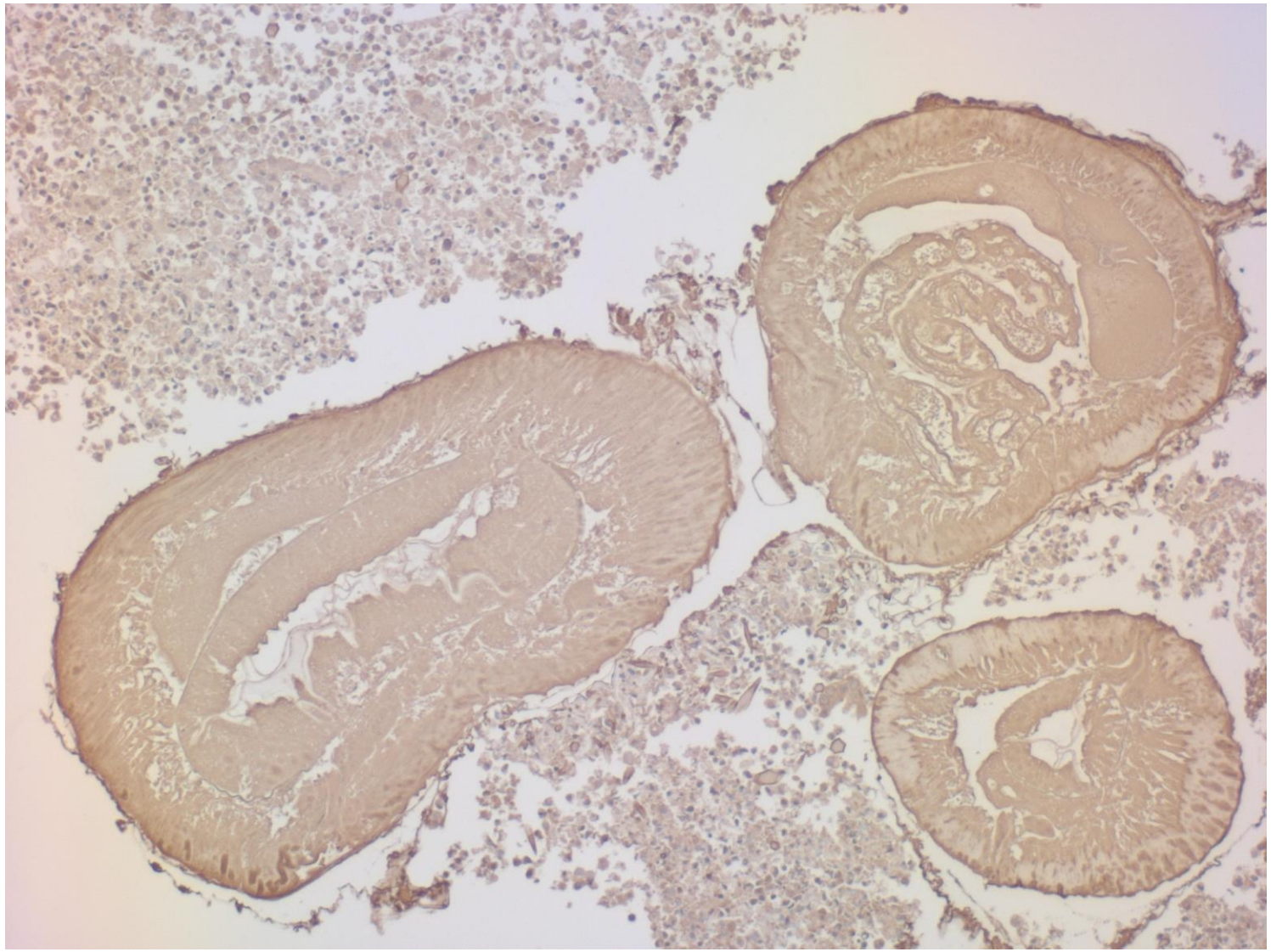
Another case of intestinal anisakiasis. The cut surface of *Anisakis simplex* is demonstrated. In the submucosal layer. The muscle layer, clover-shaped lateral chord and intestine can be recognized. Eosinophilic cellulitis has been provoked. H&E-5



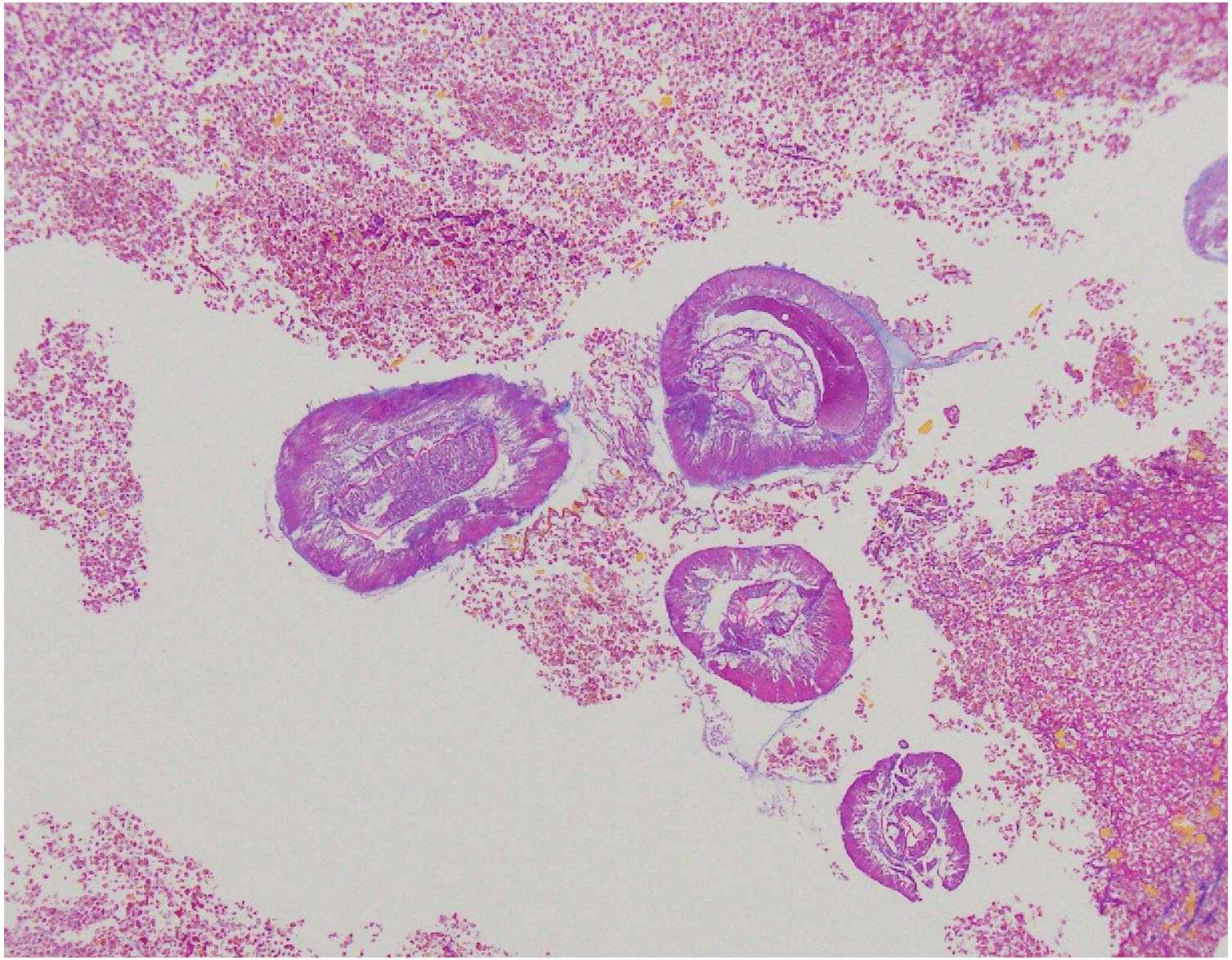
Perforated intestinal anisakiasis. The cut surfaces of *Anisakis simplex* are seen along the invading tract. Marked eosinophilic cellulitis is seen. H&E-a



Perforated intestinal anisakiasis. The cut surfaces of *Anisakis simplex* are seen along the invading tract. The muscle layer, intestine and Renette cells can be recognized. Eosinophilic reactions are observed. H&E-b



Perforated intestinal anisakiasis. The cut surfaces of *Anisakis simplex* are seen along the invading tract. *Anisakis simplex* antigen is positive. Immunostaining using monoclonal antibody An-2



Perforated intestinal anisakiasis. The cut surfaces of *Anisakis simplex* are seen along the invading tract. The muscle layer, intestine and Renette cells can be recognized. Eosinophilic reactions are observed. Azan staining