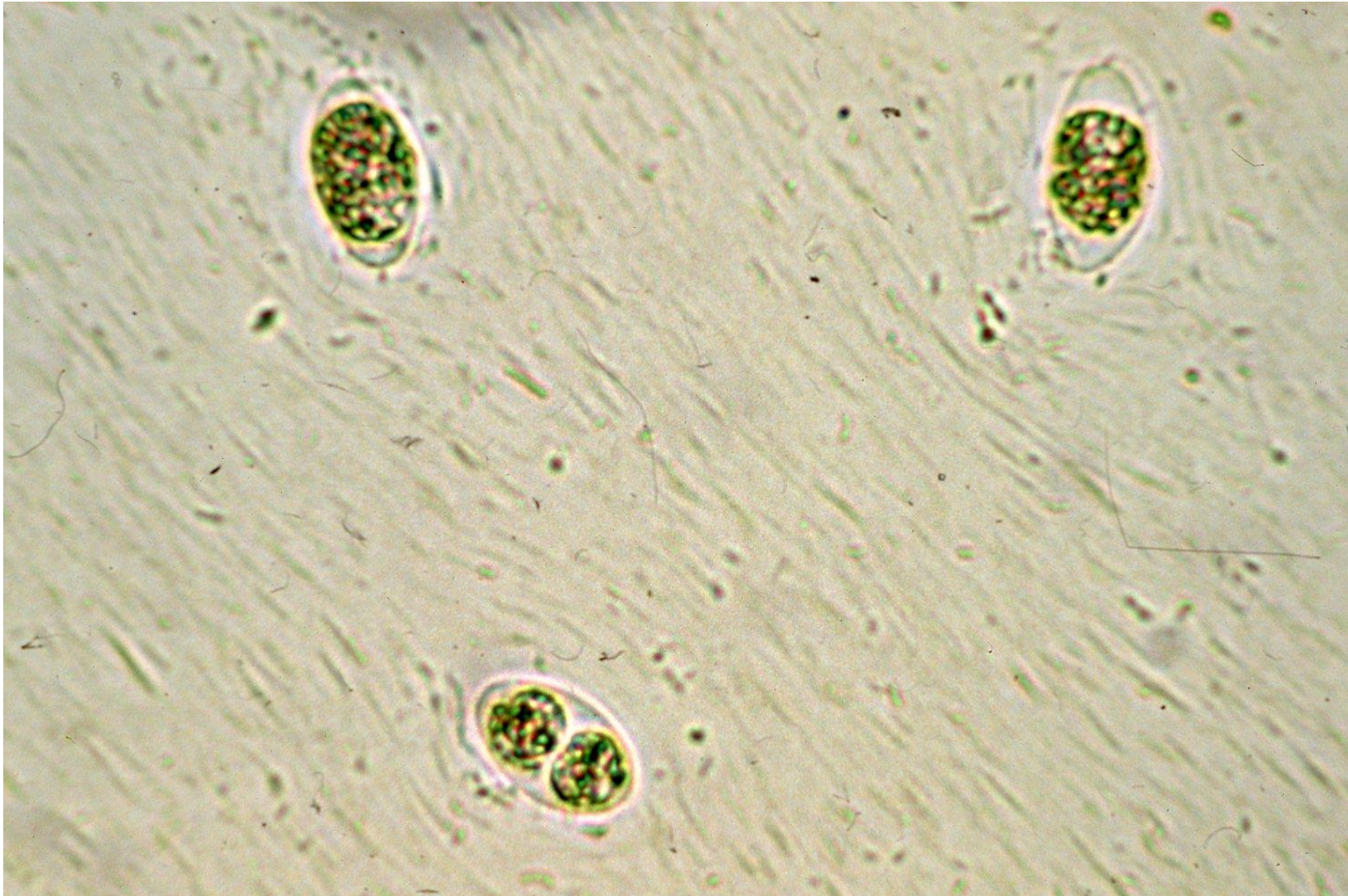


# Cystoisosporiasis: *Cystoisospora belli* infection

Cystoisosporiasis is caused by infection of *Cystoisospora belli* (previously called *Isospora belli*), an intestinal coccidium. The protozoan disease was first identified as a cause of diarrhea in US troops abroad during World War I (“belli” means the war). The parasite is endemic in tropical and subtropical countries. Diarrhea is mild and transient in immunocompetent hosts, but chronic diarrhea may be encountered. Cystoisosporiasis may be seen as opportunistic infection in patients with AIDS or adult T-cell leukemia and patients after prolonged corticoid therapy, and diarrhea can be fulminant. The disease is acquired by ingestion of water or food contaminated by human feces.

Ref.-1: Ohno M, et al. Chronic cystoisosporiasis in an immunocompetent adult: a case report. *Medicine (Baltimore)* 2021; 100(10): e24890. doi: 10.1097/MD.00000000000024890

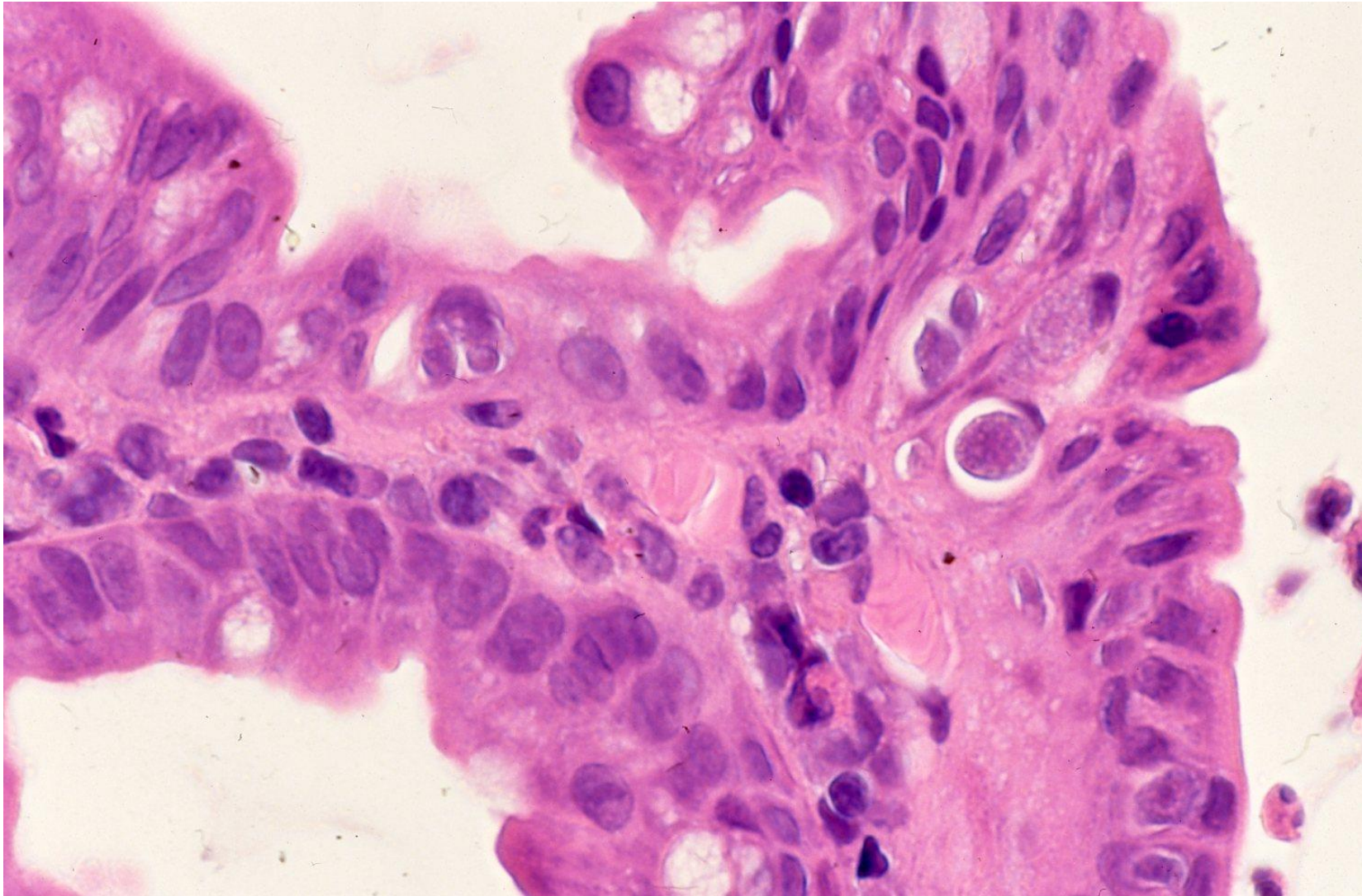
Ref.-2: Ud Din N, et al. Severe *Isospora (Cystoisospora) belli* diarrhea preceding the diagnosis of human T-cell-leukemia-virus-1-associated T-cell lymphoma. *Case Rep Infect Dis* 2012; 2012: 640104. doi: 10.1155/2012/640104



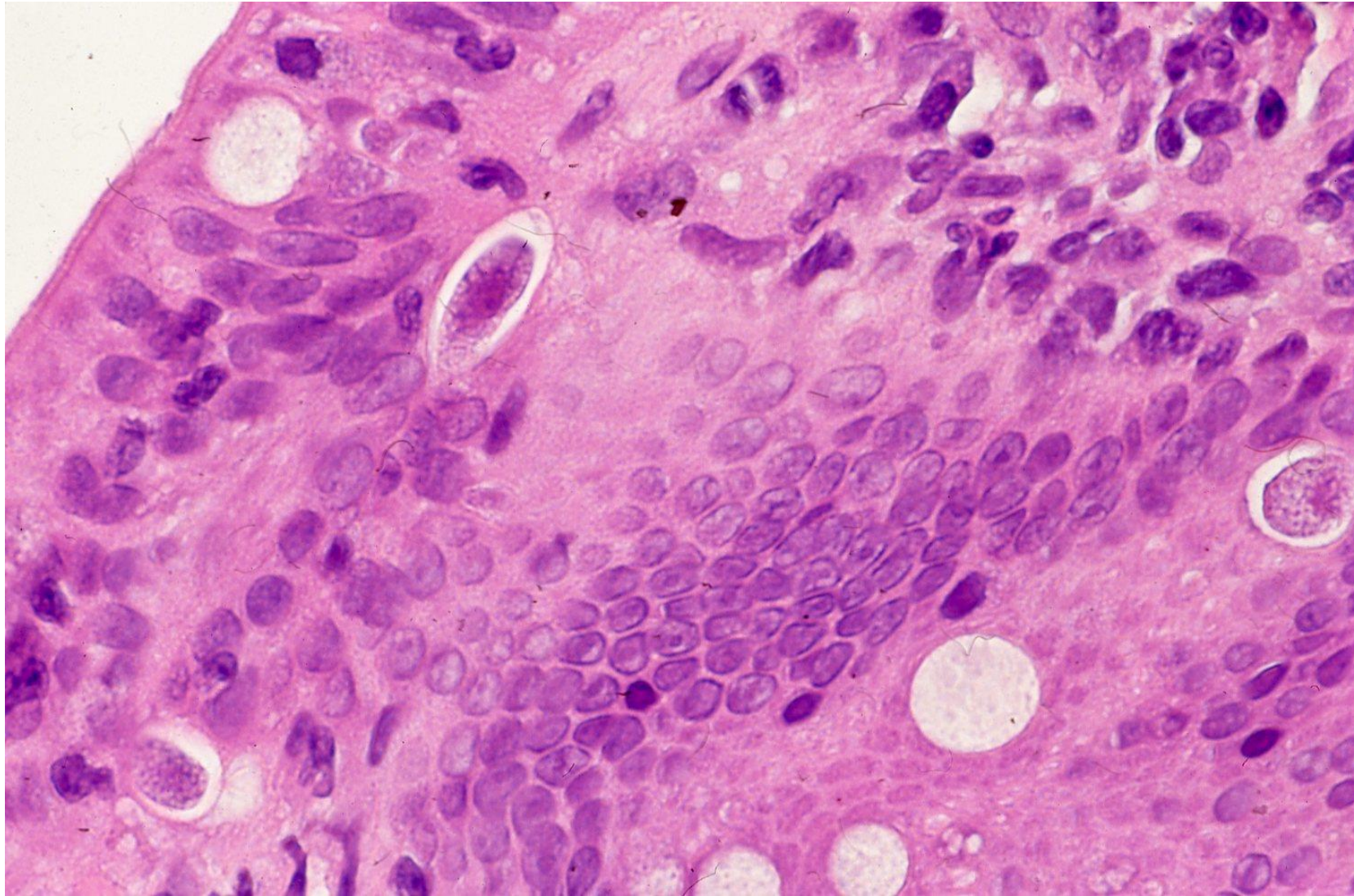
Oocysts of *Cystoisospora belli* in the feces. The oocysts contain one or two sporoblasts. Unstained preparation-1



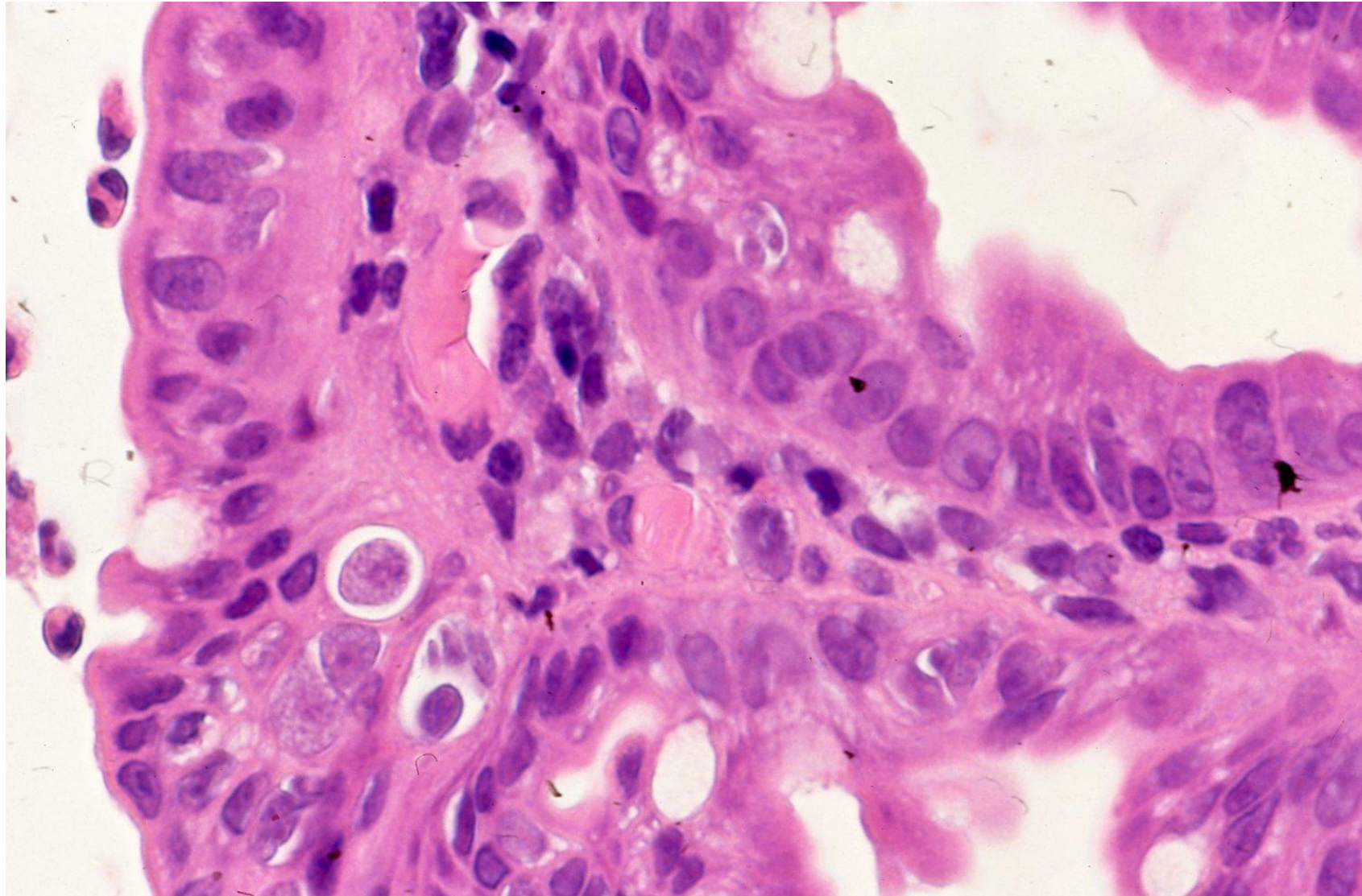
An oocyst of *Cystoisospora belli* in the feces. The oocyst contains a sporoblast. Unstained preparation-2



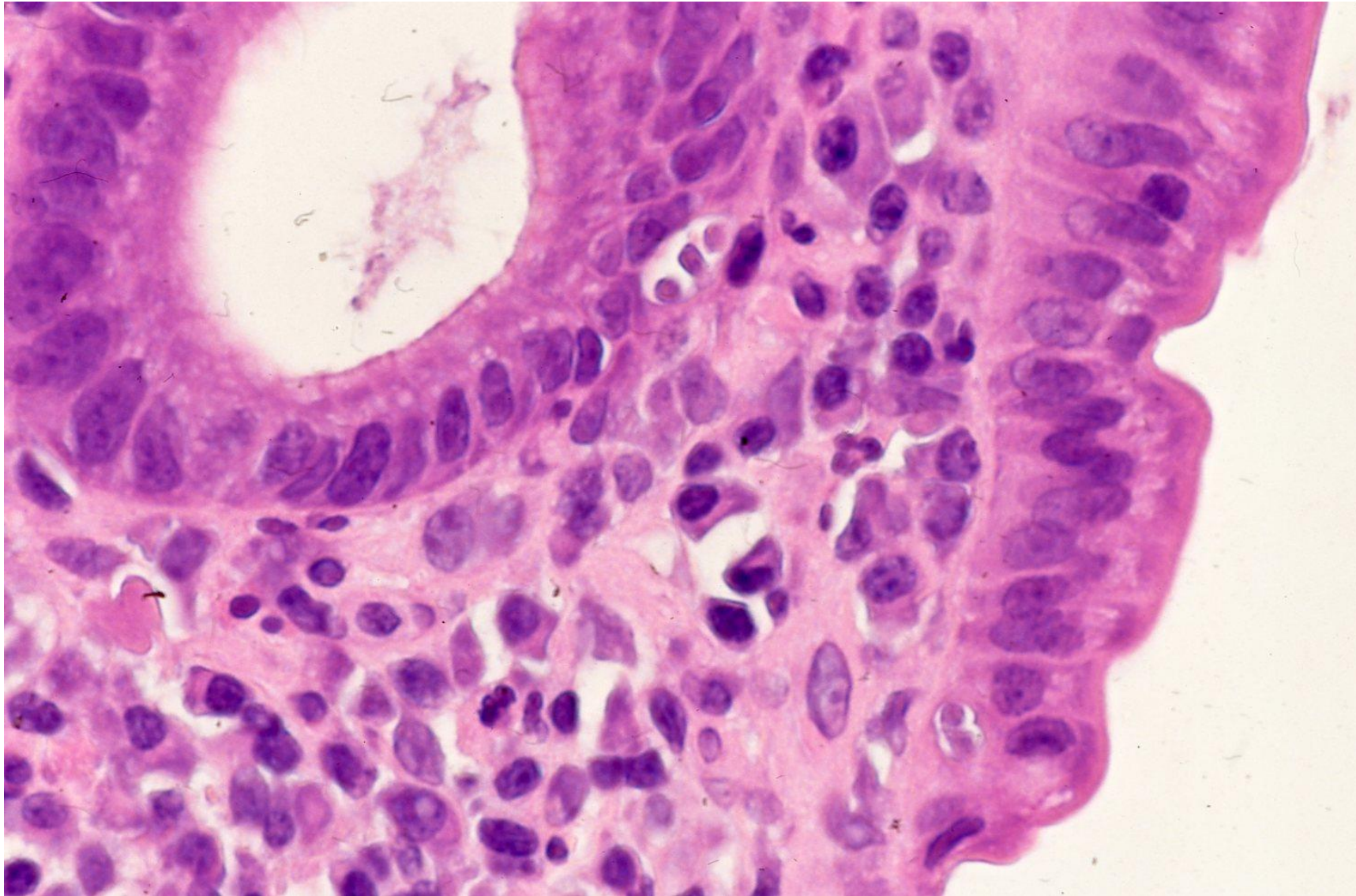
Cystoisosporiasis of the duodenum in a 71-year-old male patient complaining of abdominal pain, diarrhea and weight loss. A few schizonts infect the duodenal epithelial cells in the subnuclear area. H&E-1



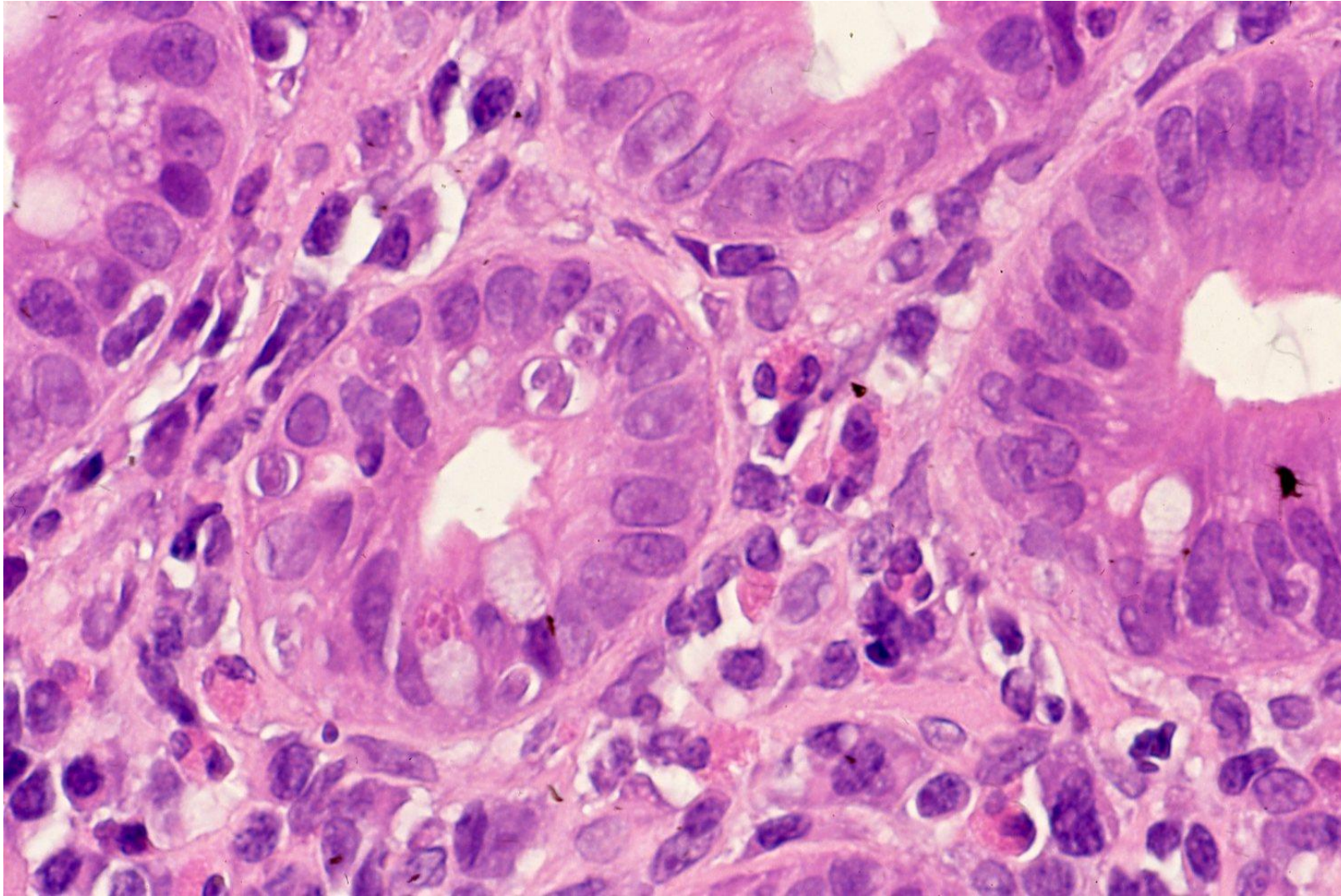
Cystoisosporiasis of the duodenum in a 71-year-old male patient complaining of abdominal pain, diarrhea and weight loss. A few schizonts infect the duodenal epithelial cells in the subnuclear area. H&E-2



Cystoisosporiasis of the duodenum in a 71-year-old male patient complaining of abdominal pain, diarrhea and weight loss. A few schizonts infect the duodenal epithelial cells in the subnuclear area. Small elongated merozoites are formed in the schizont. H&E-3

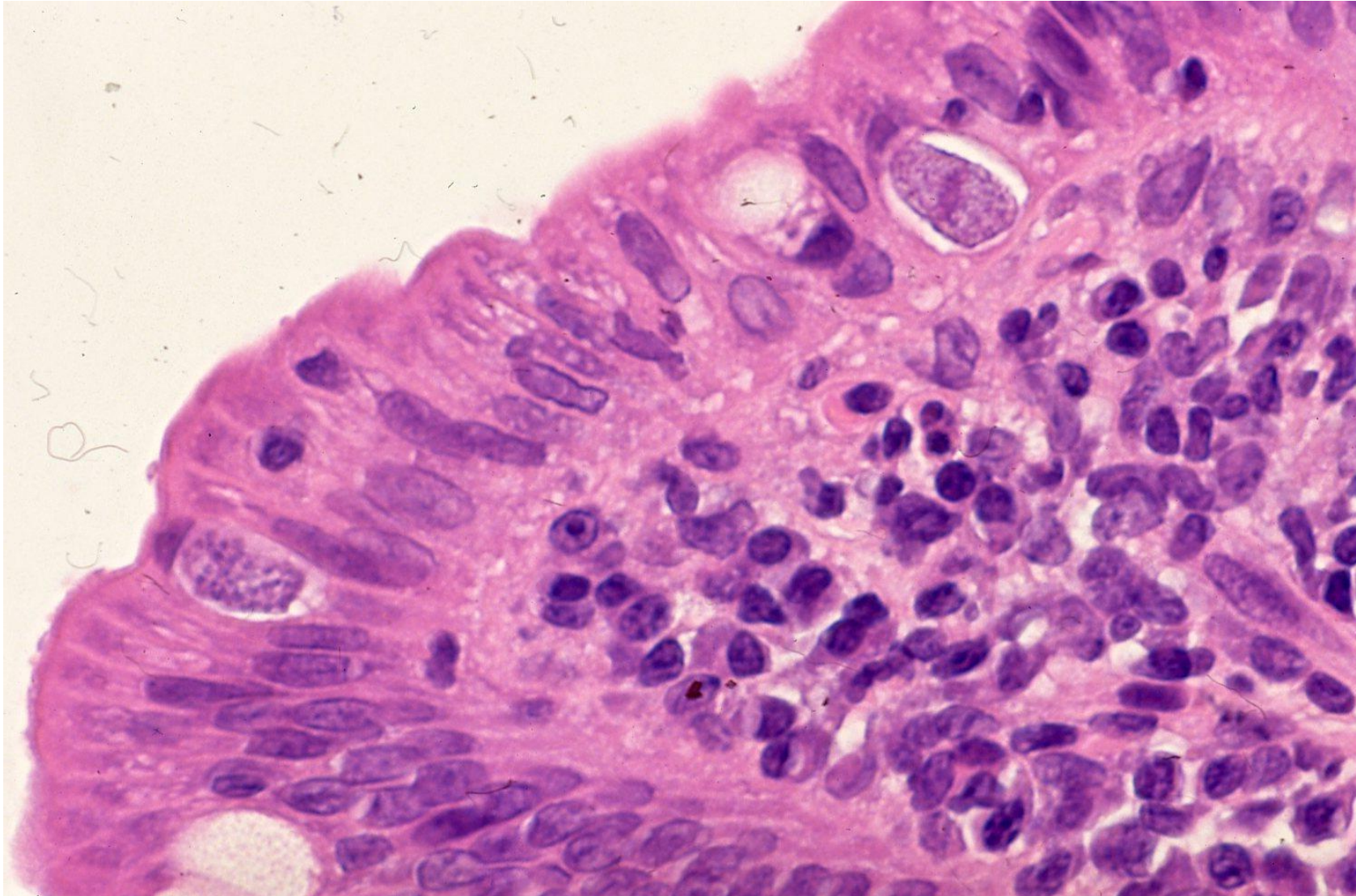


Cystoisosporiasis of the duodenum in a 71-year-old male patient complaining of abdominal pain, diarrhea and weight loss. A few merozoite-containing schizonts are seen in the duodenal epithelial cells in the subnuclear area. H&E-4



Cystoisosporiasis of the duodenum in a 71-year-old male patient complaining of abdominal pain, diarrhea and weight loss. A few merozoite-containing schizonts are seen in the duodenal epithelial cells in the subnuclear area. Eosinophilic infiltration is seen in the lamina propria mucosae. H&E-5

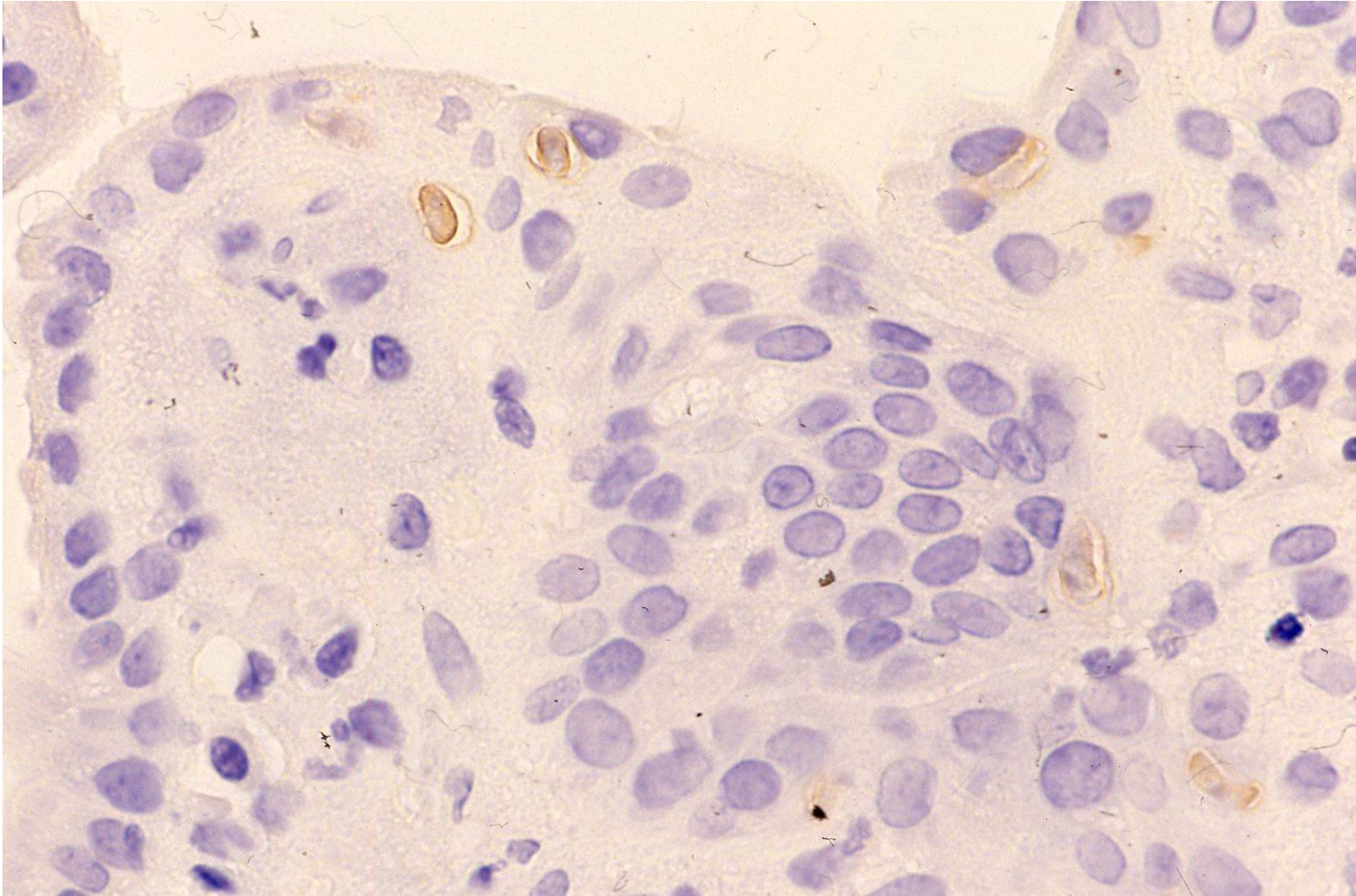




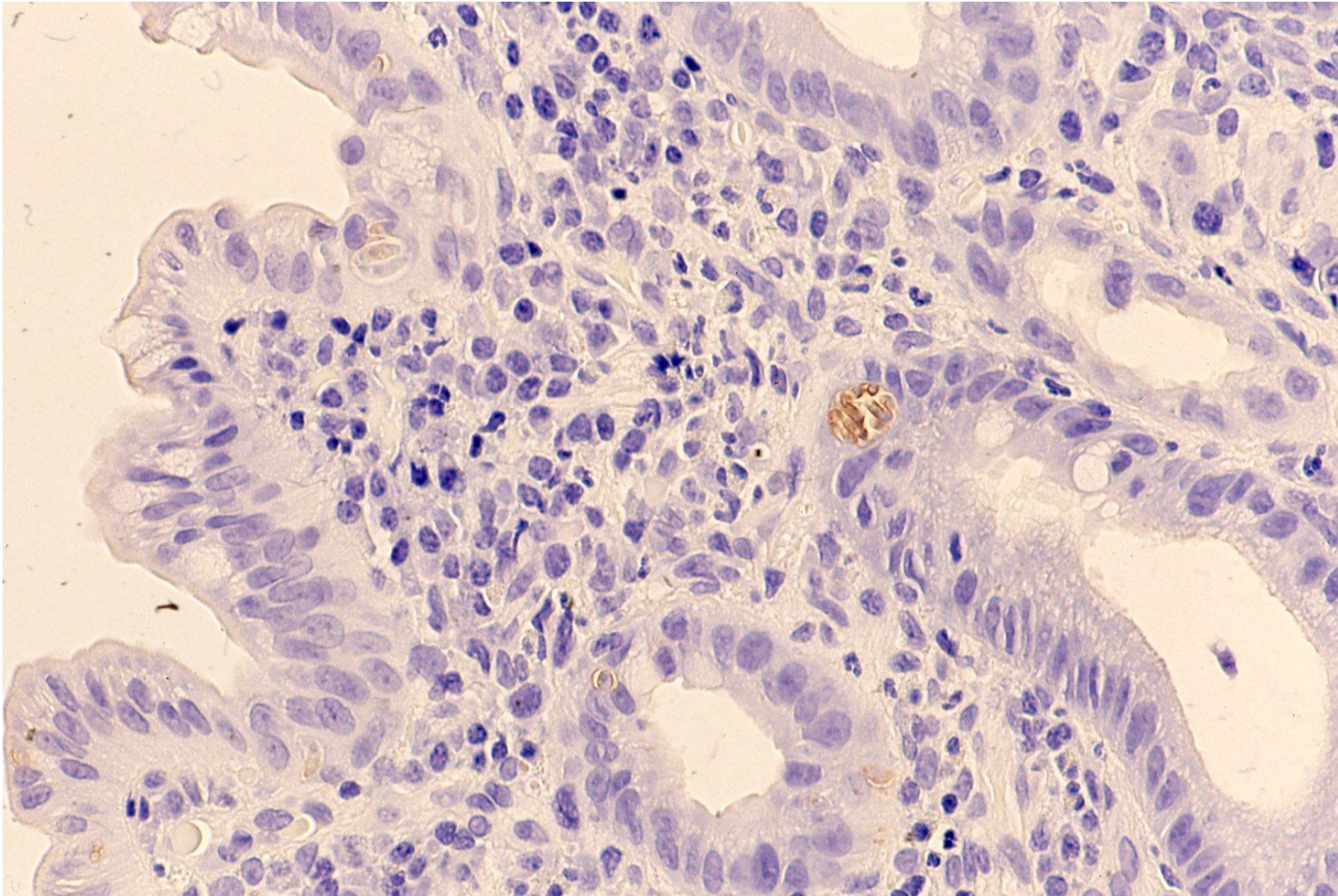
Cystoisosporiasis of the duodenum in a 71-year-old male patient complaining of abdominal pain, diarrhea and weight loss. A few schizonts infect the duodenal epithelial cells in the subnuclear area. H&E-6



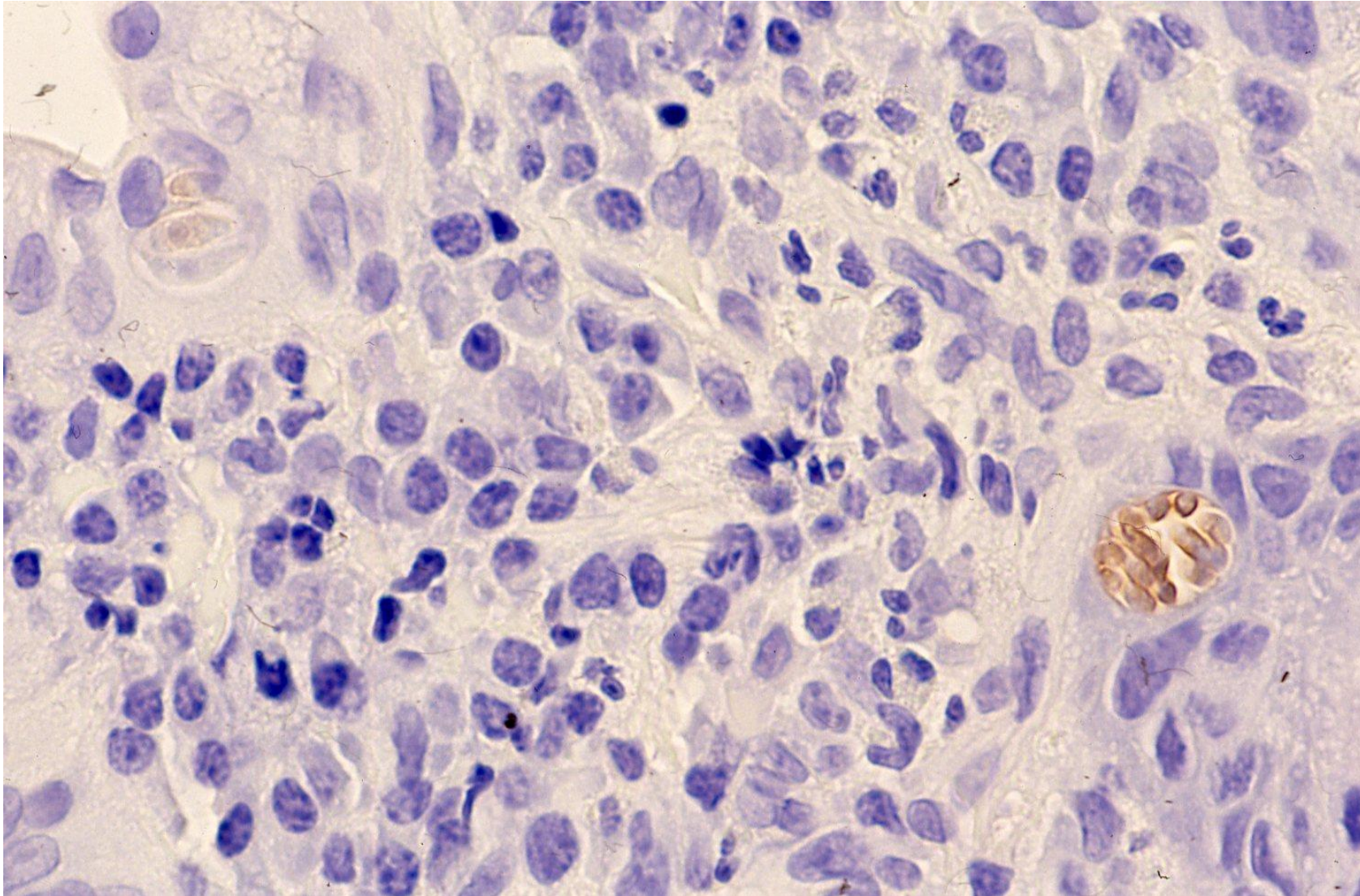
Cystoisosporiasis of the duodenum in a 71-year-old male patient complaining of abdominal pain, diarrhea and weight loss. Immunostaining using the 1:100 diluted patient's own serum decorates the schizonts infecting the duodenal epithelial cells. Immunostaining using the patient's own serum-1



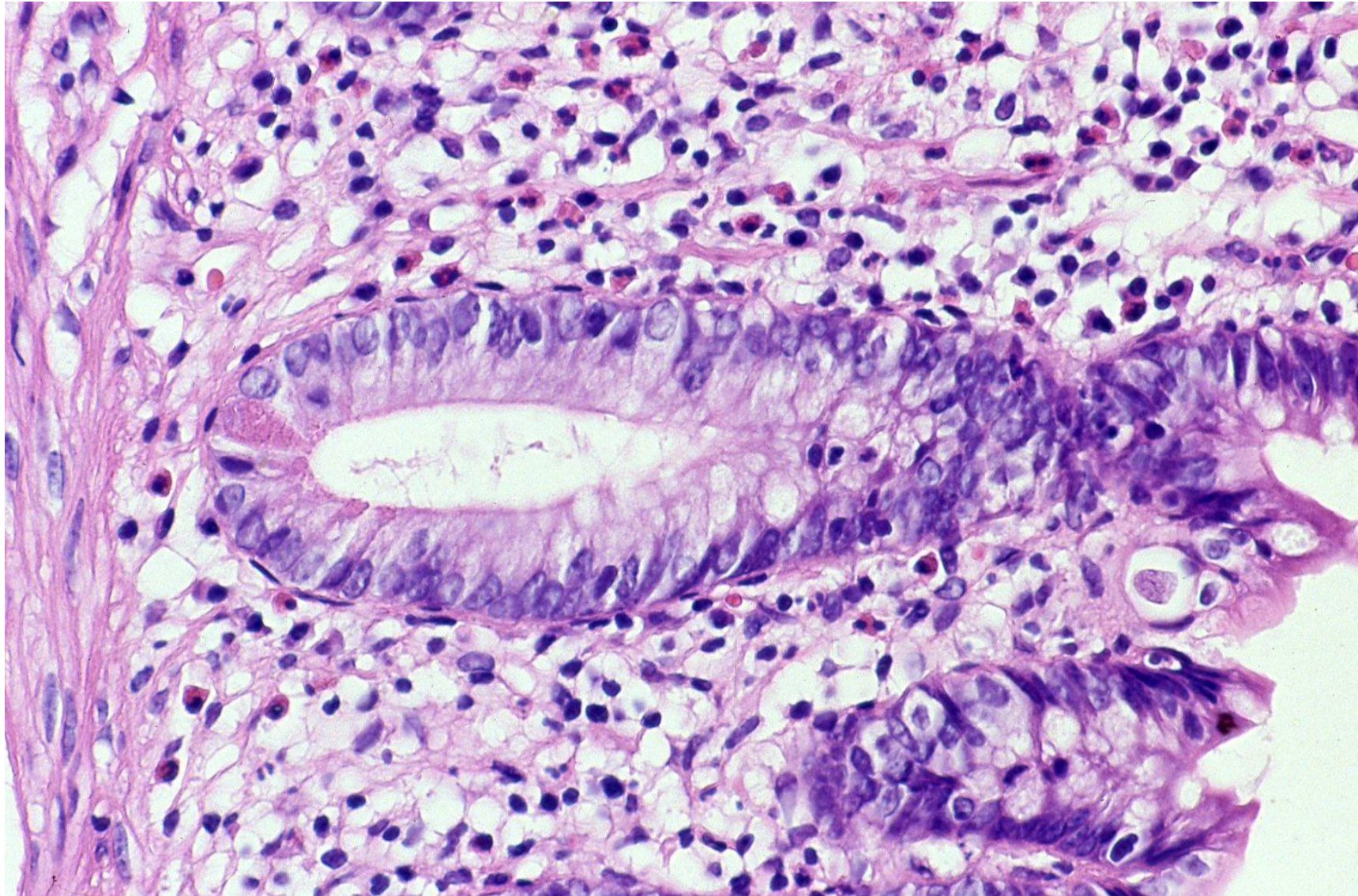
Cystoisosporiasis of the duodenum in a 71-year-old male patient complaining of abdominal pain, diarrhea and weight loss. Immunostaining using the 1:100 diluted patient's own serum decorates the schizonts infecting the duodenal epithelial cells. Immunostaining using the patient's own serum-2



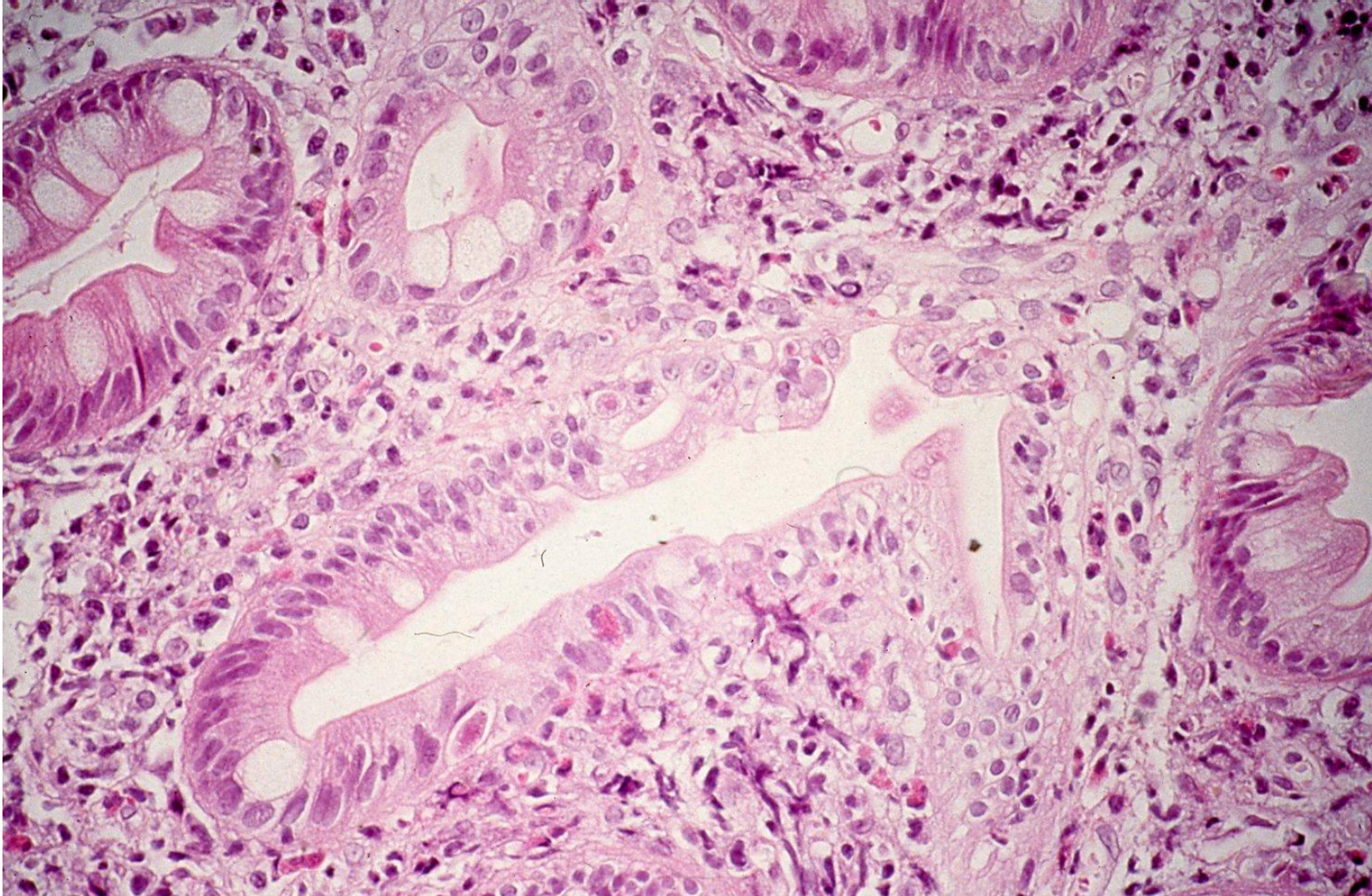
Cystoisosporiasis of the duodenum in a 71-year-old male patient complaining of abdominal pain, diarrhea and weight loss. Immunostaining using the 1:100 diluted patient's own serum decorates the merozoite-containing schizonts infecting the duodenal epithelial cells. Immunostaining using the patient's own serum-3



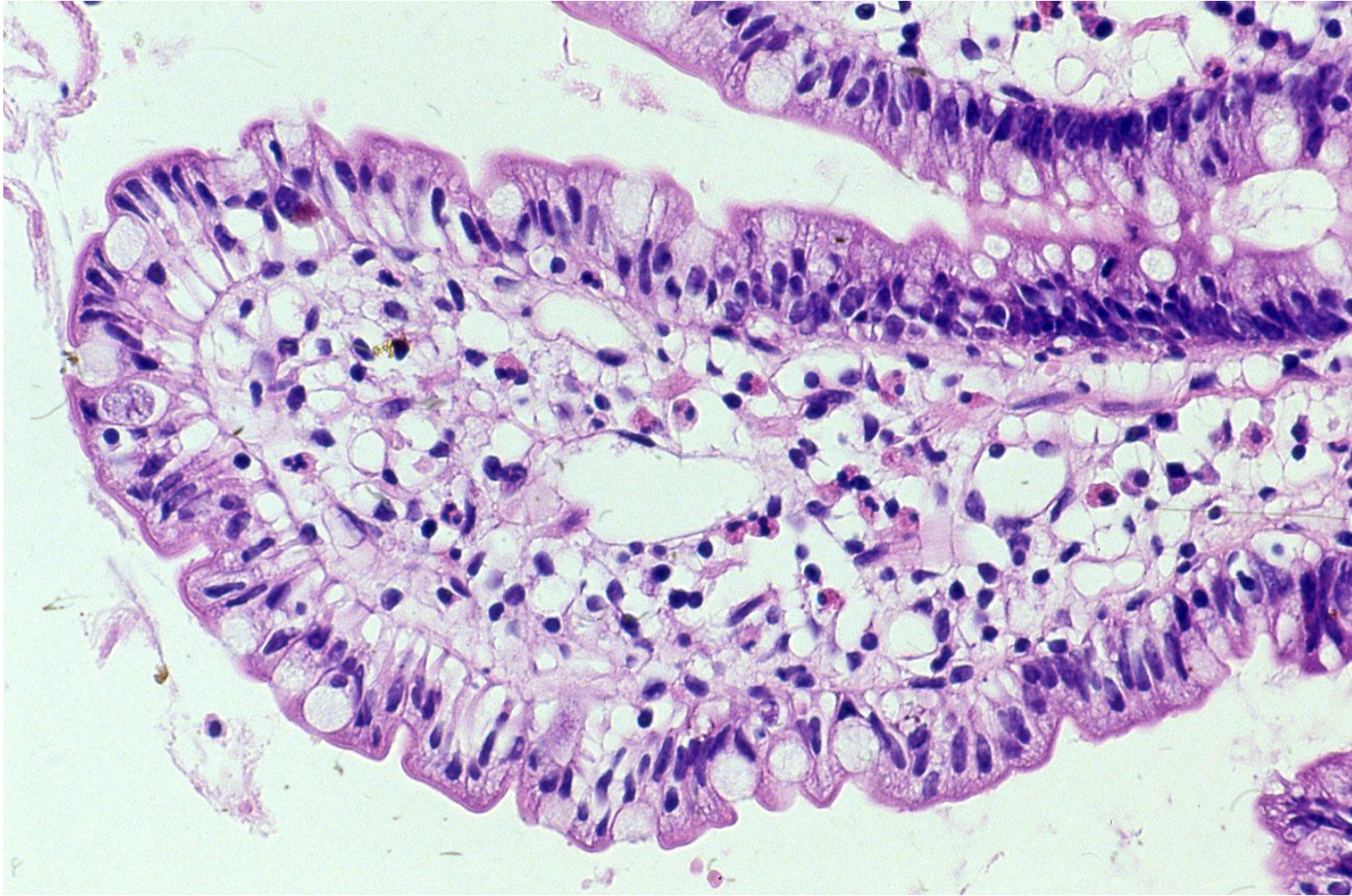
Cystoisosporiasis of the duodenum in a 71-year-old male patient complaining of abdominal pain, diarrhea and weight loss. Immunostaining using the 1:100 diluted patient's own serum decorates the merozoite-containing schizont infecting the duodenal epithelial cells. Immunostaining using the patient's own serum-4



Cystoisosporiasis of the duodenum in another male patient aged 40's complaining of diarrhea and weight loss. A few schizonts infect the duodenal epithelial cells in the subnuclear area. Eosinophilic infiltration is associated. H&E-case 2 (1)

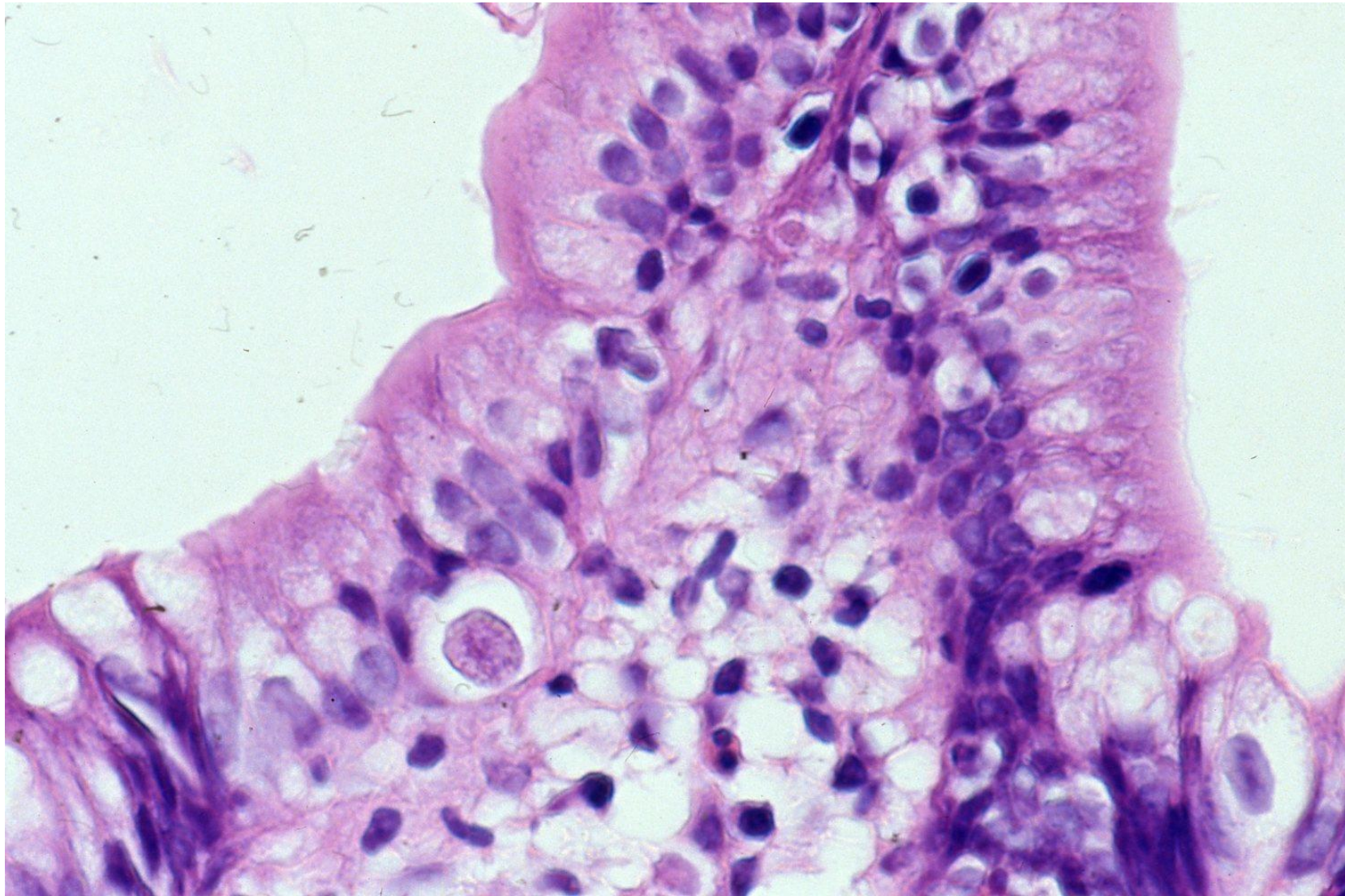


Cystoisosporiasis of the duodenum in another male patient aged 40's complaining of diarrhea and weight loss. A few schizonts infect the duodenal epithelial cells in the subnuclear area. Eosinophilic infiltration is associated. H&E-case 2 (2)

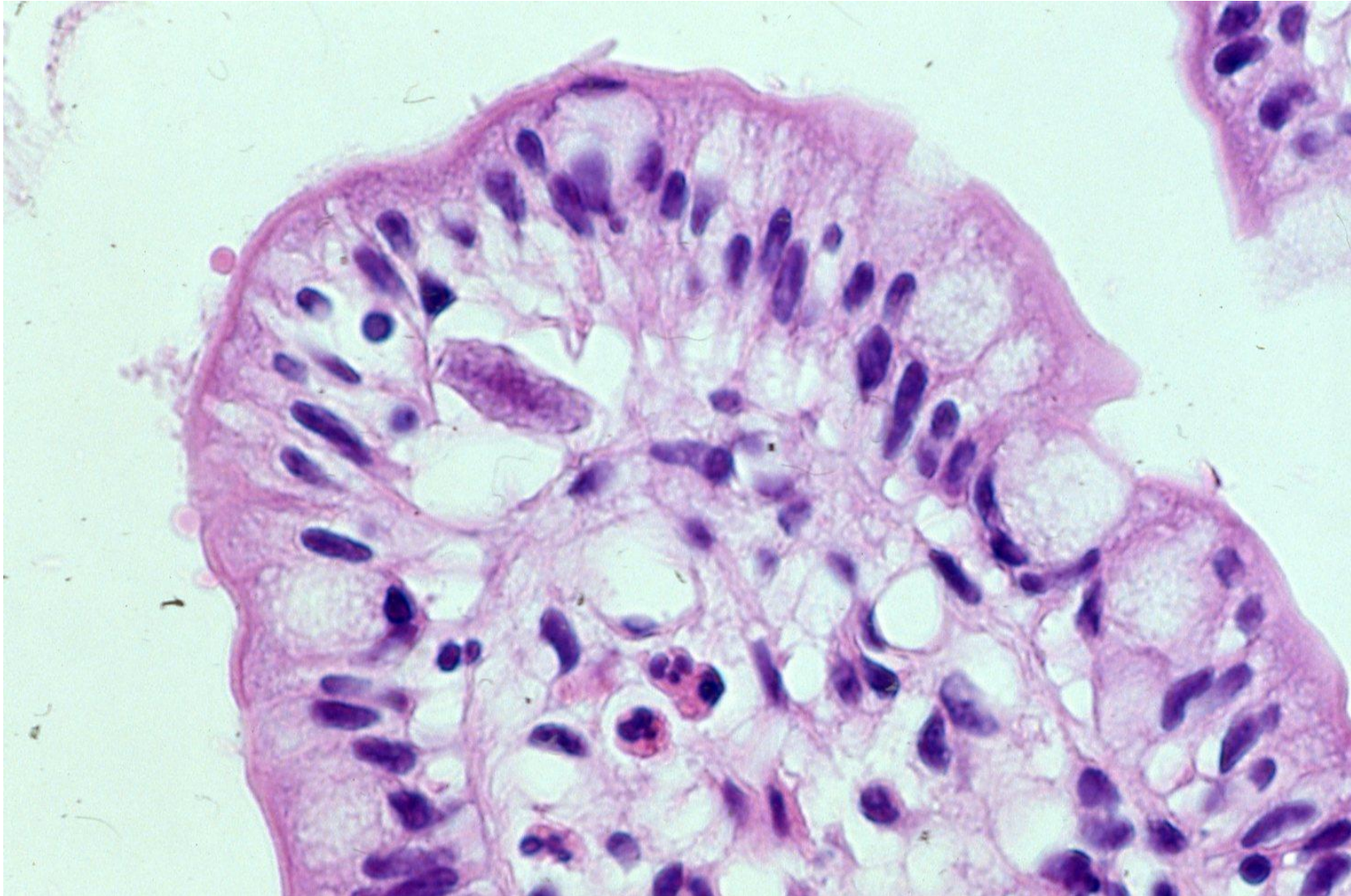


Cystoisosporiasis of the duodenum in another male patient aged 40's complaining of diarrhea and weight loss. A few schizonts infect the duodenal villous epithelial cells. Eosinophilic infiltration is associated. H&E-case 2 (3)

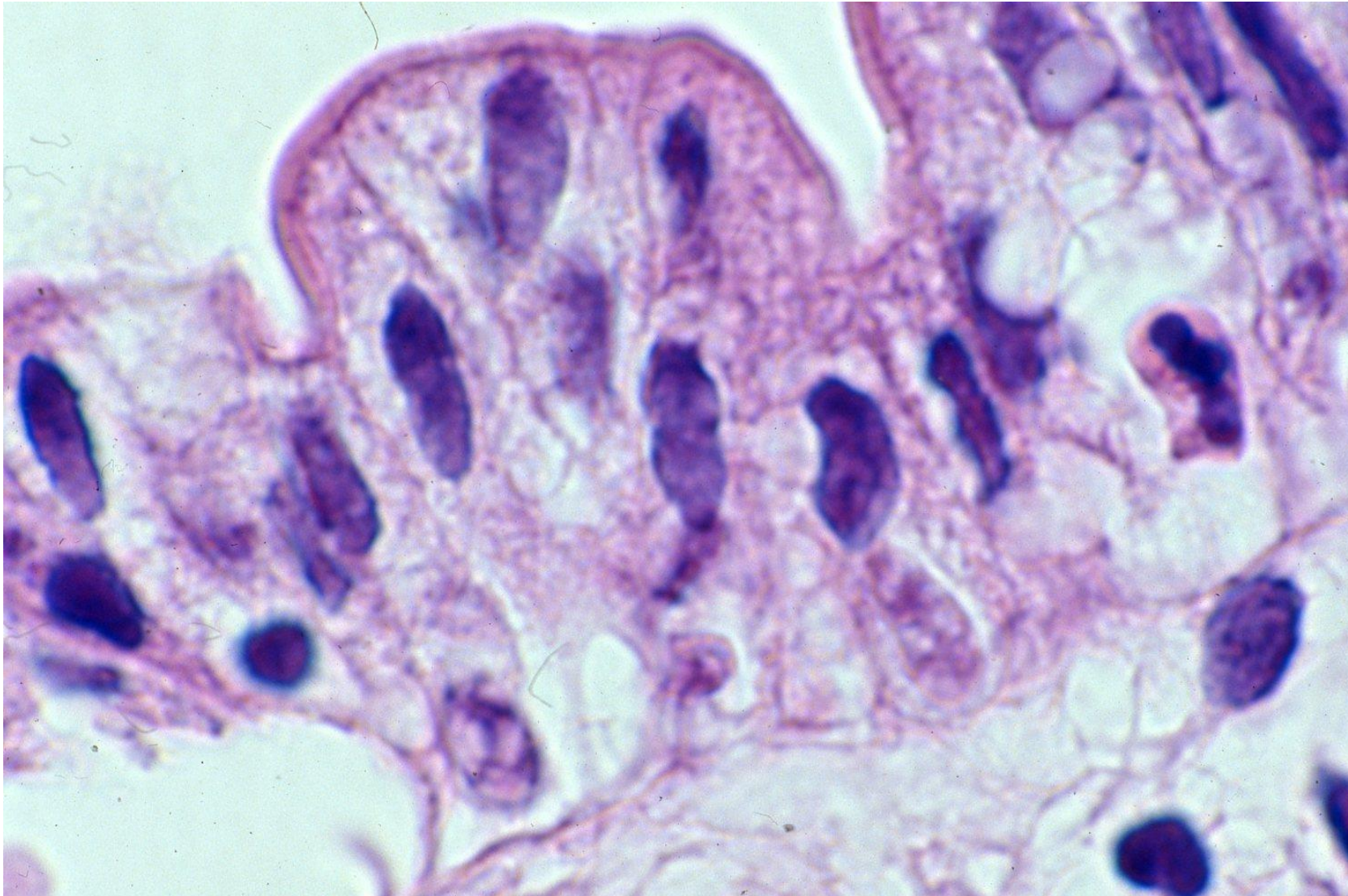




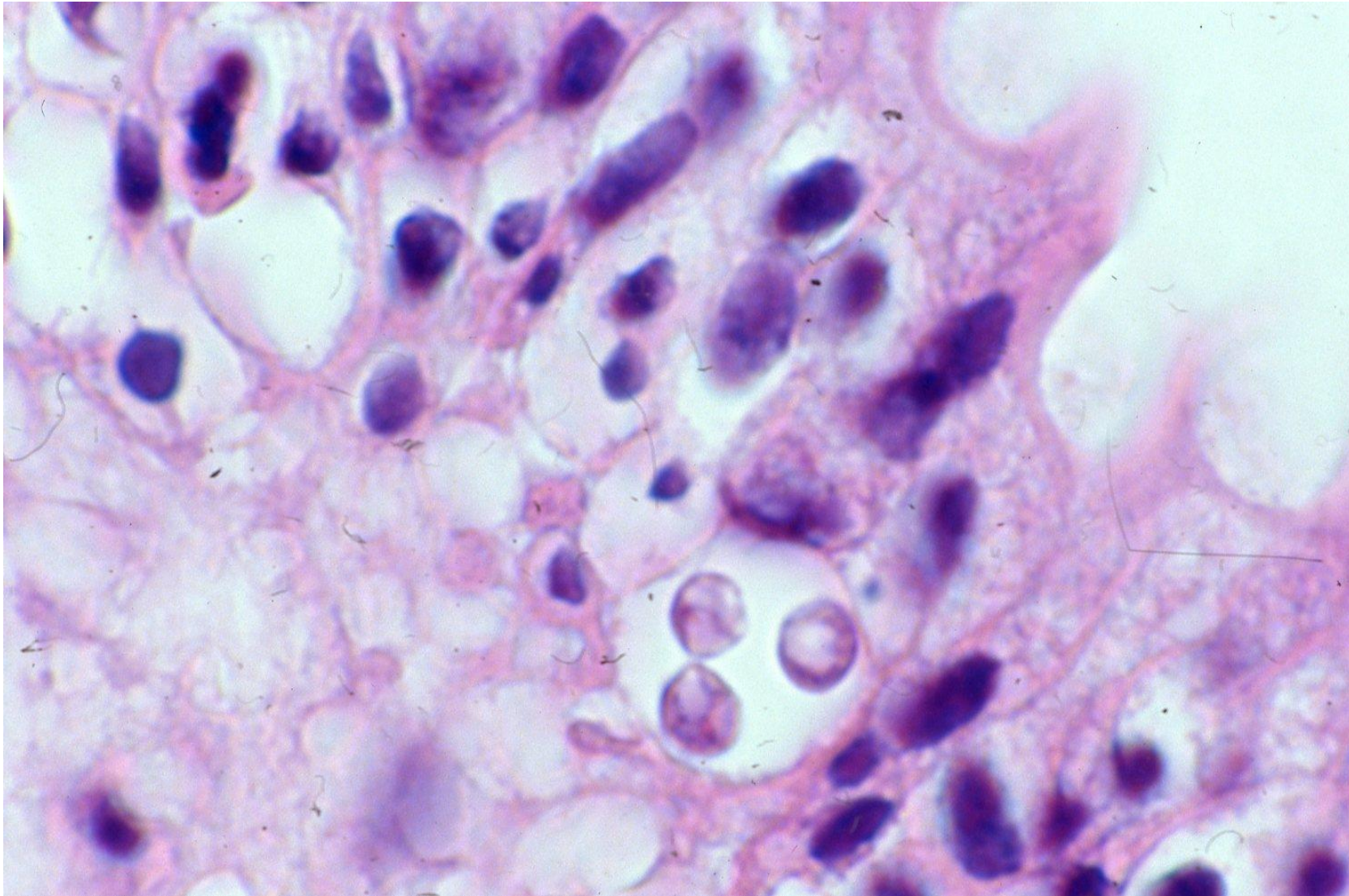
Cystoisosporiasis of the duodenum in another male patient aged 40's complaining of diarrhea and weight loss. A few schizonts infect the duodenal villous epithelial cells. H&E-case 2 (4)



Cystoisosporiasis of the duodenum in another male patient aged 40's complaining of diarrhea and weight loss. A few schizonts infect the duodenal villous epithelial cells. Eosinophilic infiltration is associated. H&E-case 2 (5)



Cystoisosporiasis of the duodenum in another male patient aged 40's complaining of diarrhea and weight loss. A few schizonts infect the duodenal villous epithelial cells. H&E-case 2 (6)



Cystoisosporiasis of the duodenum in another male patient aged 40's complaining of diarrhea and weight loss. A schizont containing merozoites infects the duodenal villous epithelial cells. H&E-case 2 (7)